

Air Products and Chemicals, Inc.  
4000 MacArthur Boulevard, Suite 420, East Tower  
Newport Beach, CA 92660



[www.airproducts.com](http://www.airproducts.com)

August 17th, 2023

Rajinder Sahota  
Chief, Industrial Strategies Division  
California Air Resources Board  
1001 I Street  
Sacramento, CA 95814

Comments submitted electronically

**RE: Comments Related to the July 27<sup>th</sup>, 2023, Cap-and-Trade Amendment Workshop**

Dear Ms. Sahota,

Air Products is pleased to provide comments in support of the California Air Resources Board (CARB) rulemaking for the Cap-and-Trade regulation (C&T). California leads the world in addressing climate change, including through programs like C&T and the Low Carbon Fuel Standard. Accordingly, the design elements that CARB refines in these programs set important precedents for other jurisdictions and global clean energy markets. We support California's climate goals and believe that Air Products can help California with the energy transition needed to meet the State's objectives and address global climate change. Hydrogen will play a critical role in the energy transition and will be useful in reducing greenhouse gas (GHG) emissions of sources covered by the emissions cap in California.

Air Products is the only U.S.-based global industrial gas company and the world's largest hydrogen producer and supplier for use in numerous markets, including transportation. Within California, the company safely operates 10 hydrogen production facilities, approximately 30 miles of hydrogen pipeline and currently supplies and operates a network of light-duty and heavy-duty hydrogen fueling stations, facilitating the transition to zero-emission transportation. We are also participating in the Alliance for Renewable Clean Hydrogen Energy System (ARCH<sub>2</sub>ES) hydrogen hub consortium to advance hydrogen hub funding in the state of California. Our existing hydrogen production facilities are subject to regulation under the Cap-and-Trade regulation.

On July 25, 2022, Air Products announced<sup>1</sup> that it will spend or commit at least \$4 billion in additional new capital for the transition to clean energy by 2027. In the two years preceding this announcement, Air Products had announced approximately \$11 billion in clean energy investments. Much of these investments include low carbon fuel and hydrogen that is expected to be available to the California market.

**Allowance Budgets**

Air Products supports CARB's plan to model different scenarios of stringency ranging from a 40% to 55% emissions cap reduction for 2030 relative to 1990 to inform annual allowance budgets. We also support

---

<sup>1</sup> Air Products, [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](#) (July 25, 2022)

modeling further reductions and setting related allowance budgets beyond 2030 to reduce uncertainty for long-term investment in and deployment of clean energy technologies. Based on the discussion at the workshop, the deeper 2030 cap reduction targets will rely on advances in renewable hydrogen deployment and mechanical carbon dioxide removal (workshop slides 5 and 20). As mentioned above, Air Products is advancing hydrogen production projects that can supply California with significant volumes of low carbon hydrogen ahead of the 2030 target.

Consistent with our comments during the 2022 Scoping Plan Update, we urge CARB to recognize the benefits of all forms of hydrogen and incentivize lowering the carbon intensity of hydrogen. In California, all forms of hydrogen make sense, as does support for both in-state and out-of-state projects. For example, hydrogen produced today using conventional steam methane reforming technology and natural gas provides over a 30% improvement in carbon intensity when compared to conventional transportation fuels<sup>2</sup> and zero criteria and toxic vehicle exhaust emissions—bringing much needed air quality and health benefits to disadvantaged communities. These benefits can be realized now while hydrogen is transitioned to lower carbon intensity production over time as the state progresses toward carbon neutrality.

In terms of out-of-state projects, according to California Energy Commission data, the state already relies on imported energy to supply nearly one-third of its electricity, more than 70 percent of its crude oil, and 90 percent of its natural gas. Altogether, more than two-thirds of California’s overall energy requirements are met from imported resources. Imported hydrogen will similarly be an important part of the clean energy mix for the state going forward. While the state has some world-class renewable energy resources, according to the Joint Agency SB 100 report, the State must maintain “record-breaking” levels of renewable energy deployment through mid-century, just to decarbonize the electricity sector. The 2022 Scoping Plan suggests significantly more clean energy capacity will be needed to achieve carbon neutrality in the State – including for hydrogen production and carbon dioxide removal. The California Public Utilities Commission has identified a need for new out-of-state renewable energy resources in its Integrated Planning Report, and the California Independent System Operator is planning for transmission to accommodate several gigawatts of renewable energy imports into the State.

California will very likely have to continue relying on all forms of hydrogen during the transition, including imported hydrogen, to meet its clean energy goals for electricity and other sectors – even in a clean energy future. The State’s approach to hydrogen should not foreclose on these opportunities which will likely be required to meet California’s climate and clean energy goals quickly and cost effectively.

### Product Benchmarks

Based on what was presented at the workshop, we understand that CARB is not planning to revisit the on-purpose hydrogen plant benchmarks at this time. We agree that this is not necessary, but should CARB decide differently in the course of this rulemaking, we believe our considerable expertise in the hydrogen sector will be useful to CARB.

As mentioned in our last comment letter, we are involved in a \$2.5 billion major expansion project with World Energy to develop North America’s largest sustainable aviation fuel (SAF) production facility in Paramount, California. CARB has indicated an interest in developing a product-specific benchmark(s) for biofuel production facilities like those that produce SAF or renewable diesel. We support this work to

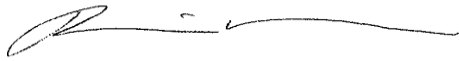
---

<sup>2</sup> Union of Concerned Scientist “How Clean Are Hydrogen Fuel Cell Electric Vehicles” Fact Sheet (September 2014)

develop the benchmark to facilitate refinery conversion and new grassroots production of biofuels as a key component of the energy transition and to reduce global GHG emissions.

Air Products appreciates the opportunity to provide this feedback. Please feel free to contact me by phone (916-860-9378) or email [hellermt@airproducts.com](mailto: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