

NGVAMERICA

Natural Gas Vehicles for America

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April 23, 2018

Mr. Ali Mirzakhali, P.E.
Director, Division of Air Quality
100 W. Water Street, Suite 6A
Dover, DE 19904

RE: NGVAmerica Comments on the Delaware Volkswagen Environmental Mitigation Plan

Dear Director Mirzakhali:

Natural Gas Vehicles for America (NGVAmerica), the national trade association for the natural gas vehicle industry, respectfully submits the following comments on how the State of Delaware can best use the Environmental Mitigation Trust (EMT or Trust) funds (\$9.67 million) that the state will receive as part of the Volkswagen (VW) diesel emission settlement.

The revised Delaware Department of Natural Resources and Environmental Control (DNREC) Proposed Volkswagen Environmental Mitigation Plan (Plan) reflects the intent of the Trust by stating that its primary goal is to improve and protect ambient air quality to achieve significant and sustained reductions in areas with poor air quality, historical air quality issues, and with the highest diesel emission exposure. However, Delaware's March 2018 Plan eliminates the statement that it will utilize eligible mitigation projects that "expedite the deployment and widespread adoption of zero and near-zero emission vehicles and engines." It is concerning that the state has removed this emphasis on near-zero vehicles and engines, since they offer significant benefits to cost-effective NOx reduction.

As shown in our VW Comment Letter submitted on April 3, 2017 (attached), NGVAmerica believes that natural gas vehicles (both LNG and CNG) offer the best solutions for the projects that will address the goals of the EMT, to reduce the most nitrogen oxide (NOx) for the least cost. Please see the diesel, electric vehicle and natural gas vehicle comparisons on the attached NGVA VW Flyer for heavy duty trucks, transit buses, refuse trucks and school buses.

The latest natural gas engines are the only zero emission equivalent or near zero engines that are certified to perform at 0.02 g/bhp-hr of nitrogen oxide (NOx) emissions or better and should not be confused with diesel engines certified to the 2010 EPA standard of 0.2 g/bhp-hr NOx standard.¹ The 0.02 g/bhp-hr NOx standard requires that new engines outperform the federal standard by 90 percent and is the cleanest heavy-duty engine standard today. It also is the lowest level currently recognized under California's Optional Low-NOx Standard (OLNS) for engine.

If renewable natural gas (RNG) is used, life cycle greenhouse gas emissions from NGVs are reduced further. Using RNG also creates a market for energy created from waste water treatment, landfills, animal waste and other methane sources and significantly increases air quality by reducing the amount of methane released.

¹ See SCAQMD press release from June 3, 2016 providing details on the petition filed by state authorities urging the U.S. EPA to adopt the 0.02 NOx standard (<http://www.aqmd.gov/home/library/public-information/2016-news-archives/nox-petition-to-epa>) (Today's action follows a March 4 vote by the SCAQMD's Governing Board to formally petition the U.S. EPA to adopt a so-called "near-zero" or "ultra-low" emissions standard for heavy-duty truck engines that is 90 percent cleaner than the current standard).

The DNREC has chosen to focus its initial Phase on replacing diesel school buses with propane school buses and wait until Phase 2 to accept project proposals for projects that will reduce significant amounts of NOx. Since replacing school buses reduces significantly less NOx than replacing Class 8 trucks, NGVAmerica believes that these phases should be run concurrently so that Delaware is not waiting 3-5 years to realize the NOx reductions needed.

It is a worthwhile endeavor to give our school children cleaner air to breathe and NGVAmerica suggests that Delaware's Phase 1 school bus replacement include funding for school buses powered by cleaner compressed natural gas (CNG). Because natural gas vehicles offer options in all classes of vehicles, deploying CNG school buses will enable leveraged projects where school districts and other fleets can combine their fuel needs to spur the creation of new CNG stations to support that need at no cost to the fleets. Furthermore, per the Department of Energy Alternative Fuels Data Center (<https://www.afdc.energy.gov/fuels/prices.html>), CNG historically is one of the lowest priced fuels while propane is the highest (as of January 1, 2018 there was a \$1.71 price differential with propane being at \$3.88 and CNG at \$2.17 on a gallon of gasoline equivalent).

In addition to the above on-road applications, natural gas also is capable of powering non-road applications such as freight switchers and other locomotives. This natural gas technology effectively provides what would be a Tier 5 emissions freight switcher (labeled Tier 4 until the U.S. EPA puts out the Tier 5 specifications) at Tier 4 diesel freight switcher pricing. Natural gas ferries and ships are also available. We would urge DNREC to ensure that any future funding opportunities or solicitations concerning non-road marine or rail projects be open to natural gas.

The VW EMT funds provide an extraordinary opportunity for Delaware to cost-effectively accelerate the transition to cleaner vehicles and lower emissions. Commercially available natural gas vehicles offer the best solutions today for addressing the goals of the EMT, delivering the most nitrogen oxide emission reductions for the least cost.

Current State Beneficiary Mitigation Plans

Twenty-three states have released draft VW Beneficiary Mitigation Plans and NGVAmerica has reviewed these plans and offered comments. NGVAmerica believes the Colorado Plan provides an excellent model for other states that wish to segment their funding, maximize the use of alternative fuels, and provide parity among alternative fuels (https://www.colorado.gov/pacific/sites/default/files/AP_VW_Beneficiary_Mitigation_Plan.pdf).

In allocating its funds, Colorado did not pick a preferred alternative fuel (diesel is excluded except for Class 4-7 pre-2002 vehicles) and provides a relative **parity for funding for the various alternative fuels** through its choice of percentage funding by fuel type. The \$18M set aside by Colorado for Alt Fuel Trucks/School and Shuttle Buses funds all alternative fuels at 40% of the vehicle cost for government and public entities, while private vehicles are funded at 25% of the vehicle cost (not the 75% allowed for EVs because that would result in fewer vehicles and less NOx reductions, and there are other sources for EV funding).

Additional Options for Vehicle Scrappage

NGVAmerica also recommends that DNREC consider the following vehicle scrappage options in the Plan:

- Increase the options for scrappage beyond a strict replacement of a current fleet vehicle (e.g., allow a fleet to acquire an older vehicle from another fleet or allow a fleet to exchange one of its newer vehicles for another fleets older vehicle that is then scrapped)
- Since the Trust does not specify the fuel of the scrappage vehicle, allow natural gas vehicles that meet the year criteria to be scrapped and replaced with new NGVs

Use the Most Current Emissions and Cost Benefit Calculation Tools – HDVEC created for VW Projects

The Argonne National Laboratory's AFLEET tool should be used to calculate vehicle / fuel type emissions since this tool has recently been updated to include current data on all vehicles and fuels including in-use emissions data. The AFLEET Tool 2017 updates include:

- Added low-NOx engine option for CNG and LNG heavy-duty vehicles
- Added diesel in-use emissions multiplier sensitivity case
- Added Idle Reduction Calculator to estimate the idling petroleum use, emissions, and costs for light-duty and heavy-duty vehicles
- Added well-to-pump air pollutants and vehicle cycle petroleum use, GHGs, and air pollutants
- Added more renewable fuel options
- AFLEET Tool spreadsheet and user manual at: http://greet.es.anl.gov/afleet_tool and tool link is: <http://www.afdc.energy.gov/tools>

ANL has also just released a new vehicle emissions calculator (HDVEC) to provide state officials and fleet managers with an accurate tool to gauge emissions reductions across various medium- and heavy-duty vehicle project options affiliated with the Volkswagen Environmental Mitigation Trust Settlement. The HDVEC tool is available at: <http://afleet-web.es.anl.gov/hdv-emissions-calculator/>.

The DNREC Plan states that it uses the U.S. EPA Diesel Emissions Quantifier (DEQ) Tool for its emissions calculations. The DEQ tool is not current in its underlying assumptions and data for today's engines and in-use emissions, therefore NGVAmerica recommends that DNREC use the HDVEC tool since the data is current, easy to use and was created for VW projects. Please let NGVAmerica know if you would like us to show you the differences in these tools.

Summary of NGVAmerica's Recommendations for EMT Funding

- ✓ Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, we believe that the funding should be set aside for clean, **alternative fuel vehicle projects that focus on maximizing NOx reduction for the funds spent**
- ✓ 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
- ✓ Target funding for technologies that have demonstrated the ability to deliver actual **lower in-use emissions** when operated in real-world conditions
- ✓ 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 and refuse trucks)
- ✓ Prioritize funding for **commercially available products that are ready for use**
- ✓ Prioritize funding for **clean vehicles rather than fueling infrastructure**
- ✓ **Scale funding to incentivize the cleanest engines available** – at a minimum, provide parity among alternative fuels by following a version of the Colorado VW Plan that funds non-diesel alternative vehicles in the private sector at 25% of the cost of the vehicle and public sector vehicles at 40%
- ✓ Ensure that funding incentivizes adoption by **both public and private fleets**

- ✓ Prioritize projects that include **partnerships that provide a match** such as a CNG or LNG station being built in locations that will receive the VW funding
- ✓ **Accelerate the funding** in the early years to maximize the NOx reduction benefits
- ✓ Use vehicles emissions measurement tools that reflect current technologies and performance under real world operation duty cycles – **Argonne National Laboratory’s AFLEET tool and HDVEC tools** are the most current tools available

Compared to other alternative fuels and to diesel vehicles, natural gas vehicles that are commercially available today, cost effective in reducing NOx when compared to other fuels, use a domestic fuel and offer the best solution for addressing the goals of the EMT.

NGVAmerica welcomes the opportunity to provide further information and analysis on the economic and environmental benefits of natural gas vehicles in Delaware. Please contact Jeff Clarke, NGVAmerica General Counsel & Regulatory Affairs Director at 202.824.7364 (jclarke@NGVAmerica.org), or Sherrie Merrow, NGVAmerica State Government Advocacy Director at 303.883.5121 (smerrow@NGVAmerica.org) to set up a meeting and for additional information.

Sincerely,



Daniel J. Gage
President