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

August 26, 2013

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

RE: Comments to the August 13, 2013 Workshop on Refinery and Related Industries Allowance Allocation under the California Cap & Trade Program

[Submitted electronically to the Air Resources Board comment submittal website:
http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=aug-13-refinery-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 the potential revisions to the allowance allocations for petroleum refineries and related industries, as discussed by Air Resources Board (ARB) staff during the August 13, 2013 workshop.

ISSUES & CONCERNS:

1. ***One Product – One Benchmark Principle*** – Air Products strongly supports ARB's articulation and adoption of the principle of defining a single benchmark value for each distinct product – regardless of the many variation (process, scale, feedstock, facility ownership, etc.). Such an approach ensures equitable treatment of all producers of the same product, providing a consistent incentive for improving production efficiency. This issue has been a particular concern for industrial gas companies which produce hydrogen and must receive an allowance allocation equal to that which would be received by a refinery producing the same quantity of hydrogen product. The ARB's commitment to adhering to this principle is evident by the approaches that have considered for the refining/hydrogen benchmarks, particularly the variations based on a complexity-weighted production metric.

2. ***Consistent Benchmark Stringency*** – Air Products strongly supports ARB's articulation and adoption of the principle of applying consistent stringency in setting the benchmarks for all sectors/products eligible for industrial assistance. This principle, restated in the workshop presentation, will essentially yield a revised benchmark value that is "90% of sector average

or best in class, whichever is greater," for the refineries and the related industries, specifically hydrogen. This principle, when combined with the "One Product – One Benchmark" principle discussed above, ensures equitable treatment of all covered sectors in the state.

Of course, for both of these principles to achieve their objective, the benchmark performance efficiency must be assessed from a population representative of the California producers. Again, Air Products is confident this is the ARB's intent, based on the complexity-weighted approaches considered and the production databases upon which they are based.

Air Products also expects the ARB to reconcile any shortfall in the allocation benchmark applied to merchant hydrogen producers for the First Compliance Period, should the further derivation of California-specific complexity-weighted benchmark factors indicate the EU-ETS-based, interim value was below the revised value.

3. ***Benchmark Treatment of Steam and Electricity*** – Air Products supports the inclusion of the emission footprints for all steam consumed, and electricity generated and consumed on-site, when assessing the benchmark performance.

   Further, the ARB should ensure that their regulations effectively require the fair and proper allocation of allowances for electricity generated on-site and sold and the requirement for compensation (or comparable carbon cost mitigation) for electricity purchased from the grid or CHP facilities. Where ARB regulations have required, and California Public Utility Commission (CPUC) proceedings are establishing, the mechanisms for the return to ratepayers of the value of the allowances allocated to Investor Owned Distribution Utilities (IOUs), the ARB must also articulate and ensure the comparable requirement for Publically Owned Distribution Utilities (POUs) to return the allowance value of their allocations to their respective ratepayers, since the CPUC proceedings do not govern the POUs actions in this regard.

   In addition, mechanisms must ensure that electricity consumers of third-party CHP (including industrial cogeneration) facilities which buy electricity directly (i.e. not through an IOU or POU distribution "grid" connection) also are treated fairly, qualifying for compensation to offset the cost of carbon that must be imposed on their cogenerated source of electricity. In instances where no allowances have been allocated based on such "non-grid" sources, the ARB must provide a direct allocation consistent with the allocations provided to IOUs and POUs.

4. ***Benchmarking Options***
   a. ***Option 1 – Adjustment of the CWT Approach*** – Air Products finds this approach acceptable, subject to the correction to the stringency applied to the EU-ETS-derived benchmark versus the benchmark stringency applied to all other California covered industries. Air Products has previously commented on this issue, highlighting that the EU-ETS benchmark employs a stringency based upon "the average of the top 10%" of a product sector, which in the case of the refining sector CWT approach resulted in a benchmark value of approximately 80% of the industry average (versus the "90% or best in class" stringency in California).

Air Products agrees that hydrogen production should be included in the CWT benchmarks and a hydrogen product benchmark derived from the (current or California "modified") specific factors and the average performance of the combined refining/hydrogen sector in the state. Air Products also agrees with the proposed corrections for imported/exported electricity and steam, consistent with the derivation of the CWT factors.

b. ***Option 2 – CWB-Based Approach with Process Grouping*** – Air Products also finds this approach acceptable, premised on a consistent application of the benchmark stringency and steam and electricity adjustments noted above for the CWT approach. Air Products agrees that hydrogen production should be included in the CWB benchmarks and a hydrogen product benchmark derived from the CWB specific factors and the average performance of the combined refining/hydrogen sector in the state.

c. ***Option 3 – CWB-Based Approach without Process Grouping*** – Air Products is indifferent regarding Option 2 or Option 3, as the concept of grouping similar processes should not impact our hydrogen benchmark. Air Products notes that Steam Methane Reforming (SMR) is the primary hydrogen production process in the United States and believes it is the only process technology used in California for on-purpose hydrogen production. Air Products is not aware of any steam-naphtha reforming or partial oxidation facilities producing hydrogen in California, so do not see the value/ability to define distinct benchmarks for these process variants for California's cap & trade program.

d. **General Refinery/Hydrogen Benchmark Approach** – Air Products recognizes that the ARB is using the workshop and solicited comments to guide their benchmarking rulemaking at the conceptual level. It should be recognized that without the necessary emission/production performance analysis, yielding industry emission averages based on the CWT/CWB production metrics, that ARB is not yet proposing a specific benchmark value as they have for all other product-based benchmarks. Air Products encourages the ARB to promptly share their data analysis so impacted entities can clearly understand the extent of industrial assistance offered by the revised benchmark approach.

5. **Liquid Hydrogen Benchmark** – Air Products strongly supports the ARB developing a discrete benchmark for the production of liquid hydrogen. Air Products has previously commented that the fundamental difference in the product form requires a production process sufficiently different from large-scale gaseous hydrogen production to warrant a separate benchmark. Further, the ARB has correctly proposed that the production metric be based on product ***sold*** rather than ***produced***, recognizing the inherent evaporative losses during production of a cryogenic liquid product would render an "as produced" metric less representative of the actual production activity.

6. **Allocation True-up** – Air Products supports the approach the ARB is employing to true-up the allowance allocations based on the actual production during the compliance year. This approach is complementary to the ARB's regulations permitting an entity's compliance obligation to be fulfilled using allowances from a future compliance year in an amount equal

to any additional allowances received through the true-up process (§95856(h)(1)(C) and §95856(h)(2)(c)).

Air Products hopes that the above comments on the potential refinery/hydrogen benchmark revisions illustrate our critical interest and support of CARB's efforts. 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).

Respectfully,

Keith Adams, P.E.

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

c: Eric Guter, Patrick Murphy, Peter Snyder, Stephen Crowley – Air Products
Stephen Cliff, Elizabeth Scheehle, Eileen Hlavka – California Air Resources Board
Jim Lyons, Jeff Adkins, Alexandra Marcucci – Sierra Research