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January 20, 2021

California Energy Commission 1516 Ninth Street Sacramento, CA 95814

RE: Docket No. 20-IEPR-01

Cummins offers the following comments on the Draft 2020 Integrated Energy Policy Report (IEPR) Update, Volume I relative to the Renewable Gas and Low NOx Engines section of the report.

From page 133 of the report:

"Cummins, Inc. has begun manufacturing 30,000 advanced pipeline gas engines annually (6.7-, 8.9-, and 12-liter sizes) that have been certified by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) as achieving an 80 percent reduction in tailpipe emissions compared to the existing 2010 diesel engine ambient air quality standard. The Cummins engines are the only combustion engines that can meet the U.S. EPA anticipated 2023 standard for low nitrogen oxide (NOx) tailpipe emission levels. Several truck chassis and cab manufacturers have embedded these engines in new product sales. The cumulative growth of pipeline gas trucks in California exceeds 20,000 (roughly 4 percent of the truck sector), and new vehicles entering the market have averaged 1,000 vehicles per year for the last three years."

Provided comments:

- 1. The Cummins engine shouldn't be characterized as a "pipeline gas" engine, which is generally assumed to be fossil derived natural gas. The engine is really a methane (commonly referred to as natural gas) engine, regardless of whether the methane comes from fossil or renewable sources or if the methane is stored as compressed or liquified. Our current understanding is that greater than 80% of the natural gas used for transportation in California comes from renewable sources.
- 2. Cummins manufacturers engines based on orders from original equipment (truck) manufacturers with the capability to produces tens of thousands or more natural gas engines annually with reasonable lead time to "spin up" the component supply chain.
- 3. The Cummins natural gas engines are certified to a NOx standard of 0.02 g/bhp-hr, which is 90% lower than the 2010 standard. When utilized with certain sources of renewable natural gas, the engine can also provide sub-zero carbon (greenhouse gas) benefits.
- 4. The Cummins natural gas engines are certified to a NOx standard of 0.02 g/bhp-hr, meeting the adopted CARB (anticipated to be adopted by the U.S. EPA) model year 2027 NOx standard.

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5. Since 2016, Cummins has produced 7,000 to 8,000 natural gas engines annually for the North American market. It's likely the California deliveries are higher than 1,000 (derived from the California Department of Motor Vehicles database) annually due to fleets that operate in California but registered out of California.

Cummins is proud to offer California with a portfolio of technologies and strategies to reduce emissions, while meeting the duty cycle requirements of fleets. I'm available for any follow up discussion or questions directly at 916-709-9562 or tom.swenson@cummins.com.

Best regards,

For Summon

Tom Swenson Business Development Manager