

Bryan Sherbacow

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April 27, 2018
Delivered by Hand

Clerk of the Board
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: AltAir Paramount Comments on ARB's on the
Alternative Jet Fuel Elements of ARB's Proposed Low
Carbon Fuel Standard Regulation Amendments

Clerk of the Board:

AltAir Paramount, a division of World Energy, appreciates this opportunity to provide input to the Air Resources Board (ARB) regarding the Alternative Jet Fuel elements of the proposed Low Carbon Fuel Standard Regulation Amendments.

AltAir Paramount is the initial California supplier of renewable jet fuel, currently supplying the Los Angeles International Airport aircraft fueling system and specifically United Airlines, KLM, SkyNRG, and Quantas at that location.

We applaud CARB's efforts to add this major fuel product

to the Low Carbon Fuel Standard (LCFS) Program. Jet fuel is a substantial portion (approximately 20% - 5 billion gallons/year) of the petroleum-based fuel that is manufactured and distributed in CA. Combustion of jet fuel is a significant contributor in the production of greenhouse gases that is impacting world-wide climate change.

By adding jet fuel into the LCFS program as a voluntary component, California can enhance and encourage the development of low carbon alternative jet fuel, which is the fastest growing segment of petroleum fuel demand today. The U.S. Energy Information Administration (EIA) in their 2018 Energy Outlook estimates jet fuel demand will grow 67% from 2017 to 2050, more than any other transportation fuel.

In addition to the CO₂ reductions which will benefit the climate change goals of this program by adding this fuel as a voluntary measure for the airlines, the associated reduction in criteria co-pollutants that staff expects in Appendix F for PM (45%), SO_x (40%) and NO_x (12%) for the alternative jet fuel improvements it will achieve for the California air basin.

Impact on Renewable Diesel Production

We recognize that there is a concern that the addition of a voluntary LCFS program for Alternative Jet Fuel has the potential to cannibalize or reduce the Renewable Diesel fuel that is currently produced by the LCFS program.

However, we believe that the opposite will occur. Even with the addition of LCFS credits for jet fuel, the economic incentive to manufacture Renewable Diesel will be greater than jet fuel. However, since both are manufactured in the same process, the likelihood of increasing the overall manufacturing capability of both products is increased, which means that this Alternative Jet Fuel measure will also incentivize additional Renewable Diesel production, resulting in increased production and sales of both fuels.

Base CI of Petroleum Jet Fuel

We would also like to call attention to the surprisingly low carbon intensity CI selected for the petroleum jet fuel

base. This value must presume the simplest (and lowest energy) jet fuel manufacturing process, which is distillation of crude oil, followed by “sweetening” (sulfur mercaptan removal) in a Merox unit and finishing with clay treating <https://www.clariant.com/en/Business-Units/Functional-Minerals/Kerosene-and-Jet-Fuel-Purification> to remove contaminants that create problems meeting JFTOT, MSEP and WISM specifications of the ASTM D1655 Standard Specification for Aviation Turbine Fuels. This is the process that Paramount Petroleum (our currently closed co-sited refinery) used in their petroleum refining process for manufacturing jet fuel until a jet fuel hydrotreating process was added in 2005. It is believed that this was the last California refinery manufacturing jet fuel with a low energy (CI) process.

We believe that all jet fuel producers in California in 2010, the LCFS base year, used much more sophisticated and complex processes and refineries for converting crude oil to jet fuel (in addition to simple crude oil distillation).

These processes include vacuum distillation, vacuum gasoil hydrotreating, vacuum and coker gasoil hydrocracking, coking, and jet/distillate hydrotreating.

Many of these processes require hydrogen that must be also be manufactured or purchased with additional energy (and CI) requirements.

The previous Linear Programming (LP) models that have been developed to simulate the U.S. and California refinery operations (for EIA, Argonne National Laboratory, and others) to date have not been designed to focus on jet fuel production, but rather on motor fuels production and don't accurately model the specifics of California refinery operation. As a result, it is expected that they have not been “tuned” to properly track the jet fuel boiling range refinery stream qualities and their process unit flow volumes to the jet fuel blending pool. This additional model verification and tuning is needed to properly model and match historical production and quality and arrive at the expected higher jet fuel CI. We suggest that this model verification and “tuning” exercise should be considered in the future to provide a solid basis for the 2010 base jet fuel CI.

Respectfully yours,

A handwritten signature in blue ink, appearing to read 'B. Sherbacow', with a long, sweeping flourish extending to the right.

Bryan Sherbacow
President
AtIAir Paramount