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December 8, 2017

Mr. Brett Rude
Department of Ecology
Air Quality Program
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Rude:

CNG Cylinders International (CNGci) is pleased to submit these comments to the State of Washington on using Washington's Mitigation Trust funds under the Volkswagen 2.0L Vehicle Partial Consent Decree, Appendix D. These comments should inform the decision-making process as Washington is developing the state's Environmental Mitigation Plan as required by the Environmental Mitigation Trust (EMT).

CNGci provides complete compressed natural gas (CNG) fuel system solutions for back-of-cab and frame rail applications for heavy duty and vocational vehicles. Vehicle applications include vocational trucks (heavy haulers, cement mixers, dump trucks, snow plows, off-road and mining), drayage trucks at shipping ports, roll-off / refuse trucks, quarry trucks, and over-the-road trucks. CNGci designs and manufactures large Type 3, carbon fiber-on-aluminum cylinders, for superior heat dissipation when fueling which allows for significantly more gas and thus more usable diesel gallon equivalent (DGE) in the cylinder under fast-fill conditions, which is an industry game-changer. CNGci offers a modular fuel system design with over 6,000 units / systems operating on medium- and heavy-duty vehicles.

Funding from the VW EMT provides an extraordinary and unprecedented opportunity for the State of Washington to put significantly cleaner, lower-polluting vehicles on the road in public and private fleets. This funding can and should be used by the State of Washington to continue its commitment to accelerating the use of cleaner, alternative fuels as a cost-effective alternative to funding diesel vehicles. Superior nitrogen oxide (NOx) emission reduction of natural gas compared to diesel engines supports the tenets of the partial consent decree to mitigate local NOx emissions.

The latest natural gas engines offer a 90% reduction in nitrogen oxide (NOx) emissions over the strictest EPA emission standards, providing a clean commercially available technology to reduce pollution from diesel engines. These modern natural gas engines are certified to perform at 0.02 g/bhp-hr of NOx as

compared with the diesel engines certified to the 2010 EPA standard of 0.2 g/bhp-hr NOx. It is the lowest level currently recognized under California's optional Low-NOx Standard for engines. With the EMT created to mitigate excess NOx emissions, we urge prioritizing EMT funds towards impactful, cost-effective technologies such as CNG medium- and heavy-duty vehicles.

Today's natural gas vehicles are proven technologies that can uniquely, immediately, and cost-effectively transform our nation's medium- and heavy-duty transportation sector. The advantages of natural gas as a transportation fuel include its domestic availability, widespread distribution infrastructure, low cost, and inherently clean-burning qualities.

In-use emission benefits of natural gas engines could be even more significant. A recent report published in *Environmental Science and Technology*¹, evaluated in-use emissions of earlier model year natural gas vehicles and found that natural gas engines performed much better in real world conditions (i.e., operating within city limits in low-speed, high-idling situations), registering NOx levels 96% lower than levels produced by tested diesel engines equipped with the latest emissions controls. The study found that diesel NOx emissions operating in similar conditions produced emissions that were 5 -7 times higher than diesel in-use certification limits in some cases.

Recommendations

- Provide a larger incentive and greater overall funding for medium- and heavy-duty engines that deliver greater NOx reductions than currently required for new vehicles and engines.
- Provide the highest level of funding to applications that produce the largest share of NOx emissions (in most regions this means prioritizing for short-haul, regional-haul, heavy-duty vocational vehicles and refuse trucks).
- Prioritize funding for clean vehicles rather than fueling infrastructure.
- Scale funding to incentivize the cleanest engines available.
- Ensure that funding incentivizes adoption by both public and private fleets.
- Accelerate the funding in the early years to maximize the NOx reduction benefits
- Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, the funding should be set aside for clean, alternative fuel vehicle projects that focus on maximizing NOx reduction for the funds spent.

¹ Environ. Sci. Technol., 2015, 49 (8), pp 5236–5244 (Emission Rates of Regulated Pollutants from Current Technology Heavy-Duty Diesel and Natural Gas Goods Movement Vehicles).

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CNG powered vehicles are the clear champions effective in maximizing pollution cost reduction effectiveness since dollar-for-dollar, NGVs deliver the most cost-effective NOx emissions reductions.

NGVs are commercially available from traditional truck OEMs with established sales and service networks. Retrofit and repower options are also available from a variety of manufacturers. Funding natural gas vehicles is the logical choice and will lead to the largest total reduction in NOx emissions.

Thank you for the opportunity to provide comments on the Washington State Department of Ecology, Environmental Mitigation Plan for the VW 2.0L Vehicle Partial Consent Decree programs.

We look forward to continuing to work together to help carry out the goals and initiatives of the Environmental Mitigation Trust. Please contact me directly at (805) 278-8060 or rwollgiehn@cng.us.com.

Sincerely,



Randolf H. Wollgiehn
Marketing Manager
CNG cylinders international

