



Natural Gas Vehicles for America

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January 15, 2018

Commissioner Robert A. Martineau, Jr.
Tennessee Department of Environmental Conservation
312 Rosa L. Parks Ave., Tennessee Tower – 2nd Floor
Nashville, Tennessee 37243

RE: NGVAmerica Additional Comments for the State of Tennessee VW Beneficiary Mitigation Plan

Dear Commissioner Martineau:

Natural Gas Vehicles for America (NGVAmerica), the national trade association for the natural gas vehicle industry, respectfully submits the following comments in response to the Tennessee (TN) Department of Environmental Conservation (TDEC) request for information to be considered when developing the Tennessee Volkswagen (VW) Beneficiary Mitigation Plan. These comments are in addition to the NGVAmerica comments submitted to you on March 20, 2017 regarding NGVAmerica's recommendations on how states can best use the Environmental Mitigation Trust (EMT or Trust) funds that each state will receive.

The VW EMT funds provide an extraordinary opportunity for Tennessee and other states to put significantly cleaner, lower-polluting vehicles on the road in public and private fleets. This funding (\$45.76 million) can and should be used by Tennessee to continue its commitment across the state to accelerate the use of cleaner, alternative fuels that offer a cost-effective alternative to funding diesel vehicles.

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. Additionally, if renewable natural gas (RNG) is used, life cycle greenhouse gas emissions from natural gas vehicles (NGVs) are reduced further.

NGVAmerica strongly encourages TDEC to define broad categories of eligible projects and allow the use of different types of applications and technologies that will reduce the most NOx for the funds expended.

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*).

Current State Beneficiary Mitigation Plans

Sixteen states have released draft VW Mitigation Plans and NGVAmerica has reviewed these plans and offered comments to the states. 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).

Colorado's VW Plan goals are well-stated, and the Plan maximizes the deployment of current successful technologies to reduce NOx emissions for the lowest cost, and essentially creates equity among fuels for incentive funding. The stated goals of the CO Plan are those that NGVAmerica agrees with and are as follows:

- Maximize the trust's air quality benefits in Colorado (reduce NOx, GHG, other pollutants)
- Catalyze the adoption of zero emission and alternative fuel vehicles
- Distribute funds quickly (within 5 years) - emphasis is on ready projects and will be "first come, first served"
- Appropriately balance the cost of the project and emission reduction benefits
- Focus on but not limited to areas of non-attainment, location of VWs and environmental justice communities

The CO Plan funding details (vehicles are OEM only and require scrappage) are summarized as follows:

- \$18M Alt Fuel Trucks/School and Shuttle Buses (pages 12-14)
 - New diesel only allowed for fleets of 9 trucks or less
 - Government and public entities funded at about 40% of total vehicle cost with caps
 - Private funded at about 25% of total vehicle cost with caps
- \$18M Alt Fuel/EV Class 4-8 Transit Buses (pages 14-16)
 - VW funding to be combined with existing funds
 - Applicant per bus portion to be less than \$100,000
- \$12.2M Flex Funds to be used in response to market demand for eligible mitigation actions - to be spent after the initial allocations to other programs
- \$5M DERA option
- \$10.3M EV Chargers/infrastructure
- \$5.2M Administrative Costs

In allocating the funds above, Colorado did not pick a preferred fuel and kept the categories simple and broad. The \$18M for Alt Fuel Trucks/School and Shuttle Buses, CO 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 use the funds for a smaller number of vehicles (reducing less NOx) and there are other sources for EV funding).

Colorado has other funding they can apply to Transit, so they created a structure to augment the funding provided by the \$18M segment. The \$12.2M in Flex Funds is a good idea because these funds may be used to support projects in the segments that are successful and oversubscribed. For the DERA option, LNG drilling rig and hydraulic fracturing engines, mining trucks and locomotives are potential projects.

Additional Options for Vehicle Scrappage

NGVAmerica also recommends that the TDEC 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 older natural gas vehicles that meet the year criteria to be scrapped and replaced with new, cleaner NGVs

Use the Most Current Emissions and Cost Benefit Calculation Tools

TDEC has said that a variety of tools will be used to inform its beneficiary mitigation planning process, and included both the Argonne National Laboratory's AFLEET tool and the EPA Diesel Emissions Quantifier (DEQ) tool. 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, and the EPA DEQ tool has not yet been updated. 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>

Summary of NGVAmerica's Recommendations for EMT Funding

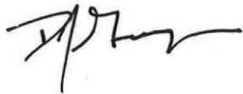
- ✓ Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, we believe that the funding should be set aside for clean, **alternative fuel vehicle projects that focus on maximizing NOx reduction for the funds spent**
- ✓ Provide a larger incentive and greater 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** is the most current

NGVAmerica and its members are eager to serve as a resource to assist the TDEC in its development of the state’s proposed Beneficiary Mitigation Plan. We strongly encourage the state to recognize the unmatched role that natural gas vehicles can play in delivering NOx emissions reductions required by the settlement and Trust.

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

Sincerely,



Daniel J. Gage

President, NGVAmerica