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November 13, 2020

Mr. Alexander Wong
Energy Commission Specialist I
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Subject: Proposed Regulatory Updates to California Energy Commission Title 20 Data Collection Regulation to Support New Analytical Needs - Air Products and Chemicals, Inc. Comments

Dear Mr. Wong:

Air Products and Chemicals, Inc. (Air Products) appreciates the opportunity to provide comments on regulatory applicability, confidential business information concerns and proposed requirements/language related to the proposed addition/inclusion of hydrogen (H₂) transportation fuel under the California Energy Commission (CEC) Title 20 Energy Data Collection regulation. As a global H₂ manufacturer and supplier since 1975 with over 1,300 H₂ plant operating years of experience and the largest supplier of H₂ transportation fuel in California (as well as ownership/operation of multiple H₂ fueling stations), Air Products is in a unique position to offer input to inform this rulemaking effort as it applies to H₂ production and its use as a transportation fuel. Air Products acknowledges some of the challenges faced by CEC staff in obtaining an accurate representation of the H₂ transportation fuel market and infrastructure as it continues to emerge and grow; however, we want to ensure that any additional regulatory requirements do not place unnecessary burden upon our limited resources nor jeopardize our business model in ways that will also impair the deployment of hydrogen fueling infrastructure. We thank staff for your ongoing efforts to request, and willingness to receive, stakeholder input from us on this regulation development via working groups, comment letters, possible future one-on-one meetings, etc.

Background/Applicability

It is Air Products' understanding that the purpose of the Data Collection Regulation is to follow the mandate, via statute, to "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." (Pub. Resources Code § 25301, subd. (a).) and that staff has identified H₂ fuel as an alternative fuel that has a growing significance in the fuels market. The purpose of these assessments is to allow, under Public Resources Code, for modeling/analytical work and evaluating responses to energy emergencies to occur.

In the justification for the inclusion of H₂ and the need for monthly fuel production data and feedstock input data to be reported, staff indicates that H₂ production that occurs outside of refineries (e.g., third-party, off-site merchant H₂ producers) is not currently captured by existing CEC refinery-required reporting requirements claiming that this information is needed by CEC to understand the operational requirements and flexibility of these facilities when their primary feedstocks are threatened, contemplating a domino effect on dependent facilities.

Staff points to the existence of certain data/inputs that are reported on an “ad-hoc request basis” which are claimed to lack uniformity in terms of period, breadth and depth that forces the CEC to commit to burdensome processing/analytical methods and techniques to create estimates of fuel consumed for transportation purposes; ultimately claiming this leaves alternative transportation fuel assessments and forecasts “open to criticisms such as lack-of-transparency, inconsistency and lack-of-compatibility with existing assessments and forecasts of established fuels and markets.”

While Air Products understands the mandate given to CEC and the desire to amend current regulations to include specific data/input reporting requirements related to H2 transportation fuel, we believe this to be unnecessarily burdensome on H2 producers with specific areas of concern/comment as follows:

- **Redundancy to other State Programs** – Air Products is required to comply with CARB Greenhouse Gas Mandatory Reporting Regulation which includes, but is not limited to, the following data/information for annual reporting (and verification) for our California H2 manufacturing facilities (which supply the majority of H2 used as transportation fuel in the State):
 - On-Purpose Gas H2 Production (in MT)
 - By-Product Gas H2 Production (in MT)
 - Liquid H2 Sold (MT)
 - H2 Sold/Transferred by Customer/Entity (in MT); including H2 fueling stations
 - Natural Gas Purchases (in MMBtu)
 - Electricity Purchases/Generation (in MWh)
 - Fuel and Feedstock Flow (in SCF); if reporting using material balance method
 - Fuel and Feedstock Carbon Content (in kg C/kg fuel or feedstock)
 - Fuel and Feedstock Molecular Weight (in kg/kgmol)
 - Feedstock Molecular H2 Content (in kg H2/kg feedstock)
 - Feedstock Atomic H2 Content (in kg H/kg feedstock)
 - Fuel Flows (in SCF); for CH4 and N2O reporting

Additionally, Air Products has opted-in to CARB Low Carbon Fuel Standard (LCFS) regulation for our largest transportation fuel producer (Wilmington H2 Plant) and are reporting the following information on a quarterly basis:

- H2 Dispensed by Station (in kg)

While acknowledging the LCFS regulation is optional at this time for H2 transportation fuel, our understanding/expectation is that the statewide threshold for dispensed H2 will be met in the next ~1 year and, at that time, all H2 transportation fuel will need to comply and submit the above information (as well as additional information/pathways around renewable content required to meet the “33% renewable” requirement).

- **Inclusion of Unnecessary Data/Input Requests** – Upon review of the proposed language and data/information requested, it appears there are several items whose inclusion seems either unnecessary or potentially problematic:
 - **Applicability** – the proposed regulation language (including associated definitions) as written would potentially include H2 production facilities that do not provide any H2 product for use as an alternative transportation fuel. We believe a distinction should be made (addressed later in this letter) such that

- any data/information reporting only be required for H2 production facilities that are providing H2 for use as a transportation fuel.
- **Non-Transportation Fuel Related Data** – CEC is requesting this data/information under the premise that H2 is an emerging alternative transportation fuel and Air Products' expectation is that any reporting should then be related solely on that and not for other uses of produced H2 such as by petroleum refineries or for "other purposes".
 - **H2 Product Pricing Info** – Air Products would question why the disclosure of extremely confidential wholesale pricing information for H2 product sold to fueling stations would be needed.
 - **LCFS Credit Price** – In many instances, the hydrogen producer is not in the position to associate an LCFS credit price with the hydrogen it sells to a hydrogen fuel retailer; it is the retailer that actually generates the LCFS credit. Also, at this point in time not all H2 dispensed is generating LCFS credits and/or monetizing credits via transfers/sale. Further, information on current LCFS credit pricing is readily available via numerous brokerage outlets on a monthly, if not daily, basis.
- **Resource/Financial Burden on H2 Producers** – Air Products views this as a significant new data collection effort that would require development of additional data/information management systems as well as training of staff across both operating plants and business offices (that administer billing and commercial terms) that will be needed to facilitate ongoing management/reporting requirements. Most of the data being requested are production-related reporting elements that occur at the plant-level while any pricing information would be managed by business/commercial teams (different group) and may vary by customer and specific contract/terms. AP roughly estimates this effort at 80-120 labor-hours initially and 100 labor-hours/yr on an ongoing basis.

All these items in mind, we would encourage CEC staff to **consider fulfilling any data/information needs through other existing, or shortly forthcoming, reporting regulations** either from the data/info that is already being reported or via coordination with administering agencies (e.g., CARB) in updating to those regulations to add any additional necessary and relevant information. This would limit the scope of what additionally may be needed and reduce the impact on the industry side to effectively support.

Confidential Business Information (CBI) Concerns

It is important to understand that Air Products' business is the supply of H2 under competitively negotiated contracts. In addition, our hydrogen production facilities sell excess steam and, in some cases, electric power generated in an integrated fashion with the hydrogen production process. Our business operates in a market where there are very few customers, and even fewer suppliers. Under the currently proposed regulation, both our primary customers and our own production facilities would be subject to the reporting requirements.

While Air Products acknowledges CECs effort to address CBI under Article 2, Sections 2505-2509, we nevertheless have serious concerns about sensitive/confidential business-critical information being disclosed. Simply having CBI outside of the secured walls of our company is a risk and threatens the competitive landscape unnecessarily; ultimately counterproductive to CEC/CARB goals and objectives as it would potentially inhibit private investments in H2 fueling stations,

infrastructure, etc. Specifically, the H2 production data/information that is being sought, if in a knowledgeable competitors' or customers' hands, allows for reverse-engineering/back-calculation of process efficiency and hence production costs – clearly a threat in a competitive market.

Air Products believes that **limiting the scope of data/information that is requested** and looking for opportunities to collect this data through other existing/imminent reporting means, as discussed above, will allow for additional sensitive CBI to not have to be submitted and managed by yet an additional regulatory body presenting more inherent risk to our business model. We also feel strongly that any **data/information required to be submitted** under any final version of this regulation **should be accepted as inherently confidential and not require a discrete application for confidential designation** as essentially all the information contemplated is sensitive and could be used detrimentally to Air Products if ever it were to be obtained by competitors or customers; there are no emissions or other similar data that would traditionally be understood to be publicly available being contemplated for inclusion.

Proposed Regulation Requirements/Language

Our comments/position above aside, Air Products has reviewed the proposed regulatory language and has the following specific comments:

- **§1382** definitions for “**Hydrogen plant**” and “**Major hydrogen plant**” should be modified to specify only for plants that are producing H2 used as an alternative transportation fuel pursuant to the ultimate purpose stated under **§1381** (and in CEC’s justification for its inclusion). This may be the intent but it is unclear as written and could be misinterpreted to require reporting for H2 plants that do not produce H2 for use as a transportation fuel.
- **§1383(a)** specifies quarterly reporting; however, **§1383(b)** introduction references “Informational Requirements for Monthly Reports”; suggest changing **§1383(b)** introduction to “Informational Requirements at a Monthly Granularity”. Further, to align with similar/redundant reporting that is already occurring under CARB GHG MRR, we feel annual reporting would be more appropriate/supportable.
- For **§1383(b)(2)** please be aware that for gaseous H2 production facilities (e.g., SMRs) there will typically be no inventory/storage present as it is a steady-state process from which H2 is pulled from as/when needed. Also, in the case of liquid H2 storage inventory this may also be supportive of non-transportation related uses (e.g., forklift fleets). Consider modifying this to clarify as inventory levels for H2 transportation fuel.
- **§1383(b)(3)** as written appears to be answered each month as simply methane and water (for SMR) and water and electricity (for electrolysis). Note that SMR H2 production can include other feedstocks such as refinery fuel gas.
- **§1383(b)(4)** does not specify what “inputs” are required to be reported. Please note that if consumption of utilities such as water and electricity are intended to be reported that this information could be misleading if the site-specific process/production is not fully understood by those utilizing this data. The presence of any cogeneration system(s), including additional water/steam that may be used as well as use of any generated power itself, would need to be considered. Further, additional water not directly related to H2 production may be utilized to provide water and/or generate additional steam as products to customers. Because of all of these potential complexities, instead of asking for this potentially misleading (and CBI/sensitive) data from facilities we would suggest staff consider using engineering/industry assumptions,

estimates, chemistry (e.g., steam-to-carbon ratio), etc. to approximate required feedstock and “inputs” on a per kg of H2 basis.

- We believe that both **§1383(b)(5)** and **§1383(b)(7)** are non-relevant data requests since this data collection effort is being proposed in relation to H2 as an alternative transportation fuel, not for its use in petroleum refineries or for “other purposes”.
- As stated above, requiring H2 producers to report average LCFS credit pricing **§1383(b)(8)** would not be possible as LCFS credit generation and any sale of credits occurs by the dispensing station owners (where H2 is dispensed) and this information would not be available to the hydrogen producer to report. Further, we would reiterate our strong opposition and concern around any reporting/disclosure of pricing as discussed above in relation to CBI concerns... regardless of mechanisms that would be in place to protect such information.

Air Products is very interested in continuing to participate in the development and discussion around any regulatory effort by CEC that would look to capture data/inputs associated with H2 production (including its use as an alternative transportation fuel). We appreciate the intent/efforts of staff and look forward to sharing our experience, knowledge and insight in future interactions. To that end, we will likely be reaching out in the near future to suggest setting up a meeting to further discuss the concerns/comments expressed within this letter. Until then, if anything is needed please do not hesitate to contact me at your convenience at (714) 642-4252 or at reebeljc@airproducts.com. Thank you.

Sincerely,



Jim Reebel
Sr. Principal Environmental Engineer

cc: Rachel Smith, Western HyCO Commercial Manager (Air Products)
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