



October 9, 2014

Chairman Mary D. Nichols
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: COMMENTS ON LCFS LOW CARBON FUEL AVAILABILITY WORKSHOP

Dear Chairman Nichols:

AdTra is pleased to submit comments to the California Air Resources Board for the Low Carbon Fuel Standard Fuel Availability Workshop for the ARB's LCFS Re-adoption proceedings.

We commend ARB staff for developing the fuel availability estimate for transportation natural gas. The staff estimate of 600 million to 1.2 billion diesel gallon equivalent (dge) by 2020 is consistent with demand drivers and trends we observe in the market. California can enjoy multiple benefits of particulate matter, oxides of nitrogen, carbon dioxide and fuel cost reduction in the State's transportation sector from higher use of inherently low carbon transportation natural gas. Increased use of low cost natural gas is a path to curbing high freight and goods movement costs in California with cost savings benefits to businesses and consumers.

ARB staff estimate is also directionally consistent with prior work the California Energy Commission and the Air Resources Board conducted under the AB 1007 State Alternative Fuel Plan Proceedings. The AB 1007 Natural Gas Scenario estimated fuel demand of 912 million (805 million dge) to 1500 million gasoline gallon equivalent (1.32 billion dge) by 2022 for Moderate and Aggressive cases.

The AB 1007 Natural Gas Scenario was characterized with requisite circumstances and conditions in mind, including fuel availability. It assumed the availability of three each natural gas engines and vehicle product offerings for the medium- and heavy-duty vehicle classes through the analysis period, declining incremental cost of the natural gas products compared to the diesel trucks, plus on-going adequate investment and viable business models to support expanding fueling infrastructure. Corresponding natural gas truck penetration rates accompany the scenario. It is likely that these outcomes will materialize subject to assumed circumstances and conditions. In the absence of these requisites, it is likely demand targets won't be met as the projected 2012 scenario demand indicates.

AdTra research is demonstrating pathways to expand availability of state-of-the-art (SOA), more efficient, competitively priced heavy-duty natural gas engines in North America. SOA technology natural gas engines achieve peak brake thermal efficiencies of 40 percent or greater mitigating the efficiency penalty associated with incumbent natural gas engines and associated methane and nitric oxide emissions. AdTra research further suggests next generation natural gas engines can achieve peak BTE of 45 percent or more, while delivering near-zero emission performance on a NOx and PM basis.

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We note that ARB staff analysis reports 100 million diesel gallons equivalent of transportation natural gas demand in 2013. This is less than the AB 1007 Proceedings demand estimate of 125 million gasoline gallon equivalent (110 million dge) in 2006. Unless there was a decline in transportation natural gas demand between 2006 and 2013, we recommend staff review of the 2013 demand estimate. As the 2013 demand estimate is a basis for future availability and demand projection, clarifying the 2013 data is important.

We also note stakeholders have requested details underlying low carbon fuel availability presented by ARB staff. We recommend that ARB staff consult as a resource the analyses developed in collaboration with fuel working groups of the AB 1007 Proceedings. ARB staff will find that by updating, with current market information, the earlier analysis could inform additional details LCFS stakeholders are seeking in the low carbon fuel availability analysis.

In prior capacities, members of the AdTra team were privileged to contribute in lead capacities to the CEC's and ARB's Joint Agency Report on Reducing California's Petroleum Dependence, the State Alternative Fuels Plan and customizing the U.S. Department of Energy's GREET Model for use in California's policy, program and regulatory transactions. Leveraging this privileged perspective with private sector insights, AdTra staff is available to provide further input to the ARB on these suggestions should the need arise.

Sincerely,

A handwritten signature in blue ink that reads "McKinley".

McKINLEY ADDY, P.E.
Vice President

Cc: Commissioner Janea Scott, California Energy Commission

Attachment(s): AB 1007 Natural Gas Scenario