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Air Products Comment Letter - 23-24 Clean Transportation Program

Additional submitted attachment is included below.

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November 28, 2023

Commissioner Patty Monahan
California Energy Commission
715 P Street
Sacramento, California 95814

RE: Comments on the 2023-2024 Investment Plan Update for the Clean Transportation Program – Docket Number 23-ALT-01

Dear Commissioner Monahan:

We appreciate the opportunity to provide input on the revised staff draft report for the 2023-2024 Investment Plan Update for the Clean Transportation Program (CTP).

Air Products is a global company providing essential industrial gases, related equipment, and applications expertise to customers in more than 50 countries. As the world's largest producer of hydrogen, Air Products is committed to driving the energy transition through a $15 billion global investment in clean hydrogen production capacity, including in California, Arizona, Texas, New York and other international sites.

GENERAL RECOMMENDATIONS

In addition to addressing the questions posed by staff at the workshop, Air Products would like to provide a series of recommendations applicable to the suite of CTP-funded programs. These recommendations are based on shifts that have occurred in the hydrogen for mobility space in recent years. Given these trends, we encourage the CEC to update its project evaluation framework to reflect the new realities on the ground, thereby ensuring the investments made by the state results in robust, accessible and reliable hydrogen fueling station deployments that contribute to the energy transition in the transportation sector.

Recommendation 1: Create a Level Playing Field

As the CEC looks to invest its limited CTP dollars, the agency should ensure that all zero-emission technologies are competing on a level playing field for funding. Given the urgent need to reduce emissions in the transportation sector across the board, it is critical that the state adopt an "all of the above" approach with respect to incentivizing zero-emission technologies. We recommend that the CEC given equal amounts of funding to battery electric vehicle (BEV) infrastructure and fuel cell electric vehicle (FCEV) infrastructure.

Recommendation 2: Invest in Commercial-Scale, Reliable Fueling Stations

To leverage economies of scale and drive down the cost of hydrogen for consumers, the CEC should prioritize investing in large, commercial-scale stations with on-site storage capable of servicing multiple duty cycles. Larger, multi-service stations with heavy, medium and light duty fueling capability and high-capacity on-site hydrogen storage will more efficiently drive California's transition to meet its ZEV targets and result in station accessibility and reliability for the consumer. In contrast, continuing with the build out

of small stations that do not have supply redundancy via on-site storage will exacerbate the current issues related to the fuel supply chain and increase costs significantly. To support the rollout of larger, robust multi-use stations, the CEC should increase the level of funding for each site and prioritize station supply and operational reliability, with metric and accountability measures.

Recommendation 3: Adopt Station Reliability Metrics and Claw-Back Provisions

Reliability for both EV charging stations and hydrogen refueling stations is becoming increasingly challenging as the early commercial market for light-duty zero-emission vehicles ramps up. The early generations of light-duty retail hydrogen stations were undersized for the markets they were serving and often lacked redundancies for critical station components. As such, any disruption of service to a hydrogen station, whether due to equipment failures, supply chain constraints or hydrogen supply disruptions, has had a ripple effect and strained other stations in the market. These reliability problems have hurt consumer confidence in hydrogen for mobility. The CEC recently recognized these issues by holding a customer experience workshop. We applaud your efforts to address this by introducing an operations and maintenance funding opportunity.

Moving forward, Air Products strongly encourages the CEC to make reliability a priority in its scoring criteria for fueling station solicitations. Commercial-scale multi-modal stations will play a critical role, as they enable station developers to address reliability and station operational efficiency through economically incorporating a more resilient design. Multi-modal stations are intentionally designed to include more infrastructure, such as compressors, storage tanks and dispensers, which provides increased redundancy and reduces or eliminates single points of failure. This means that stations stay online longer and provide a better consumer experience.

Additionally, we recommend that the CEC adopt claw-back mechanisms into its programs so the state can recoup funds from station projects owners who do not meet reliability and operational metrics. This safeguard will protect taxpayer investments, while also increasing station reliability and improving the customer experience.

Recommendation 4: Examine Viability of Project Applicants

The financial health of a project developer is a key indicator of the long-term viability of its deployments, and therefore the long-term durability of the state's investments. Hydrogen refueling stations are a fully commercialized technology and the CEC has been making investments into this technology for many years. The agency has experienced the full spectrum of project outcomes and the lessons learned. The CEC should incorporate an examination of the financial strength and execution capabilities of an applicant company as part of the solicitation evaluation and scoring processes. For example, reviewing an applicant's financial track record, leadership stability and developer execution capabilities will provide the CEC with indicators of the company's overall viability for long-term station development and operations. Employing these screening metrics will ensure that awardees can support fueling station deployments for the long-term.

Recommendation 5: Revise Eligibility Requirements for Pre-Purchased Equipment

Under the terms of existing CTP-funded programs, project participants are only able to receive funding for the purchase of equipment *after* they are selected as an awardee. This precludes the common strategy of purchasing equipment in bulk ahead in anticipation of the buildout of multiple stations. This preclusion is problematic for several reasons:

- **Longer project timelines**: The inability to be reimbursed for pre-purchased equipment means that developers need to order components after the award. These components often have long lead times before they arrive for installation. For example, it can take over twelve months after placing an order to receive components like hydrogen storage tubes and dispensers for installation. The ineligibility of pre-purchased equipment results in longer timelines for projects than is necessary. Removing this provision would result in faster project installations and allow the CEC to achieve its goals more quickly.
- **Lost savings**: Bulk purchasing results in lower project costs. Components purchased in bulk quantities allow for discounts. Taking advantage of these cost savings would allow the CEC to allocate its limited funding more efficiently.
- **Inhibition of scaling across the industry**: The current eligibility framework is acting as a barrier to the scaling of fueling infrastructure as it de facto requires that equipment for each project be bespoke. Opening the program eligibility for the bulk of standardized equipment will allow for easier project replicability—from engineering to components to installation—and therefore drive cost down and promote more cost-effective and efficient station build-out.

Given the benefits of purchasing standardized equipment in anticipation of fueling station projects, the CEC should take full advantage of these opportunities and allow the costs of pre-purchased equipment to eligible for reimbursement in CTP programs.

Recommendation 6: Allow for Substantial Evidence in Lieu of Site Control

Existing solicitation guidelines that require project applicants to demonstrate site control to be eligible to apply for funding present a major challenge for fueling station developers. The lengthy and complex nature of acquiring site control often does not align with the release of CEC solicitations and their associated timelines, resulting in missed opportunities for developers and the state. Rather than requiring proof of site control at the time of application, the CEC should allow project applicants to furnish documents demonstrating that acquisition of site control is well under way. Such documents could include letters of intent from property owners, proof of meetings with the Authority Having Jurisdiction (AHJ) and detailed site plans. To provide greater assurance that submitted projects will be successful, the CEC can require that developers submit a series of documents that demonstrate substantial progress toward obtaining site control. We believe that this recommendation strikes the right balance between the need to provide developers with greater flexibility in terms of site control timelines while also safeguarding the CEC's interest in investing in projects that will come to fruition. While the solicitation manuals generally leave the criteria for demonstrating site control to the discretion of CEC staff, the inclusion of this recommendation will provide greater clarity and consistent outcomes for developers.

REPONSES TO STAFF QUESTIONS

Question for Consideration #1 – Now that overall funding allocations have changed significantly, do the proposed CTP base funding allocations strike the right balance?

As noted in our general recommendations, we urge the CEC to adopt a level playing field that is technology neutral across all programs. The CEC should provide equal allocations of funding to BEV infrastructure and FCEV infrastructure.

Question for Consideration #2 – Is $5 million in CTP base funds for low-carbon fuels development appropriate for Fiscal Year 2023–2024?

Air Products is already executing several multi-billion-dollar investments in clean hydrogen production. Only through scale can costs be reduced and supply chains be made resilient. The existing incentive mechanisms only support small-scale or early-stage pilot low carbon hydrogen production. Air Products recommends either increasing the amount of CTP base funds to fund hydrogen production facilities at scale or reallocating the $5 million toward hydrogen refueling station development.

Question for Consideration #3 – Should Fiscal Year 2023–2024 funding be allocated to light-duty hydrogen refueling infrastructure given the significant funds remaining from previous fiscal years?

As the CEC looks to reallocate the unused resources from GFO-19-602, Air Products refers to the above outlined recommendations for the scoring criteria across CTP programs, including the unused resources. Given the amount of time that has elapsed since GFO-16-602 was released, **we recommend that the CEC issue a new solicitation for the relinquished funds rather than fall back on the list of awardees**. The past three years have seen numerous changes in the factors that influence project development. For example, site selections may no longer be feasible, the pandemic and inflation have changed equipment and labor pricing, business strategies have evolved and the overall hydrogen fueling market has shifted. Any reallocation of the relinquished funds should consider these and other factors. Issuing a new solicitation can account for these significant market changes and ensure that entities competing for funds are doing so on a level playing field.

Thank you for your continued commitment to zero-emission transportation infrastructure and to hydrogen as an important solution in the energy transition. We are pleased to provide feedback on the 2023-2024 Investment Plan Update for the Clean Transportation Program. Building a statewide pipeline of reliable and cost-effective hydrogen fueling infrastructure for multiple transportation modes that consumers will have confidence in is critical to long-term ZEV adoption and the larger transportation decarbonization goals. We are at an inflection point with hydrogen fueling infrastructure and supply in California. Learning lessons from recent experiences and accommodating market changes will allow us to make progress toward our shared goal of improving California's clean transportation deployments, including through the use of improved hydrogen station design and increased fuel supply reliability. We will continuously evaluate and improve our infrastructure capital commitment and strategies, and value the CEC's commitments to the CTP updates. If you have any questions, please do not hesitate to contact me or Joe Gagliano (gaglianoj@airproducts.com)

Respectfully,

Eric Guter
Vice President
H2fM and Clean Hydrogen