

DOCKETED

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Transportation and Natural Gas Sections of Draft 2015 IEPR

Additional submitted attachment is included below.

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Ryan Kenny
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The Honorable Robert B. Weisenmiller, Ph.D.
Chair, California Energy Commission
Dockets Office, MS-4
Re: Docket No. 15-IEPR-01
1516 Ninth Street
Sacramento, CA 95814-5512

November 2, 2016

Dear Chair Weisenmiller:

RE: Transportation and Natural Gas Sections of Draft 2015 IEPR

Clean Energy would like to submit the following comments concerning the *2015 Draft Integrated Energy Policy Report*, specifically relating to the sections on transportation and natural gas.

As North America's largest provider of natural gas transportation fuel with over eighteen years of leading industry experience, we provide construction, operation and maintenance services for refueling stations. We have a deep understanding of the growing marketplace, and our portfolio includes over 550 stations in 43 states, including a significant presence of 154 stations in California, of which 65 are public. All 65 public stations provide renewable natural gas (RNG) as compressed natural gas (CNG) or liquefied natural gas (LNG) vehicle fuel.

Already used as a clean, low carbon source of energy around the world, natural gas is abundant and proven to be a cost-saving alternative fuel. Natural gas for transportation fuel strengthens our economy with lower fuel costs, increases our energy security, and significantly benefits our environment by reducing carbon emissions and smog-forming NOx emissions by up to 23% and 35%, respectively, relative to diesel fuel. Carbon emissions are reduced even further – by 90% - when renewable natural gas is used instead of diesel.

GAME CHANGER: CWI .01 NOx Heavy Duty Engine

The *Draft 2015 IEPR* states, "Long-term transformation of the transportation system is achievable but will require efforts on many fronts with a diverse range of actors and partnerships." It also provides a reminder of the governor's executive orders which includes the "development of an integrated action plan that establishes targets to improve freight efficiency, increases adoption of zero-emission technologies, and increases competitiveness of California's freight system." These strategies are all designed to improve the environment and human health.

California will not reach ozone, particulate matter, carbon and petroleum reduction goals without dedicating significant resources to the heavy-duty transportation sector to decrease dependence on diesel fuel and increase the use of much cleaner alternative fuels. In fact, the ARB's *Mobile Source Strategies Discussion Draft* specifically states on page 59 that, "Based on ARB staff's technology assessment, the most viable approach to meeting the 2031 and 2030 goals is low-NOx trucks" paired with a 55 percent renewable fuel penetration of the truck fuel demand. To this end, a few weeks ago ARB certified Cummins Westport's near-zero emission 8.9L heavy duty engine to 0.02 g/bhp-hr NOx, which is a **game changer** for the transportation sector and public health. The 8.9L engine is scheduled for deployment as early as March 2016 and the 12L is estimated to enter the market in the second or third quarter of 2017. These engines will provide immediate environmental, public health, energy security, and carbon benefits, whereas waiting for heavy duty hydrogen fuel cells and battery electric technology could take as long as 2050 according to a recent ARB technology assessment looking at fuel cell and electric commercial readiness for class 7 and 8 trucks.

This engine, powered by natural gas or renewable natural gas, or a blend of the two, will achieve greater environmental benefits than any electrified system for 1/5th to 1/10th the cost and far fewer operational and logistical

challenges, as natural gas technology can be seamlessly integrated into large natural gas fleet operations for transit, refuse, goods movement, airport service, etc.

Aggressive emissions goals cannot be realistically met without accelerating the adoption of natural gas fuel in the heavy-duty vehicle sector. Failure to do so will compromise the successful implementation of the following objectives:

- Meet the LCFS goal of 10% carbon intensity reduction goals by 2020 and 40% by 2030;
- Mandated federal regional 8-hour ozone attainment goals for NOx by 2023 and 2031;
- 50% petroleum reduction by 2030;
- Significant reductions in Short-lived Climate Pollutant of black carbon and methane.

According to the South Coast Air Quality Management District, advanced natural gas engines already achieve emission equivalent or “power plant” equivalent performance for NOx emissions at 0.02 g/bhp-hr NOx. Advanced natural gas engines also have closed crankcase systems lowering methane emissions by more than 70 percent. Pairing these engines with renewable natural gas blends can further drive down carbon emissions in both the medium- and heavy-duty truck and bus sectors, where other advanced technologies have yet to fully mature. Further, these advanced technology strategies are very cost effective and deliver immediate relief to regions like the South Coast and San Joaquin Valley Air Basins that are struggling to reduce ozone, particulate matter and carbon emissions from the transportation sector. It should be noted that, based on the South Coast AQMD’s MATES-III analysis, the communities that are disproportionately impacted by the state’s goods movement sector live up, down and alongside our state’s port and airport facilities and heavily traveled freeways by heavy-duty trucks. In fact, the San Pedro Bay Ports still expose workers and nearby residential neighborhoods to cancer risk levels that exceed the United States Environmental Protection Agency’s acceptable risk factors for cancer by over 1,600 times!

Clean Energy alone has delivered over 20 million gallons of renewable natural gas into the state in FY 2014 and we are on track to double this figure by year’s end. The use of more renewable natural gas, particularly in existing transit fleets that have the infrastructure already in place, are in the position to significantly reduce the state’s carbon footprint overnight

NATURAL GAS METHANE LEAKAGE

As expressly stated on page 167 of the draft document, natural gas as a transportation fuel is a low-carbon fuel source when compared to other fossil fuels. However, the Draft also claims “recent studies indicate that in certain circumstances methane leakage can reduce the climate benefits of switching the natural gas.”

The natural gas transportation fuel industry acknowledges there is some upstream leakage, but it is very minimal (about 1% or less). The scientific literature has not demonstrated how much leakage occurs nor can any claim be made that this fuel does not provide sufficient and significant environmental, health and societal benefits. Simply put, the scientific literature has not demonstrated a causal link between methane leakage and reduced climate benefits relative to petroleum fuels, and does not take into account that California’s market is almost 50 percent renewable natural gas at publicly accessible stations.

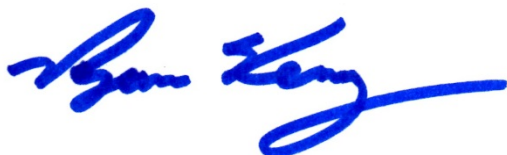
ARB has issued a “yellow cell” within the CA-GREET 2.0 model, offering to revisit the placeholder of the arbitrary and scientifically invalid 1% methane leakage figure before the planned 3-year review mark for all calculations. We believe the methane leakage figure is closer to 0% than 1%. We are recommending to ARB they revise methane leakage values based on utility studies that are scientifically valid which might show better results.

The Draft also, to the credit of the authors, acknowledges that “Estimating methane emissions from the natural gas system has proven challenging, with divergence in estimates of methane emissions from recent research studies.” Some stakeholders, for example, have incorrectly used a recent UC Davis study that attempted to show that natural gas is not environmentally better than diesel, which would have massive implications as California looks to reduce the environmental problems associated with the heavy-duty transportation sector. CARB rejected the study, stating, “Staff disagrees with this analysis and finds that under most scenarios, when a methane GWP of 25 is used, both CNG and LNG have a life cycle GHG benefit over diesel. CARB staff believes the UC Davis report reached incorrect conclusions due to using flawed assumptions, including inappropriately using default transport parameters in GREET 2014 (which

tend to reduce assumed LNG transport emissions), incorrect assumptions regarding the efficiency of LNG-fueled heavy-duty pilot ignition engines, and not quantifying losses from the LNG vehicle tanks, among others.”¹

Thank you for considering our views as we work collaboratively to improve California’s environment and health through cleaner fuels and vehicles. We look forward to continue being part of the process.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ryan Kenny". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Ryan Kenny
Senior Public Policy & Regulatory Affairs Advisor
Clean Energy

Cc: Members, California Energy Commission

¹ Written comments from the California Air Resources Board, “Notice of Proposed Rulemaking for the US EPA and NHTSA Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Phase 2,” Page 157, http://www.arb.ca.gov/msprog/onroad/caphase2ghg/comments/carb_phase_2_comments.pdf