

---

**Air Products and Chemicals, Inc.**  
7201 Hamilton Boulevard  
Allentown, PA 18195-1501  
Telephone (610) 481-4911

September 25, 2012

Ms. Mary Nichols – Chair, California Air Resources Board  
1001 I Street  
PO Box 2815  
Sacramento, CA 95812

RE: Comments Regarding Revisions to the Refinery Benchmark for Allowance Allocations under the Cap & Trade Program - “[aug-28-cwt-bm-ws](#)” docket (Submitted electronically to [http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=aug-28-cwt-bm-ws&comm\\_period=1](http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=aug-28-cwt-bm-ws&comm_period=1))

Dear Ms. Nichols:

Air Products is a global, Fortune 250 company that supplies atmospheric, process, medical and specialty gases, specialty chemicals and process equipment serving a diverse range of industries, including primary metals, refining, electronics, food and glass sectors, as well as healthcare and many other general manufacturing industries. Air Products has over 400 employees and 30 locations in California, including numerous atmospheric gases (oxygen/nitrogen/argon) and hydrogen production facilities, electronic specialty gases and materials production and electricity generating facilities. In addition, Air Products serves a fleet of hydrogen fueling stations across the state, facilitating the transition to carbon-free transportation.

Air Products welcomes the opportunity to submit comments regarding potential revisions to the allowance allocation benchmarks for the refinery and hydrogen sectors under the cap & trade program. Air Products hydrogen production facilities are a major component in this sector and materially impacted by this rulemaking. With similar facilities in Europe, subject to comparable regulations under the ETS Phase III program, Air Products also brings a perspective based on significant research and deliberation regarding the methodology employed to establish the allowance benchmarks under this program. We look forward to a continued working partnership with CARB staff to ensure an equitable and effective allocation program is created which meets the requirements and intent of AB32.

**KEY CONCERNS:**

- 1. Air Products Supports CARB Commitment to Applying Hydrogen Production Benchmarks Consistently, Regardless of Location or Ownership*** – Throughout the development of the California cap & trade program, Air Products has emphasized the importance of the “one product-one benchmark” design criteria applied to hydrogen production. This design principle has been repeatedly recognized by CARB and was clearly noted in the August 28<sup>th</sup> staff presentation (slide 25) when noting that the

“Allocation should be independent of ownership structure” and in the commentary on Option 2 in Table 9 of the Ecofys report,<sup>1</sup> “This violates the ‘one product-one benchmark principle.’” Air Products reinforces CARB’s commitment to this outcome in any revision to the allocation methodology for hydrogen production.

2. ***Air Products Believes the Third Option presented for Allocation Methodologies for Hydrogen Production (“Exclude hydrogen from the CWT...” is the Most Straightforward Methodology to Ensure Equitable Treatment*** – CARB has offered alternative allocation methodologies for hydrogen production in Table 9 of the Ecofys report<sup>2</sup>. Air Products believes the third option, “Exclude hydrogen from the CWT approach and use hydrogen benchmark based on actual efficiency for all production,” is the most straightforward method to ensure equitable treatment of all hydrogen production regardless of the ownership structure. CARB correctly acknowledges that the benchmark must be established specifically for “steam reformer” hydrogen production and exclude incidental hydrogen recovery from process gas streams.
3. ***Air Products Agrees that CARB Can Maintain Equitable Treatment of All Hydrogen Producers with the Other Allocation Methodologies Considered for Hydrogen Production*** – Options 1 and 2 in Table 9 of the Ecofys report<sup>3</sup> can be treated in a manner which will maintain equitable treatment of all hydrogen production regardless of the ownership structure.

In order for this to occur under Option 1, “CWT approach for *production* in refineries; hydrogen benchmarks for others determined by multiplying the CWT factor for hydrogen production by the refinery benchmark,” the performance challenge of the overall refinery benchmark must be adjusted upward to yield 90% of the EU ETS dataset average to be consistent with other California product-based benchmarks (rather than the current value based on “the average of the top 10% of facilities performance”, which yields just 80% of the sector average emissions performance). Presuming this correction, application of the same CWT factor for hydrogen production (300 CWT/tonne hydrogen) to all producers allows an equitable allocation. Air Products has previously provided comments<sup>4</sup> regarding this issue and demonstrated that the proper adjustment to the existing EU ETS-based CWT approach should yield a hydrogen benchmark of 9.99 allowances/tonne hydrogen under the California cap & trade program.

In order for Option 2, “CWT approach for *production* in refineries; hydrogen benchmarks based on actual efficiency for other production,” the CWT factor must be re-evaluated and made consistent with the dataset used to establish the hydrogen benchmark. CARB states just this needed correction in Table 9. While not explicitly stated, Air Products represents that this revised benchmark and CWT factor should be based on the actual efficiency of all hydrogen production in California, regardless of ownership structure.

---

<sup>1</sup> “Development of GHG efficiency benchmarks for the distribution of free emission allowances in the California Cap-and-Trade Program, Refineries – Preliminary Work Product”, Ecofys, August 20, 2012

<sup>2</sup> *ibid*

<sup>3</sup> *ibid*

<sup>4</sup> “Comments Regarding 2<sup>nd</sup> 15-Day Cap and Trade Rule Proposed Amendments and 2<sup>nd</sup> 15-Day Mandatory GHG Reporting Rule Proposed Amendments”, Air Products and Chemicals, September 27, 2011, Pages 4-6

- 4. Air Products Supports Revisions to the Refinery Sector Benchmark that Properly Reflect Unique California Refinery Efficiencies** – Air Products defers to the refinery sector industry experts in their position regarding the appropriateness of the EU ETS Phase III benchmark to CA facilities. To the extent the ETS CWT factors need to be revised based on actual operating efficiencies of California refineries versus those in the ETS dataset, Air Products is a firm supporter of using actual, comprehensive data as the basis for these factors. If, however, the formidable data collection and reduction required to develop such CWT factor revisions cannot be completed in time for the Second Compliance Period, Air Products supports employing the original ETS CWT factors (with stringency correction made, per issue #3, above) rather than retaining the refinery allocation method to be employed during the First Compliance Period, as discussed in more detail in issue #5, below.
- 5. Air Products Would Not Support Retention of the Differentiated Hydrogen Production Allocation Methodology Between Refineries and Merchant Hydrogen Facilities, as Exists in the First Compliance Period** – As stated in issue #3, above, the allocation methodology CARB has accepted for refineries during the First Compliance Period is advantaged over that afforded the merchant hydrogen producers. The quantity of allowances available for allocation to refineries during the first compliance period (still subject to the cap decline factor) was set at 90% of the actual historical refinery emissions... equivalent to saying “90% of the sector average.” The merchant hydrogen benchmark of 8.85 allowances/tonne of hydrogen produced was derived from the EU ETS refinery CWT benchmarking method and is based on the more stringent performance challenge of “the average of the top 10%,” which in the case of the EU ETS refinery dataset, yield a value equivalent to just less than 80% of the sector average. This difference (90% of average for refiners, 80% of average for merchant hydrogen producers) creates an unfair disadvantage and violates the one product-one benchmark principle commitment CARB has ascribed to, as noted in issue #1, above.
- 6. Air Products Requests CARB Make a Retroactive Correction to the Hydrogen Benchmark Value to be Employed During the First Compliance Period to Correct the Inequity in the Benchmark Stringency** – As discussed in issues #3 and #5, above, there is an inequity created during the First Compliance Period due to a difference between the performance challenge (or percent of sector average emissions) used to establish the benchmarks for the respective refinery and merchant hydrogen sectors. Air Products recommends CARB make a retroactive correction by increasing the merchant hydrogen sector benchmark to 9.99 allowances per tonne of hydrogen produced, the equivalent of 90% of the EU ETS dataset sector average, as described above and in previously submitted comments. We are encouraged by recent dialogue with CARB staff that recognizes that, while such a correction is not possible prior to the November 2012 allocation, a retroactive correction can be made which can restore the principle of equal treatment.

We stand ready to provide further support to CARB staff in this reconsideration of the refinery and hydrogen benchmark methodologies under the cap and trade program. If you have any questions or need additional information to support Air Products position

on these matters, please contact me by phone (610-909-7313) or email [adamskb@airproducts.com](mailto:adamskb@airproducts.com)).

Respectfully,

A handwritten signature in black ink that reads "Keith Adams, P.E." in a cursive style.

Keith Adams, P.E.  
Environmental Manager – Climate Change Programs

c: Eric Guter, Patrick Murphy, Peter Snyder, Stephen Crowley – Air Products  
Stephen Cliff, Mary Jane Coombs, Margaret Chu – California Air Resources Board  
Jim Lyons, Jeff Adkins, Alexandra Marcucci – Sierra Research