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Todd R. Campbell, MEM, MPP
Vice President, Public Policy and Regulatory Affairs



October 24, 2014

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

Richard Corey
Executive Officer
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Re: Reauthorization of Low-Carbon Fuel Standard and Revisions to the CA-GREET model

Dear Chairman Nichols and Executive Officer Corey:

Clean Energy would like to thank you and the Air Resources Board (ARB) staff for allowing us to provide comments on the re-adoption of the Low Carbon Fuel Standard (LCFS) and the proposed revisions to the CA-GREET Model identified as CA-GREET 2.0.

About Clean Energy

Clean Energy is North America's leading fuel provider of both conventional and renewable natural gas for transportation with over 550 stations operating in 43 states across the country. The company has been a longtime supporter of California's climate change goals under AB 32 and ARB's implementation of the nation's first Low Carbon Fuel Standard (LCFS).

Strong Support for the Re-Adoption of the Low Carbon Fuel Standard

As detailed below and presented in the joint letter from the California Natural Gas Vehicle Coalition, NGV America, and the Renewable Natural Gas Coalition submitted today, Clean Energy and the NGV Industry strongly supports CARB's re-adoption of the LCFS regulation. Early on, Clean Energy stepped up and supported the rule, became a voluntary regulated party under the LCFS, invested hundreds of millions of dollars in refueling infrastructure and renewable fuel production, and sought out ways to improve operational

North America's leader in clean transportation

efficiencies to lower the carbon intensity associated with our transportation fuels. Today, we remain a proud leader in California's low carbon fuel market, employ over 1,000 employees, and are continuing to make the necessary strategic investments to maintain our position in the market for decades to come. We are very pleased to see ARB's release earlier today of a very strong carbon reduction compliance curve as it maintains the 10% carbon reduction goal in 2020. It is this kind of messaging that helps support companies like Clean Energy to make the necessary investments that support the program.

Strong Call for Delay in CA-GREET 2.0 Revisions to Provide Proper Evaluation of CI Values

Clean Energy also strongly supports ARB's efforts to revise and update the CA-GREET model when new information and data becomes available and there is a thorough public process provided to properly evaluate revisions to the model. We do have credible technical reasons to be concerned about the proposed modifications to the CA-GREET model that underpins full-fuel-cycle pathways under the LCFS. The following concerns highlighted below are more fully developed in the ICF Technical Report of the CA-GREET Model 2.0 submitted today by the California Natural Gas Vehicle Coalition, NGV America, and the Renewable Natural Gas Coalition:

- Incorrect and old vehicle data used with incorrect use of emissions errors to predict CH₄ and N₂O tailpipe emissions for CNG and LNG;
- Incorrect application of on-site leakage rate for gas capture and processing for landfills;
- Duplicate storage emissions and gasification occurs in an atmospheric temperature vaporizer for LCNG systems;
- Incorrect assumptions regarding LNG-to-CNG compression;
- Failure to normalize compression efficiency for natural gas, regardless of feedstock;
- Use of fugitive methane emissions do not represent California pipelines;
- Failure by ARB to update all pathways with a new natural gas CI value

All of these items of concern were **identified within the nine business days** that ARB provided for public comment. If the NGV Industry was afforded more time to review

ARB's revisions, we truly believe that we would be able to assist ARB staff in capturing a more precise characterization of the carbon intensity associated with natural gas as a transportation fuel. As it stands now, we do not have the time to properly identify problem areas with ARB staff as not all aspects of ARB's model changes are transparent. Regardless, we believe that the errors identified will lead to a significant lowering of the CI value attributed to natural gas by ARB staff.

Finally, ARB staff indicated last week that it failed to re-evaluate the impacts of a raised CI value for natural gas for other fuel pathways, particularly for fuels that are significantly dependent upon natural gas during their fuel production process. Part of the elegance of the Low Carbon Fuel Standard is that it is a "fuel neutral" regulation that provides an incentive for all transportation fuels to make low carbon advancements. However, if ARB staff fails to apply revisions to all fuel pathways at the same time, suddenly there is an uneven playing field created within the regulation and this should be avoided at all costs.

In conclusion, we strongly urge ARB to re-adopt the Low Carbon Fuel Standard but we ask that ARB delay adoption of the proposed revisions to CA-GREET until our concerns have been thoroughly addressed, and important new data from various ongoing studies can be incorporated. Perhaps the best possible way to handle this situation is to bifurcate the GREET Revision process and remove natural gas from the February Board Agenda so that ARB and the public can allocate the appropriate amount of time to evaluate the carbon intensity of natural gas and apply the resulting number to all fuel pathways simultaneously.

Thank you for your time and consideration of our comments. We look forward to your response.

Sincerely,

A handwritten signature in black ink, appearing to read 'Todd R. Campbell', with a stylized, cursive script.

Todd R. Campbell
Vice President, Public Policy & Regulatory Affairs