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Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments regarding the Low Carbon Fuel Standard – Potential Regulation Amendments Workshop on October 14, 2020

Submitted electronically via:

https://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=lcfs-wkshp-oct20-ws&comm_period=1

California Air Resources Board:

Air Products is a world-leading industrial gases company, in operation for over 75 years. The company's core industrial gases business provides atmospheric and process gases and related equipment to manufacturing markets, including refining and petrochemical, metals, electronics, food and beverage and healthcare. Air Products is also the world's leading supplier of liquefied natural gas process technology and equipment. Approximately 17,000 employees are making Air Products the world's safest and best performing industrial gases company, providing sustainable offerings and excellent service to all customers. The company has over 315 employees and 15 locations in California, including atmospheric gases (oxygen/nitrogen/argon) and hydrogen production facilities. In addition, Air Products has designed, installed, and supplies a fleet of hydrogen fueling stations across California, facilitating the transition to carbon-free transportation.

Air Products welcomes the opportunity to submit comments regarding the potential amendments to the Low Carbon Fuel Standard (LCFS). Over the course of the last several years, Air Products has worked collaboratively with CARB staff and we appreciate the consideration given our concerns and recommendations. We look forward to continued dialogue with CARB staff to ensure the effective development of future program changes that will support the continued success of the program.

Context: Air Products has developed these recommendations of amendments to the LCFS program with the objective of increasing the opportunities for participation in activities that will incentivize investments that directly reduce the carbon intensity of fuels consumed in California. Increased participation (and hence investment) will increase the generation of LCFS credits and reduce the cost of compliance while supporting the greenhouse gas emission reduction goals of the LCFS program. Air Products' comments will address topics specifically raised by CARB staff in the October 14th workshop, as well as make recommendations to aspects of the LCFS regulation and CCS Protocol that were not

specifically highlighted in the workshop. We believe all these recommendations can improve the program and appreciate your consideration of them.

Further, CARB has a history of crafting regulatory language which ensured equitable treatment of all production activities, regardless of ownership structure – specifically, treating alternative hydrogen supply models equally – both “inside the fence” and “over the fence” supply options – under climate change regulations. Air Products seeks to continue this consistent treatment under the LCFS regulations.

DISCUSSION of COMMENTS:

Air Products has organized these comments by amendment recommendations for the LCFS regulation itself and for the CCS Protocol document.

LCFS Regulations

1. LCFS Rulemaking Scope and Timeline Should Prioritize Those Changes Which Can Immediately Incentivize Low-Carbon Fuel Investments

CARB introduced its objective to begin articulating the regulatory design elements of the “Post-2030” LCFS Program. The workshop presentation introduced the rulemaking approaches under consideration – taking a “single rulemaking” path or a “two rulemakings” path. CARB indicated that a single rulemaking that would include amendments to the current regulation, as well as articulate the post-2030 program elements, would require more time and not likely allow needed amendments to come into effect until 2025. The two rulemakings approach would allow important amendments to the program to proceed sooner and defer the articulation of the post-2030 program to the second rulemaking step, still allowing sufficient time to provide market signals for post-2030 LCFS program objectives.

While Air Products agrees that providing clear policy signals will help achieve the program’s post-2030 objectives, delaying the effective date of amendments to the existing program will seriously impact investment decisions that can advance the program’s objectives in the near-term. CARB should endeavor to complete a rulemaking specific to amendments as quickly as possible.

During the October 14th workshop, CARB staff indicated a two-step rulemaking that might address only the simplest of amendments being considered in the first rulemaking, deferring more complicated issues until the second, and much later, rulemaking. Air Products encourages CARB to consider all substantive amendments in the first rulemaking such that pending emission reduction project investment decisions can be rapidly to achieve CARB’s carbon reduction objectives.

2. *Expanding Opportunities for Project-Based Crediting Applications – Location of the Project* [§95489(e)]

Air Products strongly recommends the expansion of opportunities for project-based crediting under the LCFS. Air Products believes there are unintended barriers in the current regulation that prevent innovative emission reduction strategies from being realized due to language that is overly restrictive under the Refinery Investment Credit Program (RICP).

The General Requirements of the RICP [§95489(e)(1)(B)] restrict projects to only those which “...occur within the boundaries of the refinery, unless it involves carbon capture from hydrogen production.”

- a. Clarification of the Requirement: CARB staff has indicated through bilateral engagement an interpretation that the requirement to be “within the boundaries” can be satisfied if the project is located on adjacent property (or separated by a public road on otherwise adjacent property). Air Products requests this interpretation be added to the regulatory language for clarity and certainty.
- b. Expanding Project Eligibility through More Flexible Location Interpretation: There are project configurations which offer material emission reduction opportunities that are directly tied to refineries’ fossil fuel production but may not occur within the boundaries of an individual refinery (even with the “boundaries” interpretation noted above). For example, the current language suggests that a “process improvement” project [per §95489(e)(1)(D)(5)], such as replacement of less efficient hydrogen production facilities with more efficient hydrogen production facilities would only qualify to create LCFS credits if it was located “within the boundaries of the refinery”. However, it is a common hydrogen supply model for a single production facility located outside refinery boundaries to supply hydrogen to multiple refineries via pipeline. This aggregated supply model enables design, construction and operation of more efficient production facilities than can typically be afforded for multiple smaller, dedicated, “single-customer” facilities.

The emissions reductions that occur from a “process improvement project” that replaces less efficient facilities with more efficient facilities are just as real and additional for the refinery supplied from the “offsite” production source as those realized by the refinery that is supplied from the production source located within its boundaries. CARB should provide more flexibility in the co-location requirement to prevent regulations favoring one supply model over another when the resulting impact on the environment is the same.

Air Products acknowledges that the emission reductions that are achieved must be properly apportioned to each refinery gaining the benefit. This can readily be done by apportioning the quantity of hydrogen each refiner

consumes from the improved efficiency “process improvement project” plant. This is consistent with the apportioning concept articulated for LCFS credits created from carbon capture as required under §95489(e)(1)(F).

- c. Extend Project Location Flexibility to Expand Eligibility for Low-CI Electricity Use under the Refinery Investment Credit Program: The RICP provisions currently allow use of renewable or low-CI electricity that is supplied behind the meter (subject to the requirements of §95488.8(h)(1)) to create LCFS credits. This would allow a refinery producing its own hydrogen to utilize low-CI electricity within its hydrogen production facility as a means to create LCFS credits. However, the constraints of the project location requirements discussed above appear to prevent the same eligibility to create LCFS credits if the hydrogen plant (supplying that same refinery) using the low-CI electricity is from a third-party supplier (onsite or off-site). Air Products has proposed project configurations where self-produced low-CI electricity offers further CO₂ footprint reduction from grid-power for hydrogen production. Air Products asks CARB to allow comparable access to this emission reduction strategy for third party hydrogen suppliers to refiners. This can be achieved through increasing the flexibility of the “project location” language discussed above. Rephrasing/expanding the language that requires the power generation to be “... under the control of the pathway applicant” will also be required.

Similar to the credit apportionment consideration discussed above, if the hydrogen plant utilizing low-CI electricity serves multiple hydrogen customers, the LCFS credits created would be apportioned to each refinery customer by their proportion of the total hydrogen production they consume. Air Products also accepts the over-arching limitation that the eligibility for low-CI electricity to create LCFS credits under the RICP would be limited to the extent the power demand of the hydrogen plant matches the generation output (on an annual basis) – LCFS credit creation would not result from the sale of excess generated power to the grid.

3. Expand the Applicability of “Book and Claim Accounting” to Incentivize Increased Utilization of Low-CI Feedstocks [§95488.1]

Air Products strongly recommends expanding the use of book and claim accounting to allow additional low-CI feedstocks to contribute to emission reductions that produce low-CI fuels. The current regulations allow such consideration for low-CI electricity and biomethane, but the regulatory language is too restrictive to allow other viable low-CI pathways. Air Products recommends the following additions to §95488.1:

- a. Low-CI Hydrogen as a Feedstock for Renewable Diesel Production: Hydrogen is a critical process feedstock in the production of renewable diesel fuel. There are various pathways to reducing the carbon intensity

of hydrogen production¹, all of which can extend those emission reductions to the renewable diesel product's carbon intensity. To facilitate the utilization of low-CI hydrogen, book and claim accounting must be allowed to account for common hydrogen supply models:

- Low-CI hydrogen supplied directly to a renewable diesel producer, and
- Low-CI hydrogen co-mingled with “conventional” (standard fossil fuel production) hydrogen in a single producer-owned (multi-source/multi-consumer) distribution pipeline, where the low-CI hydrogen can be directly assigned to the renewable diesel producer. In such supply scenarios, the carbon intensity reduction benefit would be limited by matching low-CI hydrogen production with the hydrogen consumption of the renewable diesel producer.

b. Low-CI Hydrogen as a Feedstock for Low-CI Fossil Fuel Production:

Hydrogen is also a critical feedstock in the production of conventional fossil fuels. There are various pathways to reducing the carbon intensity of hydrogen production, all of which can extend those emission reductions to the conventional fossil fuel's carbon intensity. To facilitate the utilization of low-CI hydrogen, book and claim accounting must be allowed to account for common hydrogen supply models, including low-CI hydrogen co-mingled with “conventional” (standard fossil fuel production) hydrogen in a single producer-owned (multi-source/multi-consumer) distribution pipeline, where the low-CI hydrogen can be directly assigned to a specified fossil fuel producer. In such supply scenarios, the carbon intensity reduction benefit would be limited by matching low-CI hydrogen production with the hydrogen consumption of the specified petroleum refiner.

Regulatory accommodation for effectively utilizing existing product hydrogen distribution pipeline networks is critical to enabling the most environmentally and resource efficient low-CI hydrogen production scenarios to be realized. This is particularly true where the location of the low-CI feedstock (e.g. biomass) or an optimal geologic CO₂ sink is not co-located with the demand center for the low-CI hydrogen. The hydrogen can be produced in the location most suited for generating a low-CI product and distributed to its “best use” customer. This supply approach in a more environmentally and resource efficient fashion, compared to the alternative of transporting biomass or waste feedstock via truck or rail to a hydrogen production site co-located with the hydrogen consumer. Pipeline transport of low-CI hydrogen generates essentially no CO₂ and criteria pollutant emissions relative to the transport of feedstocks.

¹ Air Products considers multiple low-CI hydrogen production pathways, separately and in combination, as viable, including carbon capture and sequestration, gasification of biomass feedstocks, biomethane reforming, and electrolysis using low-CI electricity. All such strategies may be employed in a networked, multi-production source, multi-customer distribution network that may require book and claim accounting to deliver bespoke low-CI hydrogen to a specific customer producing a low(er)-CI fuel.

The ability to retain the low-CI environmental attribute when the low-CI hydrogen is transported via a common (multiple hydrogen sources) pipeline is consistent with book and claim accounting approaches for low-CI electricity and biomethane, and serves the same intended benefit to reducing fuel pathway emission in the most efficient fashion.

- c. Low-CI Hydrogen as a Transportation Fuel: Consistent with the examples above, there are instances where the production of low-CI hydrogen may best be undertaken at a location different from the dispensing of that hydrogen as a transportation fuel. Utilizing hydrogen pipeline distribution networks is effective method to reach multiple outlying hydrogen fuel dispensing or intermediate processing (e.g. liquefaction) facilities. To sufficiently incentivize the conversion of internal combustion vehicles to hydrogen fuel, it is essential that the low-CI environmental attribute of that hydrogen is retained when transported via a common (multiple hydrogen sources) pipeline.
- d. Biopropane as a Feedstock for Low-CI Hydrogen Production: While commonly utilizing fossil methane, other hydrocarbons can be reformed to produce hydrogen. In the same way that biomethane and renewable natural gas can be a low-CI substitute for fossil natural gas, biopropane/renewable propane can serve the same purpose, reducing the carbon-intensity of hydrogen produced from that feedstock. The opportunity to utilize biopropane is particularly attractive where renewable diesel production generates a co-product propane stream that is a suitable feedstock for low-CI hydrogen production. In a virtuous cycle, this low-CI hydrogen can then be used as a feedstock for the production of the renewable diesel fuel.

Typically, the quantity of biopropane generated is not sufficient to totally replace fossil natural gas for commercial-scale hydrogen production, but since biopropane is generated from 100% biogenic sources, its contribution to lowering the CI of produced hydrogen is material. Therefore, Air Products recommends expanding the use of book and claim accounting to allow biopropane to be considered a Specified Source Feedstock for hydrogen production where that portion of the produced hydrogen is returned to the renewable diesel producer along with the environmental attributes of the biopropane, further reducing the carbon intensity of the renewable diesel produced.

As discussed above, there will be instances where the hydrogen produced is transported to the renewable diesel customer through a networked hydrogen distribution system where “fossil” hydrogen is mixed with “low-CI” hydrogen. The book and claim accounting concept must allow the low-CI hydrogen to also be considered a Specified Source Feedstock when consumed by the targeted renewable diesel producer. Air Products believes common material balance and accounting principles can be applied to ensure there is an appropriate matching of the environmental

attributes of the biopropane to the low-CI hydrogen subsequently consumed as a feedstock. Further, where the renewable diesel process requires more hydrogen than can be attributed to the biopropane feedstock used, a simple prorating of the blend of low-CI hydrogen and conventional hydrogen can be reported and verified.

4. Support Development of a Tier 1 Simplified CI Calculator for Hydrogen

CARB indicated consideration of creating a Tier 1 Simplified CI Calculator for hydrogen pathways. Air Products strongly endorses this action and believes it will lead to faster fuel pathway applications and approvals where hydrogen is used as a feedstock or a fuel. Air Products encourages CARB to pursue robust engagement with the hydrogen production sector so the full range of hydrogen production pathways can be considered, and the most accurate and consistent information can be incorporated into the calculator. We stand ready to contribute to this effort in cooperation with CARB staff.

5. Clarify Additionality Requirements for Processes Generating Low-CI Fuels and Feedstocks

Air Products recommends CARB clarify the basis for demonstrating additionality when producers seek recognition of low carbon intensity fuel pathways. Lack of such clarity is a barrier to innovation and opportunities to make enhancements to existing systems/processes that would introduce more low-CI fuels and feedstocks into the California transportation fuels market. Air Products acknowledges that additionality is an appropriate concern in some fuel pathway schemes, but offers the following example where a lack of clear additionality criteria may have the impact of actually increasing CO₂ emissions where, instead, there is an opportunity to achieve material and relevant emission reductions within a fuel pathway:

“Legacy” CCS Operations: A facility that has previously captured CO₂ in a manner not compliant with the LCFS CCS Protocol and the CO₂ capture has been discontinued should be considered an eligible emission reduction activity when CO₂ capture and sequestration is reestablished in a manner compliant with the LCFS CCS Protocol. Absent the financial incentive of a fuel pathway to generate LCFS credits, such a CO₂ source will continue to vent these emissions to the environment rather than make the necessary investments and operational changes needed to become CCS Protocol compliant. CARB staff has interpreted an implied additionality criterion that excludes any such legacy carbon capture operations from eligibility to generate LCFS credits regardless of the merits of the circumstances.

The imposition of such an additionality criterion is being arbitrarily applied to CCS projects whereas legacy renewable power resources and legacy renewable fuel (biogas, RNG, ethanol, etc.) production facilities are not deemed ineligible when seeking LCFS credit creation through fuel pathways.

Air Products asks CARB to reconsider an interpretation excluding what they consider “legacy” CO₂ capture facilities and provide a regulatory basis for any such

additionality criterion that can be used to assess the eligibility of other emission reduction opportunities.

6. *Allocation of CO₂ Emissions to Co-Product Fuel and/or Feedstock*

Air Products also recommends CARB clarify the basis for allocating the carbon footprint to co-products when one will be used as a low-CI feedstock in a fuel pathway or used as a fuel directly. Air Products is aware of a generally accepted concept of allocating emissions between products according to their respective energy content. There are examples, however, where this may not represent the most appropriate basis when the co-products are not both “energy” streams.

Hydrogen can be a reaction co-product of many chemical production and petroleum refining operations. In some instances, a low-purity hydrogen off-gas stream can be segregated and the hydrogen separated from other components, resulting in a high purity hydrogen product suitable for use as a fuel pathway feedstock, or with further purification, as a transportation fuel itself. Because the crude hydrogen off-gas stream has been generated as a result of another primary production activity, its lifecycle CO₂ emissions are not directly evident. Air Products requests that CARB clarify the process for establishing the carbon intensity of such co-product hydrogen, and suggests a couple of considerations:

- Where the off-gas stream is being (or could be) used as a combustion fuel source, the implied carbon intensity should be the CO₂ footprint of an equivalent quantity, on the basis of energy content, of natural gas, as the fuel value of the hydrogen separated would need to be replaced by a like (thermal energy) amount of another fuel, natural gas being the most common one. Any additional direct or indirect emissions attributed to the hydrogen separation and purification process would then be added to the “replacement fuel” footprint to yield an overall carbon intensity value.
- Where the nature of the production process does not enable utilization of the off-gas stream as a combustion fuel source, and the stream (and its contained hydrogen) is vented or flared, then Air Products recommends the allocation of the underlying emission from the overall process be allocated on the basis of the economic value of the co-products.

Such an approach will continue to provide an incentive for separating hydrogen where it can be used as a low-CI feedstock or fuel, while fairly representing the “net GHG reduction” concept of a robust life cycle assessment.

CCS Protocol

The October 14th LCFS Amendments workshop specifically indicated CARB's interest in suggestions for opportunities where additional clarity or potential changes could improve the CCS Protocol (slide 44). Air Products offers the following suggestions for CARB's consideration.

1. Clarification of Designation of the CCS Project Operator and Project Participant's Roles Related to Applying for and CCS Permanence Certification

The CCS Protocol is clear in stating the CCS Project Operator must apply for the Sequestration Site Certification and the CCS Project Certification to affect the required Permanence Certification. However, there is ambiguity as to which project entity/entities can and/or must apply for, and subsequently hold, the Permanence Certification when there are multiple entities participating in various aspects of CCS project and the creation/receipt of the LCFS credits derived from it. Bilateral discussions with CARB staff have suggested some project structure scenarios would require a joint Permanence Certification application between participating parties, although the CCS Protocol does not specifically envision such joint applications.

Further, there are project development scenarios that bring in sources of CO₂ sequentially, over time. The CCS Protocol includes a process for Permanence Certification modifications, but is unclear if such sequential participation scenarios require revocation of the certification covering initial project participants with reissuance reflecting additional joint applicants or if just an additional, separate certification with the new project entrant is required.

Confusion arises due to the definitions of CCS Project Operator, which is that entity responsible for the CCS Project, composed of both the CO₂ capture facility and the geologic sequestration site. But there are CCS project structure scenarios where different entities are responsible for different elements of the project. Air Products has postulated several scenarios where the specific roles in the Permanence Certification process need to be clarified. These include:

- a. An independent hydrogen producer employs CCS to generate low-CI hydrogen used by a refiner to produce lower-CI fuels. The hydrogen producer is responsible for CO₂ capture, transport and injection and acts as the CCS Project Operator. LCFS credits are to be claimed by the refinery under the Refinery Investment Credit Program. Is the hydrogen producer considered the CCS Project Operator? Because the LCFS credits generated are to be claimed by the refiner under the RICP, must the application for the Permanence Certification be "joint" with the refiner? What provisions of the CCS Protocol describe a joint application process?
- b. Building on scenario "a" above, except the hydrogen producer supplies more than one refiner with low CI-hydrogen from the same facility. If CARB position (per above) is that a joint application is required, does this

scenario imply a “multi-party” joint application with all refiners receiving the low-CI supplied hydrogen? What would the application process be for sequential participants? Can project participants designate one entity as the CCS Project Operator?

- c. A CCS project aggregates CO₂ from a source where the capture is under the control of one entity and the transport and injection are under the control of a separate entity. Can a single entity be designated the CCS Project Operator, with sole CCS Permanence Certification application responsibility? Must the application for the Permanence Certification be “joint” with both entities?
- d. Building on scenarios “b” and “c”, the scope of the CCS project includes multiple CO₂ sources, with different sources in varying roles of the CO₂ capture, transport, and injection process. Can a single entity be designated the CCS Project Operator, with sole CCS Permanence Certification application responsibility? Must the application for the Permanence Certification be “joint” with both entities?

These scenarios multiply when one of the participants is using low-CI hydrogen (via CCS), to produce a low-CI alternative fuel. Now the credit generation process is through a Tier 2 Fuel Pathway, not the RICP. The LCFS regulation is clear that the Fuel Pathway application must be joint between the fuel producer and the CCS Project Operator, but it is unclear how this requirement impacts the designation of the CCS Project Operator and their responsibility, singularly or as a joint entity, in the Permanence Certification application process.

If CARB is interpreting the CCS Protocol language as requiring joint Permanence Certification applications, there also needs to be a clear articulation of the responsibilities of each party, or a statement that joint holders of a Permanence Certification are considered to carry “joint and several” liabilities.

Air Products strongly recommends CARB provide clarification regarding the definition of the CCS Project Operator under a variety of project structure scenarios and provide a process for legal agreement among project participants to designate a CCS Project Operator.

2. *Clarification on Transferability of Permanence Certification*

The CCS Protocol states the Permanence Certification is non-transferable [Section 3, subsection 1.2(b)] but can be modified within the provisions of Section 3, subsection 8. Subsection 8.2(a)(4) allows for a “...change in ownership or operational control...” of the CCS project to be treated as a minor modification to the Permanence Certification, avoiding revocation/reissuance, and without the need for a redundant draft Permanence Certification and public review process. However, in bilateral discussions, CARB has indicated that (at least some) changes in ownership would result in revocation, and necessitate reissuance, of the Permanence Certification. Staff indicated the impacts on

representations of financial assurance, Buffer Account control, and subjective considerations of the revised ownership entity/entities would preclude the minor modifications we believed were envisioned under subsection 8.2(a)(4).

This uncertainty is amplified if the Permanence Certification process must include joint applicants, as discussed in issue #1, above. Where joint applicants include petroleum refineries and/or alternative fuel producers, there is ample history of mergers, acquisitions, and sales of assets to necessitate reasonable accommodations for such transactions without impeding the ongoing emission reduction activity of the subject CCS project.

Air Products strongly recommends CARB clarify those circumstances under which a change in ownership will qualify as a minor modification [per Section 3, subsection 8.2(a)(4)]. Air Products strongly recommends a flexible process for such modifications, as a narrow interpretation of qualifying ownership changes, or an overly cumbersome process satisfy possible CARB concerns regarding the revised ownership structure, has the potential to seriously impair the formation of business entities that can act as the CCS Project Operator and hence impair the viability of CCS projects, themselves.

3. *Clarification of Process for Buffer Account Contributions where CCS Affects a Reduction in an Alternative Fuel's CI Value*

Where a CCS project is associated with an alternative fuel pathway, it is unclear where in the process, and by whom, the contribution to the Buffer Account is incorporated into the overall pathway CI value. For example, consider a case where low-CI hydrogen, produced employing CCS, is supplied to renewable diesel producers. Where the renewable diesel fuel producer applies for the fuel pathway and secures the LCFS credits for fuel delivered into the California fuel market, it is unclear the mechanism by which the contribution to the CI value of the hydrogen from the net GHG reduction achieved through CCS will be determined and assigned to the CCS Project Operator's Buffer Account. Air Products requests CARB to clarify process and the different entities' roles to affect the Buffer Account contribution.

4. *Clarification that Administrative Controls Can Effectively Protect the CO₂ Storage Complex from Future Drilling*

Section 3, subsection 9(c) of the CCS Protocol requires proof that the CO₂ storage complex is protected from future drilling and/or resource extraction activity that might compromise the permanence of the CO₂ sequestration. Air Products recommends ARB clarify that administrative controls can offer the level of protection intended under the current language. Specifically, augmenting the existing control on well drilling exercised by the California Geologic Energy Management division (CalGEM) with surface landowner restrictions (e.g. encroachment agreement restrictions) should be considered sufficiently protective of the storage complex.

5. *Expand the Applicability of the CCS Protocol to Offshore Storage Reservoirs*

The CCS Protocol is currently applicable to only onshore sequestration. There are additional opportunities to consider off-shore CO₂ sequestration reservoirs that could expand the application of CCS to regions where there are barriers to accessing suitable onshore geologic formations. Offshore injection well drilling technology and experience has been demonstrated around the world and California has offshore geology that is well suited for geologic CO₂ sequestration. CARB indicated during the original CCS rulemaking process that offshore sequestration could be considered in the future; Air Products recommends CARB begin the process of such an expansion of the potential applicability.

Air Products recognizes these comments are more conceptual in nature than offering specific regulatory language remedies. We look forward to continuing to engage in this process and with CARB staff to discuss specific regulatory language in the coming months.

Air Products appreciates the diligent efforts by CARB staff, and we stand ready to provide further information to support the Board's deliberations and a flexible, inclusive, and successful LCFS program. We believe these changes can materially contribute to California's achievement of the governor's ambitious greenhouse gas emission reduction goals. Please feel free to contact me by phone (610-909-7313) or email at (kadams@climeco.com) to continue our constructive dialogue.

Respectfully,



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