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December 15, 2010

California Environmental Protection Agency
Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Comments on Proposed Revisions to On-road Truck and Bus Regulation

Dear Sir/Madam,

Clean Air Power thanks the California Air Resources Board for the opportunity to give feedback on the proposed amendments to the on-road regulation before the Board Hearing as scheduled December 16, 2010. Clean Air Power continues to support CARB in its efforts to reduce petroleum use, criteria air and greenhouse gas emissions, while also balancing economic concerns and providing regulated parties as much flexibility as possible in meeting environmental goals. Clean Air Power has been working to reduce air pollution and emissions from the trucking industry for over 20 years. These efforts have encompassed a variety of offerings in natural gas vehicles, as well as after-treatment emission control technologies. It is anticipated that some of the proposed amendments by CARB to the on-road regulation will put a select Clean Air Power technology at a competitive disadvantage-- technology that would be successful in providing the equivalent if not greater environmental benefit as those proposed.

CARB states that amendments to the on-road regulations were proposed in order to provide heavy-duty trucking fleets with additional flexibility, considering the economy as well as recent analysis showing emissions levels below what was estimated when regulations were initially adopted.

The amendments propose that the purchase of alternative fuel or hybrid vehicles would allow the fleet to treat another vehicle as compliant until January 1, 2017, and would thus provide a potential significant market incentive for alternative fuel and hybrid technologies. However, dual-fuel engines are specifically excluded as a compliance path for credits. The exclusion of dual-fuel engines within the amendment decreases the options, flexibility and efficiency that truck fleets will have in achieving emissions reductions.

The amendment in the regulation defines dual-fuel engines as "any compression ignition engine that is engineered and designed to operate on a combination of alternative fuels, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG) and diesel fuel or an alternative diesel fuel. These engines have two separate fuel systems, which inject both fuels simultaneously into the engine combustion chamber." This definition and the exclusion of dual-fuel engines from credit eligibility are remnants from prior regulations that forced fleets to choose either a diesel path or an alternative fuel path. The current proposals are fuel neutral but not technology neutral; considering that the overarching goal is to reduce petroleum consumption and resulting criteria air pollutants and greenhouse gases in California, CARB should further amend the proposed revisions in order to include other technologies that meet equivalent reduction goals.

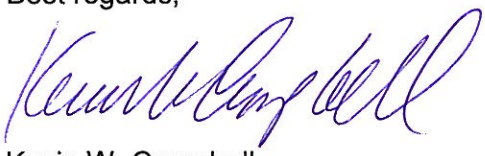
Clean Air Power in conjunction with Navistar has developed a dual-fuel technology that not only meets but exceeds the 0.2 g/bhp-hr emission standard. A small amount of diesel—10%-25% of what is typically used in conventional trucks—will act as the "pilot" or ignition source for the natural gas and air. The resulting combination is a hybrid between conventional diesel combustion—where the diesel pilot auto-ignites as it would in a standard diesel-cycle—and a regular otto-cycle engine with a sparkplug for incoming natural gas and air. Thus, with the compression-ignition engine the dual-fuel MaxxForce 13 will offer the efficiency, power and performance levels more commonly associated with diesel-fuel engines. Furthermore, the MaxxForce 13 engine will have the flexibility of being powered by CNG or LNG, thus making it viable in a diversity of markets and a wider range of applications. The concept readiness phase has been completed and internal testing has proven the ability to certify the criteria emissions as targeted while displacing between 75%-90% of diesel normally used.

Overall, the dual-fuel engine is expected to displace *four times* the amount of diesel displaced by a hybrid meeting the 20% reduction required in the proposed changes to the regulation. The benefit of the dual-fuel engine is likely to be even greater due to the heavier duty cycle. The dual-fuel engine would also reduce well-to-wheel greenhouses gas emissions by nearly 20% in comparison with diesel counterparts, and create opportunities for near-zero well-to-wheels GHG emissions as bio-methane fuel production technologies mature and become increasingly used.

There are no additional emission benefits for either dedicated or high-pressure direct injection (HPDI) natural gas engines. However, the current proposed regulation could act as a significant driver for these technologies, without the consideration of dual-fuel engines that would provide the same if not greater petroleum and emissions reduction benefits.

In conclusion, Clean Air Power requests revisions to the rule changes in order to remove the exclusion of dual-fuel technologies from the type of vehicles eligible for credits under the on-road regulation. Thank you for the opportunity to submit these comments for your consideration, and please feel free to contact me if you have any further questions or need any additional information.

Best regards,



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