DOCKETED	
Docket Number:	19-ALT-01
Project Title:	2020-2021 Investment Plan Update for the Clean Transportation Program
TN #:	234108
Document Title:	Joseph Degenfelder Comments - Ethanol Record in California (attachment to email), part 2 of 2
Description:	N/A
Filer:	System
Organization:	Joseph Degenfelder
Submitter Role:	Public
Submission Date:	7/31/2020 9:54:42 AM
Docketed Date:	7/30/2020

Comment Received From: Joseph Degenfelder
Submitted On: 7/31/2020
Docket Number: 19-ALT-01

Ethanol Record in California (attachment to email), part 2 of 2

Additional submitted attachment is included below.

Ethanol Record in California

In 1999 California was the first state to ban methyl tertiary-butyl ether. When MTBE was phased out of its reformulated gasoline program in 2003, the state opted to use ethanol at the minimum, 5.7 percent, that would meet the 2 percent oxygen requirement under the then0current Clean Air Act.

Rules were passed allowing E10 to be used in California as of January 1, 2010, providing an important new market for America's ethanol producers. The increase in ethanol consumption in California supports two public policies. First, the federal Renewable Fuels Standard, for one, requires greater use of fuels like ethanol through 2022. Second, California's new low carbon fuel standard (LCFS) mandates a reduction in the state's overall greenhouse gas (GHG) emissions in the next ten years. By 2020, the LCFS calls for the state's GHG emissions to be back to 1990 levels, and by 2050 achieving an 80% reduction in GHG emissions.

In June 2009, the California Air Resources Board announced changes to its reformulated gasoline regulations and predictive model to ultimately allow for the greater use of ethanol. On August 29, 3009 CARB finalized the rule to allow higher ethanol blends, stating that all fuel sold in California must be compliant with the new CARB Phase 3 standards after December 31, 2009.

The BioEnergy Action Plan, as set in Governor Schwarzenegger's Executive Order S-06-06, also calls for an increase in the production of biofuels in California. Goals are to increase in-state biofuels production to 20 percent by 2010, to 40 percent by 2020, and to 70 percent by 2050.

California set a precedent for how biofuels are treated under climate change policies, with CARB's inclusion of a theory called "indirect land use change" (ILUC). The theory states that as crops as used to produce biofuels, crop prices are driven up, and farmers respond to increasing prices by clearing land to bring it into agricultural production. Though the theory is based on computer modeling and is not corroborated by on-the-ground data, it became adopted into the biofuels portion of CARB's framework for the low carbon fuel standard.

The regulation assigns a direct emissions measurement to the corn-based ethanol, dependent upon the ethanol plant's location, its fuel use, and distillers grain byproduct. The direct emissions values range from 47.44 to 69.4 gCO2e/MJ, expressed in grams of carbon dioxide equivalent per megajoule of fuel. CARB is then assigning corn-based ethanol with indirect emissions as well, assigning a land use effect value of 30 on top of those direct emissions figures.

The total carbon intensity values of corn-based ethanol under this framework ranges from 99.4 gCO23/MJ, for a Midwest ethanol plant producing dry distillers grain, to 77.4 for a California-based ethanol plant producing wet distillers grain and is powered by 20 percent biomass. Brazilian sugarcane ethanol is assigned a value of 73.4 gCO2e/MJ.

In 2008, the state consumed 951 million gallons of ethanol at the previous 5.7 percent blend level.

Update July 12, 2017: Ethanol, particularly corn ethanol, has been key to the performance of the California Low Carbon Fuel Standard program. From 2011 to 2016 the total number of credits generated from all fuels were equal to 25.647 million, with ethanol generating 11.912 million credits or 46.4 percent of total credits and corn ethanol alone generating 9.31 million credits representing 36.3 percent of all credits. Other biofuels with substantial participation in the LCFS program from 2011 to 2016 were renewable diesel and biodiesel with a contribution of 4.913 million (19.2 percent) and 4.460 million (17.4 percent), respectively.

In 2018, 1.12 billion gasoline gallon equivalent of ethanol was consumed in California (about 12 percent blend level). The CAGR for ethanol in California since 2008 is slightly greater than 100% per year.

In 2019 E85 sales of 41 million gallons were a CAGR increase of about 30% from 3 million gallons in 2010. E85 sales will be the main growth factor, from approx. 500 retail stations at 2020 years end, expected to double by 2022.

Joseph Degenfelder July 10, 2020
Atlantic Greenfuels, LLC