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KAY IVEY
GOVERNOR

STATE OF ALABAMA

ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Laurence Bedard
Business Development Coordinator
The Lion Electric Co.
921, chemin de la Rivière-du-Nord
Saint-Jérôme, QC J7Y 5G2

Dear Mr. Bedard:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

Your comments have been reviewed and it was determined that the Alabama Department of Economic and Community Affairs will remain technology neutral in regard to the Volkswagen Settlement. Applicants will be able to choose the fuel source that best benefits their needs and goals as long as their proposed fuel type meets the requirements of the Volkswagen Settlement. As for including infrastructure for school districts purchasing electric school buses, per the Environmental Mitigation Trust Agreement, infrastructure is not allowable for funding under the school bus mitigation action item.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

LION

January 31st, 2019

The Lion Electric Co. - USA

RE: Comments on Alabama's use of Environmental Mitigation Trust Funds

To whom it may concern:

The Lion Electric Co. Team would like to thank you for this opportunity to provide comments to the request for public comment on how the Volkswagen Settlement funds should be appropriated in Alabama. We would like to bring awareness of the need to transition the largest form of public transportation from a 95% reliance on diesel fuel to a fully all-electric zero-emission fleet as quickly as possible.

We appreciate the opportunity to provide comments on the draft Beneficiary Mitigation Plan ("BMP") plan, which describes the state's overall intentions and plan for spending about $25.5 M of Alabama's VW allocation funding.

The Volkswagen settlement provides a great option to address Alabama's huge ZEV opportunity and demonstrate that available zero-emission technologies offer lower owner costs, improved maintenance and performance, and better serve a diverse range of communities' public transit needs, including reduction of NOx and elimination of GHG and criteria emissions.

Why Alabama Should Prioritize School Buses

All sources of diesel pollution are dangerous to our health, but pollution from school buses are particularly dangerous because of the population they serve and where they operate.

School buses are the largest form of public transportation, with approximately 480,000 operating in the United States every school day transporting some **26 million children**.

We have known the **dangers** of **diesel pollution** for decades. The US EPA and the World Health Organization have listed diesel pollution as a class 1 carcinogen. The US EPA has never determined any safe level of diesel emission exposure for children.

Diesel emissions contain fine and ultra-fine particulate matter which can enter one's airways and blood stream, causing damage to internal organs like your liver, heart, and lungs. Populations that live in areas of poor air quality have been shown to have short life expectancy and higher rates of chronic illnesses like asthma. Asthma rates among children are at unacceptable levels. The national average is 1 in 10 children have some form of asthma, and in highly polluted areas, the asthma rate can be as high as 1 in 4 children.

Children are more susceptible to the dangers of diesel pollution **because** "they breathe 50 percent more air per pound of body weight than do adults."

Electric School Buses Make Sense Economically

There are currently 150 electric school buses in North America, more specifically in New York, Massachusetts, Minnesota and California, that have been carrying kids to school every day safely for the last 3 years. School districts and operators have shared data and have found 80% improved fuel savings, 40% fuel cost reduction and 60% cost saving in maintenance when switching to electric. This average is compiled with information from approximately 2.5 million miles driven. The return on investment in most cases is under seven years without any governmental funding or grants; making this zero-emission technology cost-competitive.

The benefits of electric school buses are extensive; they are quiet, reliable, require less maintenance and make sense economically. Additionally, both **Bloomberg New Energy Finance** and **USPIRG** have published reports showing that, over the lifetime of large fleet vehicles, electric vehicles even at a higher cost of entry will cost less to operate over their expected 15 to 20 year operational life. They predict that an electric school bus is as much as $6,000 cheaper to run each year due to lower cost of electricity vs diesel and lower maintenance. It has been estimated that school buses uses over 822,857,000 gallons of diesel fuel at an **annual cost** of $3,184,457,000 ($3.2 billion).

Electric motors are inherently more efficient than combustion engines. Whereas over 70% of the energy created during the combustion cycle is wasted as heat energy, electric motors can turn over 80% of their energy use into motion. While diesel buses often get between 4 or 5 mpg, electric buses can get 12 to 14 mpg equivalent.

A pilot program in California that incorporated vehicle-to-grid technology has shown that, with proper planning, a school bus can generate up to $6,000 a year in revenue for a school. The buses can charge at night when electricity rates are low and then supply electricity to the school or grid during the day when rates and consumption are higher and the buses are not in use. This type of use is even more beneficial during the summer, when a large portion of school bus fleets are left idle, allowing more of their battery capacity to be utilized to support the grid.

Battery storage of electricity becomes increasingly important as areas rely more on wind and solar for energy production. Since these types of energy production are cyclical and vary in output, the ability to store excess energy during times of high production and supplement the grid during times of low production is vital.

Electric vs. Alternative Fuel School Buses

Lion strongly opposes the use of VW settlement funds for alternative fuel buses (propane, clean diesel, CNG, etc.). While propane or CNG buses are cleaner than diesel, electric school buses are the most

effective at reducing emissions and mitigating NOX, which is the primary purpose of the Environmental Mitigation Trust.

Alabama's electrical grid is getting cleaner, with a lot of power created by wind and much more solar capability. As the electrical grid gets closer to zero emissions the benefits of using electric school buses will increase. No other form of vehicle propulsion has the potential to get cleaner as the bus ages. Buying an alternative fuel bus today might be less costly, but with a life expectancy of a school bus sometimes being more than 20 years, electric buses will only continue to become more competitive in the future.

All-Electric Midi/Minibus

When looking at current available transportation in North America, switching from individual cars to transit and collective transportation is key to reducing greenhouse gas emissions (GHG). In fact, while national averages show significant GHG emission savings from transit, bus transit is still the second largest contributor to CO2 emitted gas per passenger-mile in America. This is mostly because fossil fuels (diesel and natural gas) are currently the predominant energy used.

Many transit agencies are replacing fossil fuel buses with hybrid-electric buses in an effort to mitigate harmful GHG emissions. This strategy, however, is concerning for the following reasons:

a. The hybrid technology is more complex; for example, technicians need to be qualified in both electric and diesel fuel powertrains as well as drivers.
b. While these buses consume 15% to 40% less fuel and consequently emit less greenhouse gas, they are still contributing to the production of a large amount of toxic gases and diesel particulate matters in cities. According to the Nobel Prize winning 2007 Intergovernmental Panel on Climate Change report, greenhouse gas emissions must be reduced by 50% to 85% by 2050 to limit global warming and avoid terrible environmental impacts.

All-electric buses do not produce any greenhouse gas or particulate matter, and also offer many benefits such as their quietness and cleanliness. They are an overall solution to counter climate change and to provide long-term sustainable mobility options.

Accessible Transit and first-mile/last-mile shuttles are two services that can easily be electrified because of their predictable routes. Furthermore, as emphasized by WHO, the increasing number of the people with reduced mobility is rising sharply in America due to the aging of the population. Proactive states and cities are already rethinking their public transportation systems to include this active population with special needs.

LION

All-Electric Truck

As with school buses and transit buses, electric trucks provide up to an 80% reduction in NOx and other greenhouse gases. We strongly oppose the use of funds to repower existing vehicles or subsidize the purchase of alternative fueled vehicles. Electric trucks make both environmental and economic sense. When supplying funds for Class 4-8 trucks, we request monies be directed toward subsidizing only electric trucks as well as charging infrastructure along major highway corridors throughout the state.

Why support carriers to switch from diesel to electric? About 90% of carriers have small fleets (less than 15 trucks). These carriers tend to keep their trucks for a very long time and older trucks have engines running with older EPA standards which are currently leading to higher harmful NOx and particulate matters. Encouraging these carriers to switch to electric will, overall, make them more competitive and cleaner.

Key Areas of Investment

In terms of funding priorities, the ADECA should reconsider the amount of available funding for repowering or replacing older vehicles with "new" diesel or alternative fuels. These technologies do not offer a 100% reduction in NOx emissions; therefore, should not receive funding to offset 100% of the cost of the vehicle. At most, funding should cover no more than the incremental cost of the vehicle above existing diesel vehicles. Furthermore, there should be no funds allocated to the replacement of these vehicles with a newer diesel vehicle. In order to see a quick and rapid adoption of electric school buses, we recommend incentives cover the entire cost of the electric school bus or at least 80% of the cost of the electric school bus through a voucher program. Without a purchase incentive, school districts will not want to go through the barriers of changing their fleet to electric. Many school districts are cash-strapped and are unable to purchase zero-emission school buses without the necessary incentive funding. We have witnessed this pattern in different states where only the incremental cost of the electric school bus was covered, and adoption results were poor and unsuccessful.

Additionally, infrastructure is a crucial component of purchasing an electric school bus for school districts and should be an eligible cost within the plan. Based on previous experiences, including the biggest deployment of electric school buses in North America, we recommend allocating a minimum of $5,000 per electric school bus for charging infrastructure. This will cover the cost of 1 electric school bus charger and installation. It may also cover the electrical infrastructure upgrade most schools need to power their buses; however, in most cases, and to deploy more than 1 electric school bus, trenching and upgrades to the current system may be needed to power bigger fleets. In that case, we recommend allocating additional funding to school districts willing to electrify a bigger portion of their fleet.

We would like to thank you for allowing the public the opportunity to provide comments during this process. We look forward to reading the next iteration of the draft mitigation plan in Alabama and continuing to work with ADECA to implement its plan.

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ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Brett Barry
Senior Policy Advisor
Clean Energy
40 Laurens Street
Charleston, SC 29401

Dear Mr. Barry:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

NOx emission requirements will be included in the application process but are not required to be specified in the Mitigation Plan. Funding percentages for vehicle costs are based upon the fuel type as outlined by the Volkswagen Environmental Mitigation Trust. The Alabama Department of Economic and Community Affairs maintained these maximum percentages with the exception of 100 percent funding for public entities being lowered to 80 percent. This change was based on input from the public listening sessions provided prior to developing the Draft Environmental Mitigation Plan. Government and Non-Government entities will both participate in a competitive application process without restrictive funding percentages or restrictions on the type of projects. Each applicant will be able to apply for projects that best suit their needs and goals.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

40 Laurens Street
Charleston, SC 29401

www.cleanenergyfuels.com

Clean Energy

Brett G. Barry
Senior Policy Advisor
(562) 522-7427
bbarry@cleanenergyfuels.com

Recommendations for Alabama's Volkswagen Settlement Spending Plan

February 14, 2019

Thank you for the opportunity to provide comments on structuring Alabama's Environmental Mitigation Trust (EMT) allocation under the Volkswagen settlement.

As North America's largest provider of natural gas transportation fuel with almost 20 years of leading industry experience, Clean Energy provides construction, operation and maintenance services for refueling stations and is a producer of renewable natural gas (RNG). We have a deep understanding of the growing marketplace, and our portfolio includes 589 stations in 43 states including several in the Cotton State.

The EMT was established to promote reductions of NOx emissions in the medium and heavy-duty vehicle sectors in order to mitigate the air quality damage caused by Volkswagen's non-compliant light-duty diesel vehicles. Reductions are to be achieved, in part, by providing grants for the scrappage and replacement of older diesel vehicles with new diesel, hybrids or alternative fuel vehicles. The question presents itself: How should these funds be spent in order to provide the greatest overall benefit?

Recommendation #1: A majority of the EMT funds should be used to deploy vehicles that perform below today's federal NOx emissions standard of 0.2 g/bhp-hr (low-NOx, near –zero and zero emission vehicles)

The EMT fund provides a unique opportunity to transform the medium and heavy-duty truck sector by deploying the most cutting edge engine technologies. While new diesel engines simply meet the required federal NOx standard, many natural gas engines have gone farther and are certified to either the California Air Resources Board's optional low NOx or near-zero emissions standards. These engines are therefore certified to produce 50-90 percent fewer NOx emissions than new diesels, respectively. Additionally, a recent study[1] conducted by the University of California Riverside, found the actual in-use NOx emissions of the near-zero natural gas engine to be up to 95 percent cleaner than diesel (0.001g/bhp-hr). Given the EMT has been created because of the NOx pollution associated with non-compliant diesel vehicles, we believe that the majority of the funding should be set aside for vehicle projects which make improvements beyond the current federal NOx standards.

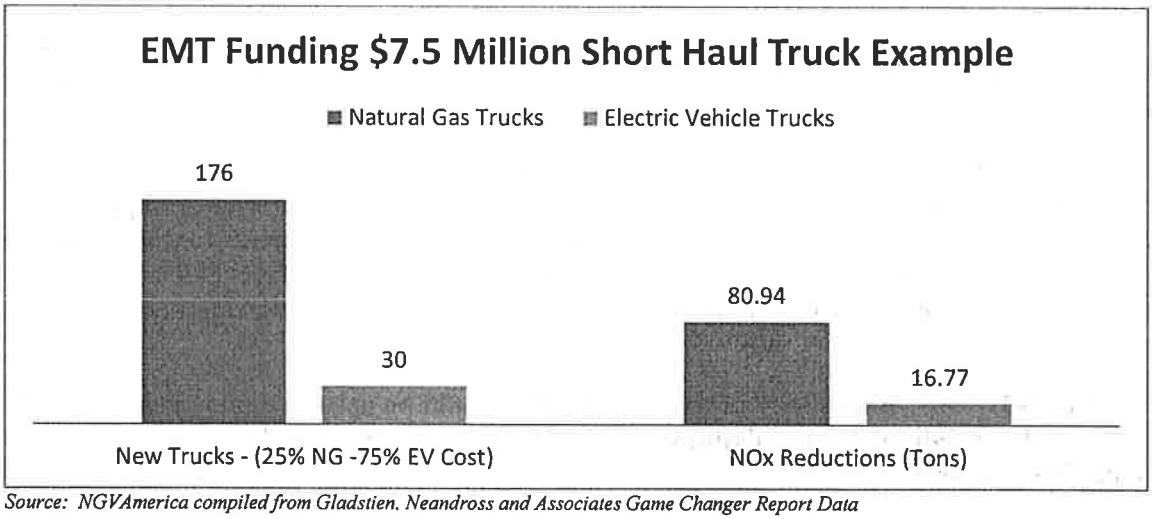
Recommendation #2: Grants should cover the same percentage of the vehicle cost for all alternative fueled vehicles which perform below today's federal NOx emissions standard

A report from the California Energy Commission[2] indicates that the near-zero natural gas engine produced by Cummins-Westport can reduce the life-cycle emissions of medium and heavy duty vehicles to levels near or equal to those of zero emission electric vehicles. For example, the South

[1]" Ultra Low-NOx Natural Gas Vehicle Evaluation ISL G NZ", College of Engineering for Environmental Research and Technology, University of California at Riverside, February 2016.

[2] "2017-2018 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program" California Energy Commission, page 4, www.energy.ca.gov/2016publications/CEC-600-2016-007/CEC-600-2016-007-SD.pdf, October 2016

Coast Air Quality Management District of California views the near-zero NOx standard to be zero emission equivalent[3] based on the district's mix of electric generation supplying their grid. Moreover, their electric generation mix is one of the cleanest in the country and therefore Alabama will benefit further. While comparable in regard to NOx emissions, natural gas and electric vehicles (EVs) are miles apart on cost. An all-electric medium or heavy duty vehicle can cost twice the amount or more of a similar vehicle powered by a near-zero natural gas engine. Yet, under EMT guidance, EVs may receive a grant up to 75 percent of the total vehicle cost while natural gas vehicles (NGVs) may only receive a grant for up to 25 percent of the total vehicle cost. Funding the more expensive EV and at a greater percentage will result in fewer vehicles being deployed and therefore fewer reductions in NOx emissions. Below is a chart illustrating these points by showing the benefits of a $7.5 million investment in NGVs versus that same investment in EVs.



Source: NGVAmerica compiled from Gladstien, Neandross and Associates Game Changer Report Data

There is no policy reason for providing a 500% larger incentive (in terms of dollars) for an EV truck which has similar life-cycle NOx emissions as a low-NOx or near-zero natural gas truck.

Example

	Vehicle Cost	Funding Percentage	Grant
Class 8 EV Truck	$300,000[4]	75%	$225,000
Class 8 Nat. Gas Truck	$170,000	25%	$42,500

The funding percentage for both natural gas trucks and EVs which perform below federal NOx emissions standard should be the same. Therefore, both EVs and NGVs should be funded at 25 percent of the total vehicle cost.

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[3] "Comments and Responses to Comments on the Revised Draft AQMP Plan", Southern California Air Quality Management District, page 692: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2016-air-quality-management-plan/response-to-comments/2016-aqmp-rtc-4-of-4.pdf?sfvrsn=4, November 2016

[4] The vehicle cost provided by BYD Motors Inc. to the State of New York for their 2016 Class 8 T9A truck: https://truck-vip.ny.gov/NYSEV-VIF-vehicle-list.php

Example of Recommended Approach

	Vehicle Cost	Funding Percentage	Grant
Class 8 EV Truck	$300,000	25%	$75,000
Class 8 EV Nat. Gas Truck	$170,000	25%	$42,500

Our recommendation is more than fair to EVs as under this approach an EV will receive close to twice as much funding per vehicle as an NGV.

Recommendation #3: Either no more than 20 percent of all funds should be used for government fleets or the funding percentage for government vehicles should be reduced to 50 percent of the total cost

The 100 percent funding level for government vehicles provides a great opportunity for public fleets to reduce their emissions. However, the allure of "free" vehicles for the government should not be permitted to dissipate the greater potential deployment of cleaner vehicles in the private sector. The full funding of government vehicles results in fewer vehicles being deployed per dollar and therefore a reasonable cap must be put in place. A proper balance can be achieved by limiting the funding for government fleets to 20 percent of all EMT funds or by reducing the funding per vehicle to 50 percent of the total cost.

Recommendation #4: Mass transit, para transit and refuse fleets should be the main focus of funding for government vehicles

Mass transit, para transit and refuse fleets are high mileage fleets and are therefore a key target for achieving meaningful NOx reductions. They also directly serve the community thereby making them highly visible investments. Moreover, these fleets also return to a central hub for refueling which makes them ideal for cleaner alternative fuel applications since only a single station is required rather than an expansive network. Over the past decade many mass transit agencies have recognized the unique positioning of their fleets for utilization of alternative fuels. L.A. Metro operates the largest natural gas bus fleet with over 2,000 buses. It is important to note that grants for public mass transit buses should take into consideration the 80 percent matching funds from the federal government for capital maintenance investments. Therefore, public mass transit grants should not exceed 20 percent of the vehicle cost where the federal match is applicable. In the refuse industry, over half of all newly purchased trucks now operate on natural gas due in part by funding made available by states.

Conclusion

Low NOx and near-zero NGVs produce 50-95 percent fewer NOx emissions than diesels and are the most economical alternative. From an implementation standpoint, NGVs are the only alternative fuel vehicle option that offers commercially available vehicles for all the categories that qualify for funding under the EMT. Therefore, we urge you to provide significant funding for the deployment of medium and heavy-duty natural gas vehicles in Alabama's mitigation plan and take into consideration the foregoing recommendations. Thank you for the opportunity to submit comments on this truly unique opportunity.

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STATE OF ALABAMA

ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Robert J. White
Project Manager
Alabama Power Company
600 North 18th Street / 6N-0659
Birmingham, AL 35203

Dear Mr. White:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

As per your comment, the Beneficiary Mitigation Plan will be revised to clarify that installation costs are eligible under Light Duty Zero Emission Vehicle Supply Equipment.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

Settlement, VW

From: White, Robert J. (Robin) <RJWHITE@southernco.com>
Sent: Thursday, January 3, 2019 11:34 AM
To: Settlement, VW
Subject: Question #1

I noticed under Light Duty Zero Emission Vehicle Supply Equipment that the plan does not specifically state "including the costs of installation" but only references the cost to purchase eligible equipment. Will the plan cover the cost of eligible equipment, including the costs of installation ?

Robin

Robert J. White (*Robin*) LEED AP BD+C

Alabama Power Company
Project Manager
Electric Transportation

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Alabama Power

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KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Daniel J. Gage
President
NGVAmerica
400 N. Capitol St. NW, Suite 450
Washington, D.C. 20001

Dear Mr. Gage:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

Your comments have been reviewed and it was determined that the Alabama Department of Economic and Community Affairs will remain technology neutral regarding the Volkswagen Settlement. Applicants will be able to choose the fuel source that best benefits their needs and goals as long as their proposed fuel type meets the requirements of the Volkswagen Settlement. Scrappage and Emissions reporting requirements will both be addressed in the application and implementation phase of the program. NGVAmerica's additional recommendations for funding are outside of the scope required to be covered in the Beneficiary Mitigation Plan and will be considered as the application for funds is developed.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

NGVAMERICA
Natural Gas Vehicles for America

400 North Capitol Street, N.W.
Washington, D.C. 20001
ngvamerica.org

February 8, 2019

Director Kenneth W. Boswell
Alabama Department of Economic and Community Affairs
401 Adams Avenue
P.O. Box 5690
Montgomery, AL 36104

RE: NGVAmerica Comments on the Alabama State Draft Beneficiary Mitigation Plan

Dear Director Boswell:

Natural Gas Vehicles for America (NGVAmerica), the national trade association for the natural gas vehicle industry, respectfully submits the following comments to the Alabama Department of Economic and Community Affairs (ADECA) on its Draft Beneficiary Mitigation Plan (Plan) for information as you finalize your Plan. These comments are in addition to the NGVAmerica comments submitted to you on May 9, 2017 (attached) regarding NGVAmerica's recommendations on how states can best use the Environmental Mitigation Trust (EMT or Trust) funds that each state will receive as part of the Volkswagen (VW) diesel emission settlement.

The VW EMT funds provide an extraordinary opportunity for Alabama and other states to put significantly cleaner, lower-polluting vehicles on the road in public and private fleets. This funding ($25.48 million) can and should be used by Alabama to continue its commitment to accelerating the use of cleaner, alternative fuels that offer a cost-effective alternative to funding diesel vehicles.

As shown in our VW Comment Letter submitted on May 9, 2017, 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 updated (using the latest version of the Argonne Lab AFLEET) diesel, electric vehicle and natural gas vehicle comparisons on the attached NGVA VW Flyers 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). Additionally, studies have shown that the near zero engines powered by natural gas perform at or better than their EPA tested rating, while new diesel engines may have in use emissions that are as much as 5 times higher than their EPA tested rating (see NGVAmerica's May 9th 2017 Comments).

[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).*

If renewable natural gas (RNG) made from organic waste is used, life cycle greenhouse gas emissions from NGVs are reduced further, potentially becoming carbon negative. Using RNG also creates environmental and economic development opportunities for energy created from wastewater, landfills, agricultural waste and other anthropogenic methane sources that may otherwise escape into the atmosphere as potent greenhouse gases.

In addition to the above on-road applications, natural gas is also capable of powering non-road applications such as freight switchers, other locomotives and marine vessels. For freight switchers, 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. Due to proven technology and increasing natural gas projects in rail and marine as well as the renewable consideration that the projects could use RNG, we ask the ADECA to ensure that these funding opportunities are open to natural gas options.

NGVAmerica applauds the overall goals Alabama has declared for the use of the VW Settlement funds, with the priority being NOx reductions which adheres to the intent of the Trust. Also, ADECA focuses on economic development and fuel security and energy assurance, both critical to ensuring that Alabama economy continues to grow and is supported by a domestic source of fuel. Using natural gas vehicles is key to achieving these goals.

The Alabama Draft Plan also states that the ADECA anticipates spending its Trust allocation across the ten categories that the Trust identifies, with approximately 50% going to on-road applications. Natural gas vehicles are commercially available in all the vehicle classes and 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

Forty-seven states have released Beneficiary Mitigation Plans and NGVAmerica has reviewed these plans and offered comments. The best state Plans limited diesel options and did not pick a preferred alternative fuel. Several states provide a relative parity for funding for the various fuels through their choice of percentage funding by fuel type. One model 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 for all alternative fuels.

The ADECA has not stated what the percent of cost of vehicle numbers will be for private and government projects. If the EMT percentages are followed there will be no achievement of any parity among fuels and diesel and electric projects will be promoted over other fuels. NGVAmerica recommends that since diesel does not perform to the EPA standard when in use at low speeds or idling, we recommend that diesel receive a lower (or no) funding amount than alternative fuels, and that the electric vehicle percentage be reduced.

Additional Options for Vehicle Scrappage

NGVAmerica also recommends that the ADECA 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 (ANL) 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 natural gas 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/.

It should be noted that the U.S. EPA Diesel Emissions Quantifier (DEQ) tool is not current in its underlying assumptions and data for today's engines and in-use emissions, therefore NGVAmerica requests that the ADECA use the ANL HDVEC tool (derived from the AFLEET tool) for all applicable categories of projects, since the data is current, easy to use and was created for VW projects. NGVAmerica is available to discuss the operation of this tool and show comparisons between it and the DEQ if the ADECA desires to do this.

Summary of NGVAmerica's Recommendations for EMT Funding

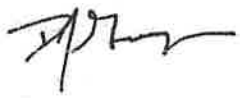
- ✓ Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, we believe that the funding should be set aside for clean, ***alternative fuel*** **vehicle projects that focus on maximizing NOx reduction for the funds spent**
- ✓ Provide a larger incentive and 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, offer the best solution for addressing the goals of the EMT. The ADECA recognizes the value of cost-effective NOx reductions that NGVs provide, and that these emission reductions can be realized today.

NGVAmerica welcomes the opportunity to provide further information and analysis on the economic and environmental benefits of natural gas vehicles in Alabama. 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

OFFICE OF THE GOVERNOR

KAY IVEY
GOVERNOR

STATE OF ALABAMA

ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Dean Stapleton
Senior Manager of Alternative Fuels
Penske Truck Leasing
2675 Morgantown Road
Reading, PA 19607

Dear Mr. Stapleton:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

There is nothing in the Beneficiary Mitigation Plan to prohibit vehicle leasing. As the applications are developed, the Alabama Department of Economic and Community Affairs will consider vehicle leasing, purchase order timing, confidentiality, and operational requirements.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

January 21, 2019

Re: Penske Comments on Implementation of VW Funding

To Whom It May Concern:

Penske Truck Leasing (Penske) would like to thank the Alabama Department of Economic and Community Affairs (ADECA) for the opportunity to provide comments regarding the implementation of its Volkswagen (VW) Settlement Beneficiary Mitigation Plan. ADECA has consistently provided an opportunity for stakeholder engagement and feedback to shape and refine programs to ensure they are meeting their intended purposes—a process we strongly respect and admire.

Penske is committed to reducing vehicular emissions and accelerating the deployment of advanced transportation technologies and is a natural partner to the state in achieving its goals to reduce emissions from mobile sources. Our average customer size is between eight and twelve trucks, and we are able to provide comprehensive vehicle services to companies that do not have the financial capital and necessary experience to purchase and maintain alternative fuel vehicles (AFVs). Leasing with Penske provides the following benefits to fleets:

- No upfront purchase costs and concerns about vehicle residual value or resale
- No costs to modify maintenance facilities
- No maintenance training costs or investments in special tools
- No fueling anxiety as Penske assists with vehicle routing and fueling contracts
- 24/7 Roadside assistance and a nationwide service network
- Cost savings for customers

As ADECA implements programs for the VW settlement, we would like to provide the following recommendations and insight for your consideration:

1. **Leasing Eligibility and Applicable Scenarios** – Penske requests that ADECA treat vehicle leasing like any other financing mechanism and allow fleets to have equal access to program funding regardless of the financing mechanism. Leasing is not prohibited by the Consent Decree, and we are requesting that states provide the utmost flexibility in allowing fleets of all sizes to participate in their programs by excluding leasing restrictions. The following scenarios outline how the leasing model would work under the term of the VW Settlement:
    a. Fleet A scraps an older vehicle, and Fleet A is the program applicant. The new vehicle would be titled under Penske and operated by Fleet A (traditional leasing model).
    b. Penske scraps an older vehicle, and Penske is the program applicant. The new vehicle would be titled under Penske and operated by Fleet A.
    c. Penske acquires Fleet A's vehicles and scraps it, and Penske is the program applicant. The new vehicle would be titled under Penske and operated by Fleet A.

2. **Purchase Order Timing and Vehicle Certifications** – The timelines associated with the deployment of emerging new technologies, such as zero-emission trucks and buses, are not fixed. These vehicles are also not currently EPA or CARB certified like their diesel or gas counterparts. Penske recommends that agencies provide at least a two-year window for vehicle deployments, starting from the date of contract execution, to allow for flexibility in the order and delivery process. Further, the agency should

outline what is required from the applicant to prove vehicle eligibility i.e., it will follow the HVIP eligible vehicle list or certification will not be required for newer technologies.

3. **Confidentiality** – Penske, similar to other large fleets, may receive preferential pricing from dealerships and OEMs. This information is a trade secret; neither Penske nor the dealer divulges this information to the public. Penske has received grant funding from agencies in Pennsylvania, Texas, Colorado, and California by providing documentation other than traditional quotes and invoices, and Penske requests that ADECA consider alternative methods of providing evidence of proof of purchase, or that ADECA guarantee confidentiality of any items shared by Penske.

4. **Operational Requirements** – Penske is interested in the operational requirements for new on-road vehicle projects. There are several pieces of off-road equipment that can be certified as on-road vehicles, and these units should be eligible for funding allocated to the categories for on-road trucks and buses.

In summary, we urge you to develop the state's VW programs in a way that focuses on the specific objective you are trying to achieve – emission reductions. Including leasing as an eligible project type for VW funded programs can provide the operational and maintenance assistance that typically serves as a barrier to AFV adoption for entities not accustomed to the requirements of such vehicles. Leasing will help ADECA provide access to a much wider audience of fleets that may not have considered employing such vehicles had leasing not been an option.

When fleets choose Penske for their clean vehicle needs, it is analogous to hiring an experienced in-house alternative fuels team. The fleets we work with in your state are eager to replace their older vehicles with cleaner and more fuel efficient, less polluting options, and we are eager to work with you and your team to advance the adoption of cleaner vehicle technologies. To that end, we would like to set up a call with your team to discuss that items described above. Please contact me to do so at dean.stapleton@penske.com or at 610-796-5256.

Sincerely,

Dean Stapleton, Senior Manager of Alternative Fuels
Penske Truck Leasing

OFFICE OF THE GOVERNOR

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GOVERNOR

STATE OF ALABAMA

ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

March 19, 2019

Mr. Eric McCarthy, SVP
Government Relations, Public Policy
and Legal Affairs
Proterra, Inc.
1 Whitlee Court
Greenville, SC 29607

Dear Mr. McCarthy:

RE: Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

Your comments have been reviewed and it was determined that the Alabama Department of Economic and Community Affairs (ADECA) will remain technology neutral in regard to the Volkswagen Settlement. Applicants will be able to choose the fuel source that best benefits their needs and goals as long as their proposed fuel type meets the requirements of the Volkswagen Settlement. As for revising the distribution of funds to allow additional percentages for Class 4-8 School Buses, Shuttle Buses, or Transit Buses, ADECA's starting percentages are primarily based on the amount of emissions each category is responsible for emitting in Alabama. ADECA then plans to distribute the funds in three rounds of funding allowing up to one-third of the funds to be distributed for each round. Based on the amount of responses submitted in the first round, distribution percentages may be redistributed prior to the second and third rounds of funding.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

PROTERRA

January 14, 2019

Alabama Department of Economic and Community Affairs (ADECA)
Energy Division
vwsettlement@adeca.alabama.gov

Re: Proterra's Response to Alabama's VW Draft Beneficiary Mitigation Plan ("BMP")

Dear ADECA:

Proterra, the leading U.S. manufacturer of electric, zero-emission transit buses, appreciates the opportunity to provide comments on the draft spending plan, which describes Alabama' overall intentions and plan for spending ~ $25M of Alabama's VW allocation funding.

The proposed BMP appropriately prioritizes projects that reduce NOx emissions efficiently and cost-effectively as well as increase fuel security. Further, the BMP allocates the greatest percentage of funding for the replacement of On-road Heavy-Duty Vehicles, which includes Class 8 public transit buses. Proterra strongly supports the suggested 25% allocation of funds for Class 4-8, School Bus, Shuttle Bus, or Transit Buses. But it urges the state to make the following changes to its proposed spending plan:

- Proterra strongly supports funding for the replacement of Transit and School Buses. But it urges the state only to fund the purchase of *zero-emission, battery-electric* buses. And it requests that the state allocate a total of 40% of its VW funding for Class 4-8 School, Shuttle and Transit Buses.
- The current plan does not allocate a specific funding percentage for a transit bus replacement program. Proterra requests that the state allocate 25% of its VW funding for a public transit bus replacement program, which will advance the electrification of public transit buses in those geographical areas and emission sectors that have the greatest impact on Alabama' overall mobile NOx emissions.
- Lastly, the current plan leaves open the possibility of replacing diesel buses with new diesel buses. But diesel buses, no matter how new, are not "clean." They still emit harmful PM emissions. They still emit harmful Greenhouse Gases. And they still emit harmful Nitrogen Oxide and Carbon Monoxide. Electric buses do not. Rather than merely replacing current buses with new buses with ***lower*** emissions, we urge the state to replace current buses with new buses with ***zero*** emissions so that they can serve disadvantaged neighborhoods and reduce vehicle pollution in these areas. Electrification provides a means to use domestic and diverse fuel sources in transportation, which will improve the country's economic, energy and national security. If the state does allow the replacement of buses with new diesel or alternative fuels (other than electricity), Proterra recommends that it reduce the eligible expenditures for Government Owned Eligible Buses from up to 80% to up to 25% of the cost of a new diesel or alternative fueled bus (other than electricity), which would match the state's proposed funding formula for Non-government Owned Eligible Buses.

Proterra certainly agrees with the statewide focus on achieving significant reductions in diesel emission exposures in priority air quality areas and areas that receive a disproportionate amount of air pollution from diesel vehicles. The state can accomplish both by investing heavily in battery electric buses. Replacing diesel buses with electric buses is simply one of the best investments the state can make to help electrify transportation and improve ambient air quality throughout

PROTERRA

Alabama. Indeed, this is a primary reason why Alabama A&M University has partnered with Proterra.[1] This approach will help spur the adoption of a greater number of electric buses among transit agencies, airports and universities.

Your Office has indicated the importance of using VW funding to reduce the primary sources of mobile NOx emissions in the state, and buses are certainly a leading culprit. But to achieve that goal, Proterra encourages ADECA to promote the adoption of zero-emission technology, and not "near-zero" technology. Nationally, 7,461,458 tons of NOx, or 55% of the 13,489,110 tons of NOx emitted derive from mobile sources; 35% attributable to on-road sources.[2] In the state of Alabama, 176,166 tons of NOx, or 53% of the 330,659 tons of NOx emitted are from mobile sources.[3] On this basis alone, we urge ADECA to use the VW funds allocated for transit buses specifically to advance the electrification of public transit buses in those areas disproportionately impacted by the VW diesel vehicle emissions. By doing so, Alabama will help achieve its program goals of reducing NOx emissions, driving economic development and increasing fuel security.

Thank you for the opportunity to provide comments on the draft spending plan. Please feel free to contact me directly about these comments or Proterra's initial project proposal titled *The Public Transit Electrification Project: Sustainable Mobility for Alabama*. I can be reached at 864-214-2668 or emccarthy@proterra.com.

Sincerely,

Eric J. McCarthy
SVP, Government Relations, Public Policy and Legal Affairs
Proterra Inc.

[1] https://whnt.com/2018/12/04/alabama-am-soon-switching-to-electric-buses/
[2] https://edap.epa.gov/public/extensions/nei_report_2014/dashboard.html#trend-db
[3] https://edap.epa.gov/public/extensions/nei_report_2014/dashboard.html#trend-db

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ALABAMA DEPARTMENT OF ECONOMIC AND COMMUNITY AFFAIRS

KENNETH W. BOSWELL
DIRECTOR

STATE OF ALABAMA

March 19, 2019

Ms. Christina Andreen, Staff Attorney
Southern Environmental Law Center
2829 2nd Avenue South, Suite 282
Birmingham, AL 35233

Dear Ms. Andreen:

RE: Alabama Volkswagen Environmental Mitigation Trust
Beneficiary Mitigation Plan Comments

Thank you for your interest in the Alabama Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan. We appreciate the information and comments you provided.

Your comments have been reviewed and it was determined that the Alabama Department of Economic and Community Affairs (ADECA) will remain technology neutral regarding the Volkswagen Settlement. Applicants will be able to choose the fuel source that best benefits their needs and goals as long as their proposed fuel type meets the requirements of the Volkswagen Settlement.

As for revising the distribution of funds to allow additional percentages for transit buses, school buses, and airport ground support, ADECA's starting percentages are primarily based on the amount of emissions each category is responsible for emitting in Alabama. ADECA then plans to distribute the funds in three rounds of funding allowing up to one-third of the funds to be distributed for each round. Based on the amount of responses submitted in the first round, distribution percentages may be redistributed prior to the second and third rounds of funding.

As for your additional recommendations, during the public listening sessions held prior to the release of the Draft Beneficiary Mitigation Plan, there was overwhelming response that all applicants should be required to provide match funding. ADECA has also included in the Beneficiary Mitigation Plan to support the DERA Program in order to ensure that Alabama receives the additional funding allowed by providing match funding. Additional information for the selection process for projects and reporting requirements for emission reductions will be included in the application process. These items are not required by the scope of the Beneficiary Mitigation Plan.

Again, thank you for your interest and comments. Should you need additional assistance, please email vwsettlement@adeca.alabama.gov.

Sincerely,

Kenneth W. Boswell
Director

KWB/MEN/sf

SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 205-745-3060

2829 2ND AVENUE SOUTH, SUITE 282
BIRMINGHAM, AL 35233-2838

Facsimile 205-745-3064

February 14, 2019

Via e-mail: **vwsettlement@adeca.alabama.gov**

Alabama Department of Economic and Community Affairs
P.O. Box 5690
Montgomery, AL 36103-5690

Re: Comments on the Alabama Proposed Beneficiary Mitigation Plan

Dear Sir or Madam:

The Southern Environmental Law Center (SELC), on behalf of Gasp, Inc., Energy Alabama, and itself (together, the "Organizations"), submits the following comments on the Alabama Department of Economic and Community Affairs (ADECA) draft Volkswagen (VW) Environmental Mitigation Trust (mitigation trust fund), Beneficiary Mitigation Plan (draft plan), which was posted on ADECA's website on December 27, 2018 and discussed at a public hearing on January 15, 2019.

The Southern Environmental Law Center is a non-profit environmental organization dedicated to the protection of natural resources, communities and special places in a six-state region of the Southeast. SELC advocates for clean air and clean transportation solutions at the federal, state, and local levels. Energy Alabama works to accelerate Alabama's transition to sustainable energy. Energy Alabama accomplishes its mission by educating at all levels, informing smart energy policy, building the next generation workforce, and providing technical assistance to deploy more sustainable energy. Gasp is a non-profit health advocacy organization with a mission to advance healthy air and environmental justice throughout Alabama through education, advocacy and collaboration.

We greatly appreciate the opportunity to submit these comments. The mitigation trust fund offers an exciting opportunity for Alabama to make meaningful advances toward the electrification of its transportation system. Electrification is essential to both improve local air quality and make essential reductions in greenhouse gases. As outlined in more detail below, we commend ADECA for proposing to spend the maximum allowable percentage of its mitigation trust fund allotment on electric vehicle charging stations, and we recommend that Alabama spend the remainder of its funding on electric transit and school buses, as well as electric airport ground support equipment. In addition, we recommend that Alabama prioritize funding for communities that have been disproportionately impacted by air pollution. Finally, we recommend that ADECA provide 100% funding for government-owned projects, maximize DERA funding, clarify how projects will be selected, and require emissions reduction information to be made publicly available.

I. Introduction

In considering how to spend its allotted amount from the mitigation trust fund, Alabama should prioritize projects that will directly mitigate the harm caused by Volkswagen's emissions-cheating scheme. The excessive and unlawful diesel emissions caused by VW's actions worsened air quality and heightened health risks in Alabama's cities. VW's deception has also increased Alabama's greenhouse gas emissions that contribute to climate change.

Diesel exhaust presents a serious health risk. Long-term inhalation can cause cancer and other lung damage, and even short-term exposure can cause irritation and inflammation, exacerbating allergies and respiratory illnesses such as asthma.[1] Diesel exhaust includes particulate matter, which can cause premature death in people with heart or lung disease; nonfatal heart attacks; irregular heartbeat; aggravated asthma; decreased lung function; and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.[2] Diesel exhaust also includes nitrogen oxides (NOx).[3] Like particulate matter, NOx causes and aggravates a range of respiratory diseases.[4] When exposed to sunlight in the atmosphere, NOx emissions go through chemical reactions to produce ozone (O_3) at ground level. While ozone is a normal part of the upper atmosphere, at ground level it is associated with a variety of detrimental human health and ecological effects.[5] Ozone is more commonly known as "smog."

Unfortunately, the number of people with asthma and other respiratory illnesses continues to climb. One in ten Alabamians now suffer from asthma, and 18.2% of youth in grades 9-12 have asthma.[6] On average, minorities and low-income communities suffer greater exposure to poor air quality than the general population.[7]

II. Allocation Recommendations

The Organizations offer the following recommendations for modifying the percentages allotted to various categories in the draft plan.

A. Dedicate the maximum of 15 percent of mitigation trust funds for electric vehicle charging stations.

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[1] U.S. Envt'l Protection Agency, Health Assessment Document for Diesel Engine Exhaust, EPA/600/8-90/057F ii (2002), https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=29060.
[2] *Health and Environmental Effects of Particulate Matter (PM)*, U.S. Envt'l Protection Agency, https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm (last visited Feb. 13, 2019).
[3] U.S. Envt'l Protection Agency, Health Assessment Document for Diesel Engine Exhaust, EPA/600/8-90/057F ii (2002), https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=29060.
[4] *Effects of NO_2*, U.S. Envtl. Protection Agency, https://www.epa.gov/no2-pollution/basic-information-about-no2#Effects (last visited Feb. 13, 2019).
[5] *Ozone Pollution*, U.S. Envtl. Protection Agency, https://www.epa.gov/ozone-pollution (last visited Feb. 13, 2019).
[6] *Alabama Asthma Program*, Ala. Dep't of Pub. Health, https://www.alabamapublichealth.gov/asthma/index.html (last visited Feb. 13, 2019).
[7] *Disparities in the Impact of Air Pollution*, Am. Lung Ass'n, http://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/disparities.html (last visited Feb. 13, 2019).

Light-duty vehicles are the single greatest contributor of NOx emissions in Alabama.[8] Electrification of the light-duty vehicle fleet is the most effective way to mitigate emissions from this source category. However, access to electric vehicle charging is a barrier that must be overcome for EV adoption to rapidly expand in Alabama. Therefore, we support ADECA's decision to allocate the maximum allowable percentage of its mitigation trust funds to electric vehicle charging stations (EVCS) and recommend that ADECA keep the 15% to EVCS as it is set forth in the draft plan.

1. Electric vehicle investment benefits the environment consistent with the directives of the mitigation trust.

Electric vehicles ("EVs") have two important environmental benefits. First, EVs produce fewer greenhouse gas emissions than their gasoline and diesel counterparts on a mile-by-mile basis, reducing greenhouse gas emissions.[9] When considering the life-cycle emissions of a vehicle—meaning the emissions associated with producing and manufacturing the vehicle parts, like batteries, in addition to the emissions it produces while driving—electric vehicles far outpace their traditional counterparts, resulting in as much as *50 percent fewer* greenhouse gas emissions.[10] In Alabama, when considering our sources of electricity, an all-electric vehicle emits an average of 3,931 pounds of CO_2 equivalent annually while a conventional vehicle emits an average of 11,435 pounds of CO_2 equivalent annually.[11]

Second, EVs produce no localized air pollution such as the particulate matter, NOx and ozone discussed above. As such, EVs can help to significantly improve air quality in urban areas and around sensitive populations where vehicular emissions would otherwise be high and concentrated.

EVs also provide opportunities to increase the electric grid's stability and efficiency, and make it easier to integrate renewable energy into the grid. For example, EV charging can be encouraged during off-peak times and EVs can potentially serve as electric storage.

Globally, EVs are on the rise. As battery technology has advanced, the price of batteries needed to power EVs has decreased dramatically over the past decade while energy density has increased almost as rapidly.[12] The global EV stock is now well past one million,[13] and we are seeing growth in Alabama. According to the Alliance for Automobile Manufacturers, there have

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[8] State of Alabama, Volkswagen Environmental Mitigation Trust Beneficiary Mitigation Plan, at 5 (Dec. 27, 2018), http://adeca.alabama.gov/Divisions/energy/vw/Pages/Mitigation-Plan.aspx [hereinafter Draft Plan]; Ala. Dep't of Econ. & Cmty. Affairs, Powerpoint Presentation: Volkswagen Settlement Ala. Beneficiary Mitigation Plan, Public Hearing, at p. 15 (Jan. 11, 2019).

[9] *See Emissions from Hybrid and Plug-In Electric Vehicles*, U.S. Dep't of Energy Alternative Fuels Data Center, https://afdc.energy.gov/vehicles/electric_emissions.html (last visited Feb. 13, 2019).

[10] Rachael Nealer, David Reichmuth, Don Anair, *Cleaner Cars from Cradle to Grave: How Electric Cars Beat Gasoline Cars on Lifetime Global Warming Emissions*, Union of Concerned Scientists, at 1 (Nov. 2015), https://www.ucsusa.org/clean-vehicles/electric-vehicles/life-cycle-ev-emissions#.WkPKh1WnGM8.

[11] *Emissions from Hybrid and Plug-In Electric Vehicles*, U.S. Dep't of Energy Alternative Fuels Data Center, https://afdc.energy.gov/vehicles/electric_emissions.html (last visited Feb. 13, 2019).

[12] International Energy Agency, Global EV Outlook 2016 at 5 (2016), https://www.iea.org/publications/freepublications/publication/Global_EV_Outlook_2016.pdf.

[13] *Id.*

been over 454 electric vehicles sold in Alabama in 2018 (through August), up from just 73 sold in 2011.[14] In total, there have been over 2,075 EVs sold in Alabama from 2011 to August 2018.[15]

2. Alabama should invest in a study of the most beneficial locations for charging infrastructure and utilize mitigation funds for a coordinated major project.

Unfortunately, while the growth of EVs continues in Alabama, there is a relative dearth of charging stations. For instance, there is only one publicly-available DC fast charging station in the Birmingham metropolitan area, located in Hoover, Alabama at Benton Nissan, and according to the EV charging website PlugShare, there are only seven in the entire state.[16] This makes it very difficult if not impossible for EV drivers to take trips around the state. In order for Alabama to encourage greater adoption of EVs, it is imperative that the state invest in additional charging stations. The mitigation trust fund can jumpstart the growth of the EV industry.

To ensure the most effective use of the mitigation trust fund, we suggest that Alabama invest in an analysis of where charging stations will be most beneficial. The study should include research into both where EVs are most used currently as well as identify the greatest barriers to widespread adoption and usage. The state should consider placing fast charging stations along major highways such as I-20, I-65 and I-59, as well as close to urban centers, multi-unit dwellings and workplaces. In addition, we recommend that environmental justice and equity be guiding concerns in determining where to local charging stations—considering both how we can use the installation of charging stations to protect vulnerable populations from pollution and how such stations can be installed to enable lower income communities to adopt EVs as their price continues to fall.

This study will help guide both the public and private sectors in the development of Alabama's charging network in the coming years. However, we suggest that the use of mitigation trust funds to establish charging infrastructure be focused on one coordinated major project rather than spread piecemeal throughout the state. Such a project should be well publicized to help raise the profile of EVs, and demonstrate Alabama's commitment to transportation electrification.

B. Invest in electrification of transit and school buses.

The draft plan proposes to allocate 25% of funds to cleaner transit buses and school buses.[17] We suggest that Alabama devote a greater share of funds to these uses and that these funds be primarily if not exclusively for electrification of these vehicles. For instance, in Colorado, the Governor has announced that all of the remaining VW settlement money

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[14] *Advanced Technology Vehicle Sales Dashboard*, All. of Automobile Mfrs., https://autoalliance.org/energy-environment/advanced-technology-vehicle-sales-dashboard/ (last visited Feb. 13, 2019).
[15] *Id.*
[16] *See* PlugShare, https://www.plugshare.com (last visited Feb. 13, 2019). This figure includes CHAdeMO and CCS chargers. There are several Tesla supercharger charging stations in Alabama, but those can only be used by Tesla drivers and are not compatible with other EVs.
[17] Draft Plan at 7.

(Colorado was allocated almost $70 million) will go toward supporting vehicle electrification, which includes transit buses, school buses and trucks.[18] In South Carolina, the trust beneficiary has chosen to spend 80-100% of its initial funding on buses (although it is not specifically for electric school buses, for which we advocate).[19]

The mitigation trust funds provide an incredible opportunity to reduce pollution around our most vulnerable population—children—through investment in electric school buses. Children are disproportionally affected by pollution.[20] Over 375,000 students in Alabama ride the bus to and from school every day,[21] and these students often congregate after school in lines waiting for their bus to arrive. While buses are idling during loading and unloading, children breathe harmful pollutants into their developing lungs. Students in our urban areas are particularly affected because they are already often exposed to impaired air quality due to the concentration of emissions sources.[22] By investing in electric school buses Alabama can not only improve the air our children breathe, but we will also reduce the cumulative effects of air pollutants that contribute to ozone depletion and climate change.

These buses should be electric. As described above, electrification of vehicles is important both for improving local air quality and for reducing greenhouse gas emissions. Electrification is the best way to move Alabama into a clean, energy independent future. As such, we urge the state to spend all of the remaining mitigation trust funds on either new or replacement electric vehicles and not on alternate-fueled engines such as new diesel and compressed natural gas. Electrification of vehicle fleets is a good investment for Alabama. Although the cheaper upfront costs for new diesel and alternate-fueled engines may be attractive, Alabama should consider the lifetime costs of these vehicles. While upfront costs may initially be higher than alternate-fuel vehicles, the lifetime costs, including fuel and maintenance, are significantly lower.[23] In addition, purchasing electric buses makes economic sense because the mitigation trust funds will contribute to covering that upfront cost, while subsequent fuel and maintenance costs will fall on state and its residents.

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[18] Colo. Exec. Order B 2019 002 at Part II.C., (Jan. 17, 2019), https://www.colorado.gov/governor/sites/default/files/b_2019-002_zev.pdf.

[19] S.C. Dep't of Ins., *Beneficiary Mitigation Plan for the State of South Carolina under the Volkswagen Environmental Mitigation Trust* at 9 (Dec. 6, 2018), https://doi.sc.gov/DocumentCenter/View/11323/Beneficiary-Mitigation-Plan.

[20] J. Dixon, *Kids need clean air: air pollution and children's health,* Fam. Community Health (4):9-26 (Jan. 2002), https://www.ncbi.nlm.nih.gov/pubmed/11772346; *Clean School Bus*, U.S. Envt'l Protection Agency, https://www.epa.gov/cleandiesel/clean-school-bus (last visited Feb. 13, 2019).

[21] Morgan Young, *Alabama schools enforce law to protect more than 375,000 bus riders*, WSFA12 News (Aug. 9, 2018, 10:56 PM), http://www.wsfa.com/story/38853922/alabama-schools-enforce-laws-to-protect-more-than-375000-bus-riders/.

[22] *See About Urban Air Toxics*, U.S. Envt'l Protection Agency, https://www.epa.gov/urban-air-toxics/about-urban-air-toxics (last visited Feb. 13, 2019).

[23] *See, e.g.*, Marcacci, Silvio, *Electric Buses Can Savel Local U.S. Governments Billions. China's Showing Us How It's Done*, Forbes (May 21, 2018, 7:30 AM), https://www.forbes.com/sites/energyinnovation/2018/05/21/electric-buses-can-save-americas-local-governments-billions-chinas-showing-us-how-its-done/#28ec45125f78; Muoio, Danielle, *The 'Tesla of Buses' Just Set a Range Record that Could Spell the End for Diesel Buses*, Business Insider (Sept. 19, 2017, 10:11 AM), https://www.businessinsider.com/proterra-sets-1000-mile-range-record-2017-9.

We recommend that replacement of new electric bus purchases be focused in the urban areas most affected by the VW emissions-cheating scheme. Diesel buses disproportionately impact urban disadvantaged communities, meaning that these communities stand to benefit the most from investments in electrification. Additional study and modeling should be performed to see where fleet turnover could have the greatest impact on both greenhouse gas emission reductions and improvements to local air quality.

Similar to our recommendation above with regard to EV charging stations, we recommend that in pursuing transit and school bus replacements Alabama focus its resources on one or two large programs that will have a strong impact and help raise the profile of electrification and Alabama's commitment to a clean energy future. Directing funds to significant fleet replacements, rather than spreading the funds around in a less impactful way will also ensure maximization of the investment through economies of scale, reductions in administration costs, and shared utilization of associated infrastructure such as charging stations.

C. Invest in electrification of airport ground support.

While we suggest that most, if not all the settlement funds be spent on EV charging stations and electric bus purchases and replacements, there is some benefit to directing a small portion of the funds toward the electrification of airport ground support equipment. Currently, ADECA proposes to allocate 4.5% of the funds ($0.97M) toward airport ground support equipment.[24] We support this amount of funding.

NOx emissions directly impact the formation of regional ozone. Reducing the most polluting vehicles, during the most reactive times of the day, has proven crucial to reducing the formation of overall ozone in our urban areas. Funding electric conversion of tier 0-2 diesel powered ground support equipment could provide the largest NOx reductions for the dollar spent, and reduce operating and maintenance costs more so than diesel or gas replacements.[25]

A recent project in Charlotte, North Carolina, demonstrates the value in investing in the elimination of mobile source pollution from ground support equipment at the airport. In Charlotte, over $650,000 was invested to replace 65 pieces of airport ground support equipment with electric equipment. Thus far, this initiative has yielded over 227 tons in NOx reductions.[26] Over the life of the equipment, the project is expected to reduce NOx by over 460 tons. The program has had a significant impact on reducing regional ozone formation and led to a designation of attainment for ozone in the Charlotte region this year.

Here in Alabama, we are on our way to making our airport ground support equipment cleaner. At the Birmingham Shuttlesworth International Airport, the Birmingham Airport

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[24] Draft Plan at 7.
[25] Airlines for Am., Airports Council Int'l, Fed. Aviation Admin., & Nat'l Ass'n of State Aviation Officials, *Volkswagen Settlement, Applicability of Funds to Airports and Airlines* (2017), https://www.faa.gov/airports/environmental/vw_settlement/media/vw_settlement_presentation.pdf.
[26] *Grants to Replace Aging Diesel Engines, Quarterly Project Summary, 2018 – 4th Quarter*, Mecklenburg County Air Quality, at 14, https://www.mecknc.gov/LUESA/AirQuality/MobileSources/Documents/GRADEProject Summary.pdf (last visited Feb. 13, 2019).

Authority recently installed 27 electric charging stations that will support ground-service equipment.[27] Including funding for airport ground support equipment will help continue the push toward using electric vehicles at the airport.

III. Additional Recommendations

A. Allow government entities to receive 100% of funds for electric vehicles.

ADECA's draft plan allows government owned eligible buses to receive up to 80% of the cost of repowering a vehicle with a new all-electric engine, and up to 80% of the cost of a new all-electric vehicle. While the Organizations applaud ADECA for providing a higher percentage for electric vehicles than new diesel buses, we recommend that ADECA cover 100% of the costs of electrifying government owned buses, either by repowering the bus or through purchasing a new bus.

The mitigation trust fund allows coverage of up to 100% of the funding for Government owned, eligible projects, for both large trucks (category 1) and buses (category 2). For non-government owned equipment, a match is required. The term "Government" means "a State or local government (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds) . . . ."[28]

Many of our municipalities and school districts struggle to make ends meet. This is particularly true in low-income communities. They simply cannot compete with private companies who are able to match funds to receive the mitigation trust funds. To ensure the funds are used to mitigate the harm caused by VW's actions, it is imperative that ADECA fully fund projects in communities that would not be able to afford the vehicles otherwise.

B. Maximize DERA funding.

The Diesel Emissions Reduction Act ("DERA") Clean Diesel Funding Assistance Program provides funding to eligible parties[29] for projects that reduce emissions from existing diesel engines.[30] We commend Alabama for allocating 4.5% of the Mitigation Trust funds to the DERA program. By using VW settlement funding and DERA program funds, Alabama could receive additional funding for electrification of its mobile sector. VW settlement funds may be used for the DERA Program's voluntary non-federal match option. We urge ADEM to apply for

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[27] Press Release, Birmingham Airport Authority, BHM adding electric chargers for ground support vehicles, https://www.flybirmingham.com/bhm-adding-electric-chargers-for-ground-support-vehicles/ (last visited Feb. 13, 2019)

[28] Envtl. Mitigation Trust Agreement for State Beneficiaries, App. D-2 at 12, *United States v. Volkswagen AG* App. D-2, No. 3:16-cv-00295 (N.D. Cal. Oct. 2, 2017).

[29] *See Eligible Applicants*, U.S. Envt'l Protection Agency, https://www.epa.gov/cleandiesel/clean-diesel-national-grants#applicants (last visited Feb. 12, 2019).

[30] *Diesel Emission Reduction Act (DERA)*, U.S. Envt'l Protection Agency, https://www.epa.gov/cleandiesel/learn-about-clean-diesel#dera (last visited Feb. 12, 2019); *see also Eligible Uses of Funding*, U.S. Envt'l Protection Agency, https://www.epa.gov/cleandiesel/clean-diesel-national-grants#funding-costshare (last visited Feb. 12, 2019).

program funding through DERA from the EPA, and then use Mitigation Trust funds to participate in the DERA voluntary match program. As a result, the EPA will increase their DERA Program funding by an additional 50%.[31]

Because the goal of the DERA program is to reduce NOx emissions, many of the eligible programs are comparable to those outlined in the VW Settlement. For example, funds could be used to assist low-income school districts to purchase electric buses when they are in need of additional buses. Similarly, DERA funds could be used to assist local authorities in replacing diesel buses with electric ones. Applying for DERA funds is an easy way to extend the impact of Alabama's share of the Mitigation Trust Funds.

C. Clarify the selection process for projects.

There is no information in the draft plan regarding how ADECA will select projects that will receive VW funds. If ADECA moves forward with the draft plan without providing clarification on the selection process, it should open a new public comment period once it determines the criteria for selection.

The Organizations recommend that priority be given to projects that will provide the most benefit over the lifetime cost of the project, meaning that they will offset the most air pollution on a NOx lb/$ ratio. Also, the Organizations request that ADECA prioritize funding in disadvantaged urban communities, particularly those that have been disproportionately impacted by air pollution.

D. Require public reporting of emission reductions.

The Organizations ask ADECA to publicly track and report emissions reductions that result from projects funded through the mitigation trust funds. Doing so will show the public that the trust funds are being used to reduce air pollution throughout Alabama. Electrification provides a benefit in that most electric vehicle chargers meter the energy consumed at the charger. Metering therefore allows ADECA to track the energy consumption of chargers it has funded and to quantify the related air quality improvements.

Investing in projects that make data publicly available further encourages private investment in projects that have quantifiable benefits. It also provides interested members of the public a basis for which to make decisions for their own benefit. We believe measurable results can provide substantial support for public education efforts of organizations and government across Alabama.

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[31] *Frequently Asked Questions (FAQ) For Beneficiaries to the Volkswagen Mitigation Trust Agreements*, Air Enforcement Division, Office of Enforcement and Compliance Assurance, U.S. Envtl. Protection Agency, at 6 (Oct. 2017), https://www.epa.gov/sites/production/files/2017-10/documents/faq-ben.pdf.

IV. Conclusion

We believe the VW Mitigation Trust Fund provides an important opportunity for Alabama to raise the profile of electrification in the State. We hope the use of these funds are just the beginning of investment in electrification in our state and our path to a cleaner future. Thank you for the opportunity to submit these comments. Please feel free to call me at 205-745-3060 with any questions or to discuss these ideas in more detail.

Respectfully submitted,

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