



January 20, 2017

Rajinder Sahota
Branch Chief
California Cap-and-Trade Program
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Proposed Amendments to California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulations

Dear Ms. Sahota:

I am writing on behalf of Air Liquide Large Industries U.S. LP (“Air Liquide”) in response to CARB’s proposal, released on December 21, 2016, to amend the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms Regulation, and specifically with respect to (1) the industries that will receive a non-standard cap-adjustment factor under Section 95891, and (2) the assistance factor that will be applied to hydrogen production.

Air Liquide is the world’s leader in industrial and medical gases. Air Liquide and its affiliated companies operate twenty facilities and employ nearly 2,000 people in California. Air Liquide’s California operations include two hydrogen production facilities that supply hydrogen to refineries in El Segundo and Rodeo. Air Liquide’s affiliated companies also supply hydrogen to, and are developing, hydrogen fueling stations around the State.

Air Liquide has consistently supported California’s Cap-and-Trade Program. Air Liquide has submitted comments in the past and submits this letter now to highlight the unique position of the industrial gas sector. Specifically, Air Liquide writes to highlight the sector’s high process emissions for CARB’s consideration in determining the industries eligible for an increased cap-adjustment factor.

Through 2020, CARB has set an increased, non-standard cap-adjustment factor for certain industries with (a) more than 50% process emissions, and (b) “high” leakage risk. California Code of Regulations, Title 17, Section 95891, Table 9-2. Those industries are nitric acid production (NAICS code 325311), calcium ammonium nitrate solution production (NAICS code 325311), cement manufacturing (NAICS code 327310), and dolime manufacturing (NAICS code 327410). *Id.* The decline in the cap-adjustment factor for these industries from 2012 to 2020 is approximately half the decline for all other industries, which results in a greater allocation of free allowances to these industries. The industrial gas manufacturing sector did not

receive the same cap-adjustment factor as these industries because CARB determined that it had “medium” leakage risk.

CARB has not yet determined which industries will receive an increased, non-standard cap-adjustment factor in the post-2020 period. CARB has stated that such industries must have more than 50% process emissions, but in light of the fact that industries are no longer categorized as “high,” “medium” or “low” leakage risk, new criteria to decide which industries will qualify for the increased cap-adjustment factor will be required. Air Liquide requests that CARB adopt a more flexible standard that recognizes the importance of high process emissions (irrespective of any other factor) in limiting the future emissions reductions that are possible and increasing an industry’s need for free allowances.

Industrial gas manufacturing—hydrogen production—has very high process emissions relative to other industries. Process emissions are non-combustion emissions, which are produced from an industrial process itself, rather than as a result of energy consumed during the industrial process. Process emissions occur, for example, when chemicals or raw materials are produced as a result of a chemical reaction, such as the production of hydrogen through steam-methane reformation.

Air Liquide’s hydrogen production process involves the creation of hydrogen gas through the addition of heat and the chemical transformation of water and hydrocarbon molecules into hydrogen, carbon dioxide and carbon monoxide. To make this reaction more efficient, Air Liquide and other industrial gas manufacturers have improved, and continue to improve, the thermal efficiency of the process—the amount of heat required to catalyze the reaction.

However, the chemical reaction itself cannot be made more efficient. Each atom of carbon that is contained in the feed gas that undergoes that chemical reaction results in the emission of a molecule of carbon dioxide or carbon monoxide. Only a completely new method of producing hydrogen would reduce these process emissions.

Because Air Liquide cannot reduce its process emissions, a cap-adjustment factor that is based on the assumption that energy efficiencies will gradually reduce emissions will make compliance with the Cap-and-Trade Program’s requirements increasingly difficult and expensive. The increasing cost of compliance due to high process emissions sets Air Liquide and other industrial gas manufacturers apart from other manufacturing businesses.

Both Air Liquide’s Rodeo and El Segundo facilities have very high process emissions. On average, the process emissions from these facilities are approximately 90% of total emissions. Only about 10% of emissions result from the combustion of fuel.

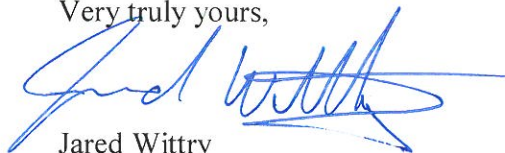
CARB’s recognition of the industrial gas manufacturing sector’s high process emissions in the cap-adjustment factors will produce a fairer Cap-and-Trade Program. Failure to recognize the sector’s high process emissions will effectively impose a tax on process emissions that

cannot be reduced using the existing technology of hydrogen production. Air Liquide therefore requests that CARB include the industrial gas manufacturing sector, and specifically On-Purpose Hydrogen Gas Production, within the industries that receive an increased, non-standard cap-adjustment factor in Section 95891, Table 9-2.

CARB's December 21, 2016 notice also provides new assistance factors to be used in calculating industry assistance allowances. The proposed assistance factors are based on two studies, one analyzing domestic leakage and the other international leakage. As NERA Economic Consulting has noted in a study submitted to CARB, both studies are subject to substantial uncertainty and do not provide an adequate basis for regulatory policymaking. Air Liquide has previously commented that industrial assistance factors should not be set as part of a 15-day notice process, and should instead be the subject of a full 45-day notice-and-comment period because of the important implications for California's economy. Air Liquide requests that CARB postpone the adoption of the proposed assistance factors and allow interested parties additional time to analyze CARB's proposals and submit comments.

Air Liquide appreciates CARB's demonstrated willingness to engage stakeholders, including Air Liquide, and to address their comments and concerns in proposed regulations. Air Liquide also appreciates the opportunity to provide comments on the draft Regulation and looks forward to further discussions with CARB on the appropriate cap-adjustment and assistance factors for the industrial gas manufacturing sector.

Very truly yours,



Jared Wittry

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