COMMENTS OF PRAXAIR INC. ON THE AB 32 SCOPING PLAN UPDATE

Praxair, Inc. is pleased to comment on the October 1, 2013 Draft AB-32 Scoping Plan Update ("Update").[1] This Update seeks to articulate the actions and objectives to enable California to meet the GHG emissions goals set forth in the AB-32 legislation, as well as emissions reductions beyond 2020. Praxair's comments focus on the Transportation Section of the Update. The 1.5 million zero emission vehicles (ZEV) by 2025 goal ("ZEV Goal") is ambitious, but achievable given the current size of the market and the advances in ZEV technology, particular hydrogen vehicles or "Fuel Cell Energy Vehicles" ("FCEVs"). To help ensure that California can meet the ZEV Goal, Praxair encourages the ARB to fully leverage existing, in-state gaseous and liquefied hydrogen infrastructure. Doing so will better propel the transportation market to adopt FCEV's. ***The ARB can create incentives for ZEVs by more explicitly recognizing the benefits of FCEVs in the Update. We also ask the ARB to take note of the need for coordination of the ZEV goals with the Cap-and-Trade Program. Under the Cap-and-Trade, the ARB still needs to fully address the hydrogen industry's need for different kinds of benchmarks and domestic leakage risk.***

There is great anticipation that automotive companies will begin selling hydrogen fuel cell vehicles (FCEVs) in 2015. When this happens, several existing and in-state hydrogen production facilities will be ready to supply product to local distribution points set up to fuel the FCEV demand. The majority of hydrogen production facilities in California utilize steam methane reforming ("SMR") technology. Although widely recognized as the most efficient process for hydrogen production, the process still has CO2 emissions and in-state hydrogen facilities are subject to Cap-and-Trade costs. These costs could significantly impact the cost of hydrogen to all users, including the budding FCEV market. There is a need to harmonize the various policy goals set forth in the AB 32 Scoping Plan Update. Praxair asks the ARB to review the linkages between its AB 32 Policies and Cap-and-Trade Regulation to determine if solutions can be identified that foster a smooth transition to a combined future state that delivers lower GHG emissions and the permanent adoption of supporting technologies such as FCEVs.

To achieve the ZEV goals and ensure a role for FCEVs, the ARB must ensure that the hydrogen production facilities that will facilitate FCEV deployment are not put at a competitive disadvantage through differing treatment of these fuel providers in the Cap-and-Trade (i.e., compared to out-of-state sources of hydrogen or in-state petroleum refineries). Praxair has provided detailed recommendations in the context of the Cap-and-Trade Rulemaking.[2]

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[1] Praxair was founded in 1907 and became an independent publicly traded company in 1992. Praxair is a supplier of atmospheric gases and coating services business, and is globally recognized for its sustainability efforts (Dow Jones Sustainability World Index in each of the last 11 years, and World CDP Leadership Index for six consecutive years). In California, Praxair has 1,000 employees at 80 locations and five production facilities: two atmospheric, two carbon dioxide and one hydrogen.

[2] Praxair's October 23, 2013 Cap-and-Trade Comments are available at: http://www.arb.ca.gov/lists/com-attach/96-capandtrade13-WmtVYFVlB2QGMgEy.pdf

Finally, if the ARB expands its discussion of the ZEV goal to analyze specific technologies, the ARB address the following benefits of FCEVs:

1. ***Fuel Cell Energy Vehicle Benefits:*** "FCEVs" or "hydrogen vehicles" have nearly zero air pollution at the tailpipe (approximately 50-100% compared to conventional fuels), and do not depend on petroleum. FCEVs can provide performance, a long driving range and fast refill time. Drivers also report that FCEVs provide similar durability and comfort to conventional vehicles. FCEVs can also help achieve the ZEV goal because the industrial gas industry has enough existing capacity to enable fuel cell electric vehicles to drive over 20 million miles per month. (Assuming 60 miles/KG H2).

2. ***FCEVs Further AB 32 and Criteria Pollutant Co-Benefits:*** In addition to helping achieve the ZEV goal, reliance on in state Hydrogen plants achieves other AB 32 objectives, such as criteria pollutant reductions. Compared to refineries, Steam Methane Reformers (SMRs - the primary hydrogen source) emit fewer criteria pollutants. This is primarily because SMRs rely on natural gas as the main fuel source for creating hydrogen. By relying on in-state hydrogen production as a major fuel source, the ARB will help transition the fuel production sector in California to reduce criteria pollutants.

Praxair appreciates the opportunity to provide these comments and looks forward to working with the ARB towards fulfilling California's ambitious ZEV goals and the successful implementation of the various measures identified in the AB 32 Scoping Plan Update.

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