



November 13, 2015

The Honorable Edmund G. Brown, Governor  
California State Capitol  
Sacramento, CA 95814

**Re: Draft Investment Plan for Cap-and-Trade Auction Proceeds for Fiscal Years 2016-17 through 2018-19**

Dear Governor Brown:

Clean Energy would like to offer comments concerning the *Draft Second Investment Plan: Fiscal Years 2016-17 and 2018-2019*. We believe the natural gas transportation fuel and natural gas vehicle industries have a major role to play in support of California's environmental, public health, carbon, and petroleum reduction goals.

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 – between 80 to 90% - when renewable natural gas is used instead of diesel.

Our industries should play a significant role in ARB's planning and regulatory efforts especially relating to integrated freight planning, the State Implementation Plan (SIP) development, funding plans, the governor's goal to reduce petroleum by 50%, the Short-lived Climate Pollutant plan, and the emphasis on benefits for disadvantaged communities.

**Low Carbon Transportation Fund – WHERE'S THE FUNDING?**

California will not reach greenhouse gas emission (GHG) reductions and other environmental and public health goals without dedicating significant resources to the heavy-duty transportation sector to decrease dependence on diesel fuel and increase the use of much cleaner lower carbon fuel alternatives. The Low Carbon Transportation Fund does not have any funding allocated for the 2015-2016 year for the deployment of heavy-duty alternative fuel vehicles in the class 7 and 8 category. None that includes the natural gas vehicle industry which can provide an immediate solution while ARB has declared heavy-duty battery electric and fuel cells might not be ready for 15-35 years.

**GAME CHANGER: CWI .01 NOx Heavy Duty Engine**

What role can heavy-duty natural gas vehicles play in meeting California's air quality goals? To this end, the Cummins Westport's 0.02 g/bhp-hr NOx heavy duty engine, with a closed crankcase system, is a **game changer** for the transportation sector, public health, climate change, and energy security. The 9L engine is scheduled for deployment as early as 2016 and the 12L in 2017. These engines will provide immediate environmental and health benefits.

This engine, powered by natural gas or renewable natural gas, or a blend of the two, will achieve equal or greater environmental benefits than a zero emission vehicle system for 1/5<sup>th</sup> to 1/10<sup>th</sup> the cost and far fewer operational and logistical challenges, as natural gas technology is proven in the field and can be seamlessly integrated into large fleet operations.

ARB has aggressive emissions goals that cannot be realistically met without accelerating the adoption of near-zero strategies like 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% greenhouse gas emissions (GHG) by 2020 and 30% by 2030;
- Mandated federal 8-hour ozone attainment goals for NOx reduction in 2023 and 2031;
- 40% GHG reduction by 2030;
- 50% petroleum reduction by 2030;
- 80% GHG reduction by 2050;
- Significant reductions in short-lived climate pollutants.

### **NATURAL GAS VS. CLEAN DIESEL TRUCKS**

How do NOx emission levels from the latest technology heavy-duty natural gas trucks compare to NOx levels from heavy-duty diesel trucks? Natural gas vehicles – a proven alternative to diesel – are in wide use throughout the heavy- and medium-duty sector today, and a fleet owner could immediately deploy a certified low-NOx engine meeting the 90% NOx reduction target (0.02 g NOx) set by ARB for numerous heavy- and medium-duty applications. This is not the case, however, for diesel engines as there is not an approved low-NOx certification on the market. In fact, the ARB *Mobile Source Strategy Draft Discussion* document clearly states on page 22 that certification targets for low-NOx diesel engines are at “either 0.05 or 0.1 g/bhp-hr” and are not anticipated to materialize for another 1 to 2 years. That said, a 0.05 g NOx engine presents only a 75% reduction and a 0.1 g NOx engine presents only a 50% reduction. It is interesting to note however that in several sections of the *Mobile Source Strategy Discussion Draft* that low-NOx engines meeting the 0.02 g/bhp-hr standard are considered necessary and the most technically feasible way to meet the state’s 2030 and 2031 goals that include ozone, PM, carbon, and petroleum reduction goals.

According to the *Mobile Source Strategy Draft Discussion* document, the Mobile Source Strategy October 16<sup>th</sup> workshop and a recent SWRI presentation in Illinois on October 27<sup>th</sup>, there are no diesel engines in development today that are capable of certifying to the 90% low-NOx target at 0.02 g NOx.

### **CAN BIOFUELS BE A PRIMARY SOLUTION FOR OUR 2050 GHG TARGETS?**

As previously mentioned, Clean Energy alone has 154 stations in California, 65 of which are open to the public. There is demand for the fuel products and we and our competitors are meeting it. According to the Low Carbon Fuel Standard data, RNG was 48.7% of all vehicle fuel going into natural gas vehicles under the LCFS as of the 3rd quarter of 2015. This percentage will go higher as production continues to expand and in-state production barriers (i.e., interconnect costs and overly stringent fuel quality requirements) are resolved. Using conservative ARB scenarios, this amount achieves now the 2030 goals under AB 32 for all NGVs if you assume a blend.

Clean Energy alone has delivered over 20 million gallons of RNG into the state in FY 2014 and we are very likely to double this figure by year’s end. The use of more RNG, 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. Applying a low-NOx engine will not only reduce NOx emissions to near zero levels, it will also further reduce methane emissions as these new engines provide a closed crank case system that reduces methane emissions by more than 70 percent. **Bottom-line: the natural gas industry has listened carefully to ARB’s concerns and objectives and we are aggressively attempting to provide the agency with solutions through our technologies and our innovative fuels.**

It is worth noting that battery and fuel cell vehicles are often referred to as zero emission vehicles but their capability of being truly zero in emissions largely depends upon whether or not the vehicle's power source is emissions free. Even with a 50 percent renewable portfolio by 2030, the state is still likely to draw at least half of its power from sources of energy that emit some form of carbon and criteria emissions. Meanwhile, low-NOx strategies combined with renewable fuels, as the *Mobile Source Strategy Discussion Draft* points out, can demonstrate far meaningful and much needed emissions benefits for NOx, PM and GHG emissions today for class 7 and 8 trucks where electrification cannot provide an answer.

## **IN-STATE BIOMETHANE PRODUCTION**

In addition to the vehicles, California has an excellent opportunity to incentivize production of the cleanest fuel for heavy-duty transportation: renewable natural gas (RNG), also called biomethane. We believe the California Energy Commission should administer a grant program using appropriated cap and trade funds to build or develop new biomethane collection and purification technology and infrastructure, and administer funding to upgrade biomethane production projects to meet certain requirements for interconnection with the California natural gas grid.

## **THE PROBLEM**

Ninety-nine percent of biomethane is produced outside of California – save for one facility in Altamont, CA – because:

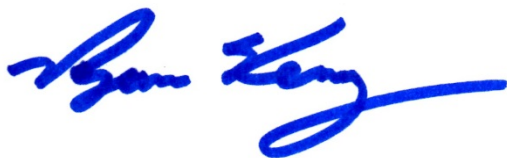
1. A California Public Utilities Commission (CPUC) tariff mandates the most stringent gas quality cleanup standards in the country and presents cost-prohibitive technical challenges;
2. A CPUC tariff for mandated gas quality testing is cost-prohibitive and requires highly sophisticated testing. This has inherent risk of false positives and inaccuracies that will jeopardize the productivity of any biomethane plant injecting RNG into the California gas grid;
3. Pipeline interconnection costs are cost-prohibitive to the biomethane producer and are required to be paid entirely by the biomethane producer despite the fact that RNG injected into the gas grid provides a significant benefit to natural gas ratepayers via improved environmental benefits and gas supply diversity.

In 2012, California passed legislation (AB 1900, Gatto) explicitly intended to “facilitate” and “promote” the in-state production and distribution of biomethane. **Unfortunately, the regulations adopted by the CPUC pursuant to that legislation contain the very gas quality testing and tariff requirements that have made it highly difficult if not impossible to develop in-state biomethane production facilities that connect to the California natural gas grid.** To-date, the CPUC has not taken any action to try and mitigate any of the costs imposed on developers by these testing and tariff requirements and thereby stimulate project development. As a result, despite AB 1900 being passed into law, not one pipeline biomethane project has been developed in California since its passage. **Cap and trade moneys could help pay the costs of biomethane cleanup and pipeline interconnection.**

Enabling pipeline injection of biomethane will help California meet its greenhouse gas reduction, landfill diversion, fuel diversity and clean energy goals, in addition to providing jobs and air quality benefits across the state.

We would like to thank the Air Resources Board staff for providing the opportunity to share our views and for considering our comments. We look forward to continuing our participation and partnership with you in this healthy discussion and process.

Sincerely,



Ryan Kenny  
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Clean Energy