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May 8, 2018

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From: frank@medicaire.net
Sent: Wednesday, April 25, 2018 10:16 AM
To: DEQ VW Settlement
Cc: blavelle@medicaire.net
Subject: Subject: VW Settlement Comments

Beneficiary Mitigation Plan for Volkswagen Settlement

Comments: April 25,2018

Use of Volkswagen settlement funds for Medidocks to advance Ambulance/Emergency Vehicle Idle Reduction:

Idling of ambulances is a significant contributor to air pollution, particularly as the majority of the idling occurs adjacent to healthcare facilities with their sensitive populations exposed. Reducing this idling provides a direct air quality improvement. Problematic to not idling the ambulance is the fact that interior temperatures and medical equipment must be maintained in a state of readiness, requiring power. My firm's product, the Medidock, provides a real solution to this problem by allowing an ambulance to remain 'mission-ready' without idling.

Our system is a kiosk, installed at Emergency Departments and other medical facilities and at remote locations where ambulances are 'posted' to improve response times and improve air quality. The Medidock requires no special equipment to be installed onboard the vehicle – any & all ambulances can use it. In addition to electrical power for the onboard emergency medical equipment it also provides vehicle interior climate control - without the need to run the engine. Our units ease of operation encourages EMT's to actually use the machines, resulting in fuel and maintenance savings for the vehicle operators and environmental benefits for everyone. On our website www.medicare.net you will find a study done by the Ozone Transport Commission (OTC) which indicates a significant NOx reduction as noted from sites in VT & NH.

Medidocks are presently successfully operating in northern New England and locations in the Midwest.

While vehicle idle reduction is not specifically indicated in the settlement, augmentation of DERA is, allowing a pathway for funding this important public health/air quality improvement.

I urge you to consider earmarking funding for the Medidock in the final Beneficiary Mitigation Plan. Thank you for your consideration.

Link to video : <https://youtu.be/bdZaEOYNbhw>

Frank Podgwaite
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www.medicare.net

"The ambulance idle reduction solution"

"Exclusive Distributors of the Medidock"

From: Britta K Gross <britta.gross@gm.com>
Sent: Thursday, May 03, 2018 8:32 AM
To: DEQ VW Settlement
Subject: GM Comments relative to the Oklahoma Proposed VW Beneficiary Mitigation Plan
Attachments: Oklahoma - Proposed VW Beneficiary Mitigation Project - General Motors comments_3 May 2018.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

To the Oklahoma Department of Environmental Quality/Air Quality Division

Attention: Heather Lerch

Please find attached General Motors' comments relative to the Proposed Beneficiary Mitigation Plan. We appreciate Oklahoma's efforts and strongly support the DEQ's proposal to firmly allocate the maximum allowed 15% of the fund to increase the availability of much-needed electric vehicle (EV) charging infrastructure across the state.

GM greatly appreciates Oklahoma's forward-looking commitment to support the strategic transition to transportation electrification and all efforts to help drive this emerging market!

Regards, Britta

Britta Gross
Director, GM Advanced Vehicle Commercialization Policy
586-596-0382
britta.gross@gm.com



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GENERAL MOTORS

Britta K. Gross Director
Advanced Vehicle Commercialization Policy
Environment, Energy & Safety Policy

General Motors Global Headquarters
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3 May, 2018

Heather Lerch
OK Department of Environmental Quality
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101
VWSettlement@deq.ok.gov

Subject: GM Comments relative to the Oklahoma Proposed VW Beneficiary Mitigation Plan

General Motors LLC (GM) appreciates the opportunity to provide input on the proposed use of funding in the state's VW Beneficiary Mitigation Plan and strongly supports the Department of Environmental Quality (DEQ) proposal to allocate the maximum 15% of the fund (equating to approximately \$3mil) to increase the availability of critically-needed electric vehicle (EV) charging stations that will drive a forward-looking technology and mobility strategy for the state. Such a vision will be required to attract EVs and even more advanced transportation technologies to the state, such as self-driving EVs in shared mobility applications, that are key to future mobility. There are almost 2,500 EVs registered in Oklahoma today and only 4 DC fast-charge station locations in the state (all located in/around Oklahoma City), and in order to grow the EV market and attract increasingly advanced mobility solutions, Oklahoma should commit to developing a strategy for EV charging deployment across the state that is supported by a corresponding investment in a charging infrastructure network that will address consumer and industry concerns.

EV charging infrastructure today has not attracted sufficient investment to establish a compelling foundation of EV charging stations. This market will become more viable and competitive over time, but this early market currently requires additional investment to close the infrastructure gap and establish a network of charging stations that is highly visible to consumers and drives consumer-confidence in the ability to drive EVs anywhere in the state. According to NREL's National PEV Infrastructure Analysis* (September, 2017), Oklahoma could be home to an estimated 97,000 plug-in EVs by 2030, requiring 230 DC fast-charging stations, 2,800 workplace chargers, and 2,000 additional public Level 2 charge stations. This need requires an up-front strategy and firm investment plan to ensure that Oklahoma is prepared for the mobility transformation. The ability to introduce and grow

these advanced electric mobility services relies on a robust foundation of EV charging infrastructure, especially DC fast-charging.

A comprehensive vision for EV charging infrastructure in Oklahoma should ensure that the resulting EV charging infrastructure is as effective and visible to consumers as possible. It's important to recognize that the quality of infrastructure placement is generally more important than the quantity of EVSEs deployed. This means it is key to establish an overall vision and strategy for the placement of EV charging infrastructure, based on sound expert stakeholder input, that will result in an overall compelling "story" that will change consumers' perceptions and convince them that EV charging infrastructure is everywhere it needs to be.

Automakers have made enormous investments in the electrification of transportation – GM alone has invested billions of dollars to develop electrification technologies, including the state-of-the-art Chevrolet Volt and Chevrolet Bolt EV, which has swept the industry's most prestigious car awards, including North America Car of the Year, Motor Trend's® 2017 Car of the Year, MotorWeek's 2017 Drivers' Choice "Best of the Year" Award, and Green Car Journal's Green Car of the Year. The Bolt EV is the industry's first affordable, long-range EV with an EPA estimated range of 238 miles-per-charge, and is available now at Chevrolet dealers across Oklahoma. This advanced technology will require more widespread charging infrastructure to convince consumers that EVs can be driven anywhere they need to go. Thus, the urgency to rapidly expand EV charging infrastructure in Oklahoma.

While the majority of all EV charging today is done at the home, there are still critical infrastructure needs not met by single-family home charging. And to maximize the impact of limited state funds, it is important to invest strategically. GM would prioritize today's key infrastructure needs as follows:

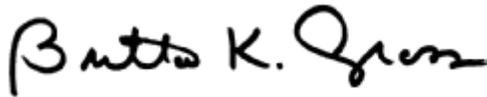
1. **Highway corridor DC fast-charging** most visibly inspires consumer confidence in the driving range, and practicality, of EVs. A 2016 survey of 2,500 consumers by Altman Vilandrie & Company found the top reason customers gave for not wanting to purchase a plug-in electric vehicle was a perceived lack of charging stations (85%). Highly visible corridor EV charging (SAE industry standard) can help address this consumer perception issue.
2. **Workplace EV charging** creates an EV "showroom" that very effectively grows EV awareness among corporations, and employees of these corporations. According to US DOE data, workplace charging results in employees 6X more likely to purchase an EV than employees at companies not offering workplace charging.
3. **Multi-unit dwelling EV charging** provides an important opportunity to expand EV adoption to consumers residing in townhomes, condominiums, and apartments, who may not have access to a "home" charger every evening. This is currently an untapped segment of potential EV buyers. This need can be met by Level 1 or Level 2 charging directly at the multi-unit dwellings, or by neighborhood DC fast-charge hubs that can serve these residents.

4. **Public EV charging at key destinations** is also important to increase the practicality of EVs and the number of places an EV can go, with a special focus on destinations typically outside a consumer's normal daily driving patterns (e.g. airports, beaches, hotels, resorts, etc.).

EV charging infrastructure is vital to the growth of the EV market and will lead to long-lasting emissions reductions that increase over time as the market expands. And Oklahoma's low electricity prices mean that electric vehicles are an important economic driver for Oklahoma. Oklahoma can also increase the impact of these investments by directly engaging electric utilities in the strategic planning of EV infrastructure to ensure the most cost-effective and grid-responsible EV charging solutions.

The VW Environmental Mitigation Trust is an opportunity to invest in forward-looking infrastructure that lays a much-needed foundation for EV market growth and will help attract even more advanced transportation technologies to Oklahoma. GM greatly appreciates Oklahoma's commitment to support the strategic transition to transportation electrification and all efforts to help drive this emerging market.

Sincerely,



Britta K. Gross, Director
Advanced Vehicle Commercialization Policy
britta.gross@gm.com
(586) 596-0382

* NREL National PEV Infrastructure Analysis (Sept 2017) -- <https://www.nrel.gov/docs/fy17osti/69031.pdf>

From: larry.hopper@okc.gov
Sent: Thursday, May 24, 2018 11:06 AM
To: DEQ VW Settlement
Subject: Public Comment Submittal Regarding Oklahoma's Beneficiary Mitigation Plan (BMP) for the VW Settlement
Attachments: COTPA Comments May 24 Final-ODEQ VW Mitigation Plan-May 2018.docx

The Central Oklahoma Transportation and Parking Authority (COTPA) is pleased to submit these final comments (attached) to the Oklahoma Department of Environmental Quality (ODEQ) regarding Oklahoma's Beneficiary Mitigation Plan (BMP) for Volkswagen Environmental Mitigation Trust funding. These resemble but supersede the May 8 COTPA comments. COTPA appreciates how the Plan has come together, and believes the approximately \$20.9m will be quite impactful.

Please let me know if you should have any questions.

Cordially,

Larry Hopper, AICP
Principal Planner/Planning Manager

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EMBARK
300 SW 7th Street, Oklahoma City, OK 73109

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COTPA Comments for Oklahoma's Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust Funding

The Central Oklahoma Transportation and Parking Authority (COTPA) is pleased to submit these final comments to the Oklahoma Department of Environmental Quality (ODEQ) regarding Oklahoma's Beneficiary Mitigation Plan (BMP) for Volkswagen Environmental Mitigation Trust funding. COTPA appreciates how the Plan has come together and believes the approximately \$20.9m will be quite impactful.

Our comments are brief and listed below and supersede the May 8 COTPA comments.

Comment for Transit Vehicles:

It should be noted that transit bus replacements with CNG buses or all-electric buses can have positive multiplier effects beyond just the buses' effects. The multiplier is on NOX and other emissions levels and in reducing vehicle miles traveled (VMT) due to how transit facilitates fewer cars and other vehicles being on the road, and because of people taking the bus instead of taking the high-polluting short trips in their cars and trucks. The typical transit bus in Oklahoma County, for example, is running on the road about twelve hours per day, six days a week and that seems very high compared to most vehicles in most categories! It will have a high impact. Not only does the replacement of a higher-emission bus help air quality due to that bus's performance, but so does the absence of vehicles on the road otherwise used by the numerous transit passengers. Ridership trends at EMBARK further reinforce the promise of multiplier benefits. The ODEQ is urged to add score points or to the "% NOx reductions" due to this inherent ability of transit buses. Also, the special charger equipment for buses and other heavy duty vehicles should be made eligible in this "Sector."

Comment on CNG and Electric Bus Set-asides

A minimum set-aside reserved or earmarked for transit is urged, such as a majority of the "On-Road Heavy Duty Vehicles" Sector funds from the "On-Road Class 4-8" category (not including school buses). This is especially in light of transit's multiplier effects. Transit's potential benefits may suggest the need to increase the On-Road Sector to 25-30% of the BMP funds, perhaps slightly reducing categories such as the Off-Road and Reserve Flex sectors.

Comment on Repowering

The funds should be allowed to be used to repower (replace engines of) or modify engines of heavy duty vehicles and of ferry boat vessels for transit that meet national age, class, and other national parameters. For example, the Settlement funds should allow even the replacement of older CNG engines with newer, lower polluting CNG engines and be specifically mentioned as an example. The addition of retrofit diesel particulate filter (DPF) equipment on post-2008 diesel vehicles that had none should also be allowed.

Comment on Public Charging Infrastructure

The public charging infrastructure for ZEV's is eligible in one Category. Could the Plan also specifically allow for the all or part of the costs of supply line upgrades of on-site infrastructure that feeds the chargers to be eligible for funding and made a priority? Parking garages, for example, can be quite costly to retrofit for chargers due to the need for conduit, concrete boring, panel boxes, upgraded electrical systems and so forth. Parking lots may need also upgraded electrical systems, and on-street chargers for light duty vehicles will also have supply line needs. All this could fit in the "On-Road non-Diesel Light Duty Vehicles" Sector.

Comment on the Timeline for Trust Funds and Leverage as Match

In regard to VW Project administration, please help the public know approximately when entities may be able to start applying for the trust funds. Also, please allow adequate time (months or years) that a Settlement funds recipient will have to either obligate or expend the trust funds. Regarding transit buses, it can take 15-24 months to actually get delivery on a bus once the manufacturer has been issued a notice to proceed.

Another suggested part of Project administration is to give more priority to Sectors which can leverage federal match funds, especially for transit buses. Federal grant examples are the FTA 5339(b) program, FTA 5307 program, 5339(c) program (known as Low-No) and other federal grant programs.

May 23, 2018

COTPA Comments for Oklahoma's Beneficiary Mitigation Plan for the Volkswagen Environmental Mitigation Trust Funding

The Central Oklahoma Transportation and Parking Authority (COTPA) is pleased to submit these comments to the Oklahoma Department of Environmental Quality (ODEQ) regarding Oklahoma's Beneficiary Mitigation Plan (BMP) for Volkswagen Environmental Mitigation Trust funding. COTPA staff will be present at the May 8, 2018 meeting.

COTPA appreciates how the Plan has come together and is grateful for how so much of what we desired is in the proposed BMP. The approximately \$20.9m will be quite impactful.

Our remaining comments are brief and listed below.

Comment for Transit Vehicles:

It should be noted that transit bus replacements with CNG buses or all-electric buses can have positive multiplier effects beyond just the buses' effects. The multiplier is on NOX and other emissions levels and in reducing vehicle miles traveled (VMT) due to how transit facilitates fewer cars and other vehicles being on the road, and because of people taking fewer of the high-polluting short trips in their cars and trucks. The typical transit bus in Oklahoma County, for example, is running on the road about twelve hours per day, six days a week and that seems very high compared to most vehicles in most categories! Not only does the replacement of a higher-emission bus help air quality due to that bus's performance, but so does the absence of vehicles on the road otherwise used by the numerous transit passengers. Ridership trends at EMBARK further reinforce the promise of multiplier benefits. The ODEQ is urged to add score points or to the "% NOx reductions" due to this inherent ability of transit buses. Also, the special charger equipment for buses and other heavy duty vehicles should be made eligible in this "Sector."

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Comment on Repowering

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May 8, 2018

From: Allie Wurtz <awurtz@kewconsultants.com>
Sent: Tuesday, May 08, 2018 8:34 PM
To: DEQ VW Settlement
Subject: VW Comment
Attachments: VW_Tier4Diesel_Infographic_Switch_Final.pdf

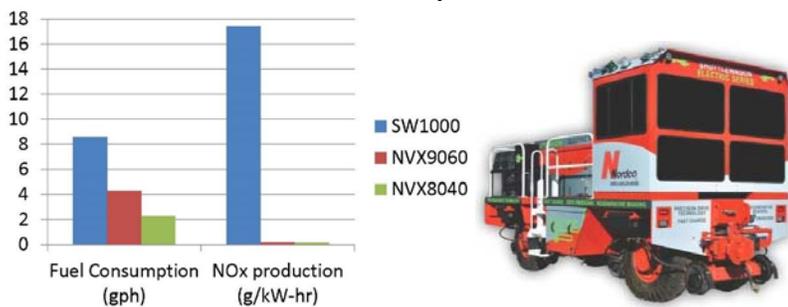
Please consider allocating a significant amount of funding towards freight switcher locomotive projects as they are **the most cost-effective per dollar spent per tons of NOx reduced**. The attached document demonstrates the cost effectiveness in detail.

In addition, please consider the all - electric rail car mover, as referenced on pages 24-26 in the NASEO Toolkit (link below), as an eligible mitigation action under the category of freight switcher.

<https://www.naseo.org/Data/Sites/1/naseo-vw-beneficiary-mitigation-plan-toolkit-final.pdf>

Recently, hybrid and all-electric mobile railcar movers have been introduced into the North American market. These railcar movers can work both on and off of railroad tracks and are available in all-electric and hybrid-electric models. Figure 10 illustrates fuel consumption and NOX emissions from two hybrid- electric railcar movers compared to an older diesel freight switcher.

Figure 10: Hybrid-Electric Fuel Consumption and Emissions Compared to Older Diesel Switcher⁶⁸ (SW1000: Conventional diesel; NVX9060: hybrid; NVX8040: all-electric)⁶⁹



Thanks for your consideration.

Allison Wurtz
Principal Grant Writer & Partner
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c: 815.530.3083

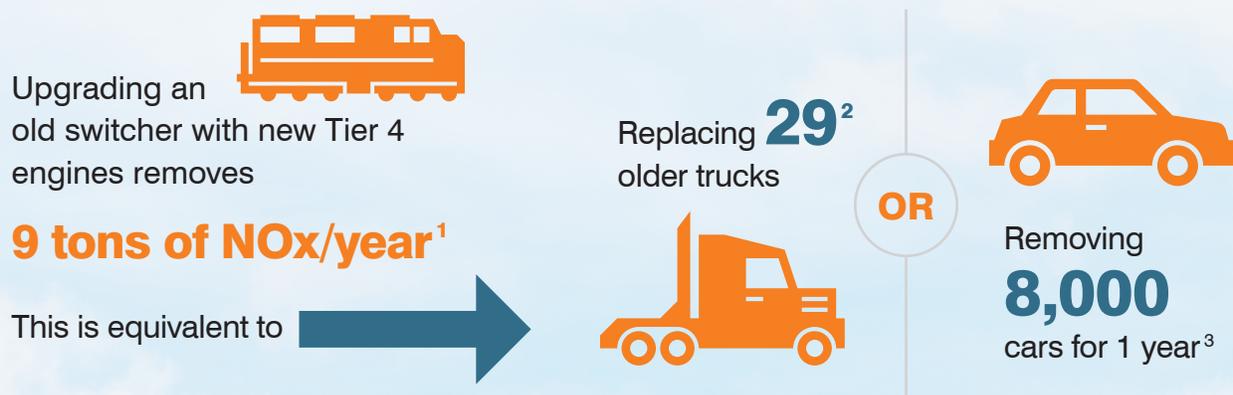


The most cost-effective upgrades make the biggest health impact

New Tier 4 engines for switchers reduce NOx emissions by 95%

The \$2.9 billion VW Environmental Mitigation Trust provides funding to upgrade older vehicles and equipment to rapidly reduce nitrogen oxide (NOx) emissions, which contribute to hazardous smog pollution. Upgrading just one of the oldest, dirtiest switchers is like taking tens of thousands

of passenger vehicles off the road per year, bringing substantial health benefits to at-risk communities. With states now deciding how to invest these funds, repowering these older switchers with cleaner Tier 4 engines is a game-changer for delivering immediate and cost-effective air quality benefits.



Upgrading old engines means cleaner air for all

EPA estimates that by 2020, only 5% of switcher engines will be replaced with cleaner Tier 4 engines. The VW Environmental Mitigation Trust provides a rare opportunity to retire the oldest diesel engines still in operation, which can last 70 years or longer. Tier 4 engines will deliver cleaner, healthier air faster to at-risk communities. These new engines also improve fuel efficiency, which reduces CO₂ and black carbon emissions, two important greenhouse gas pollutants.

Switcher projects are a better value



1 ton of NOx reduction costs



**Statement of the Oklahoma Transit Association
Before the Oklahoma Department of Environmental Quality
Regarding the Oklahoma Proposed Volkswagen Beneficiary Mitigation Plan
Tuesday, May 8, 2018**

Good afternoon. I am Ted Rieck, General Manager of Tulsa Transit and Chair of the Advocacy Committee for the Oklahoma Transit Association. The Oklahoma Transit Association represents the urban, small urban, suburban, rural and tribal public transit agencies in the state. Those agencies provide more than 10 and a half million rides per year across Oklahoma.

Thinking about public transit, it is essential to remember that communities are important to the fabric of our state and nation. They're not just spots on a map, or collections of random people. Communities are places where people share common connections with each other. Choices on where to live, work, learn, meet, and play grow with the connections created. And with strong connections come economic opportunities and vibrant communities.

It is an undeniable fact that public transit drives growth, attracts development and builds greater value along its corridors. So restaurants find diners, landlords find renters, individuals find medical care, families find local pharmacies and shopping, employers attract employees and those employees find good jobs and valuable places to live.

Public transportation powers community growth through driving economic development and revitalizing neighborhoods. Let's look at four important economic facts:

- For every dollar communities invest in public transportation, approximately \$4 is generated in economic returns.
- Every \$10 million in capital investment in public transportation yields \$30 million in increased business sales.
- In recent years, residential property values performed 42 percent better on average if they were located near public transportation with high-frequency service.
- Nationwide, public transportation is a \$57 billion industry that puts people to work – directly employing nearly 400,000 people and creating hundreds of thousands of private-sector jobs.

For a state and a nation that has always sought out ever-smarter ways to connect and thrive, what has been true for a century is true today – where public transportation goes, community grows.

America's public transportation systems play a vital role in creating a healthier nation. In Oklahoma, public transit not only provides needed transportation options for all Oklahomans both urban and rural, but the system also reduces traffic congestion and emissions. Providing significant environmental benefits by reducing smog-producing pollutants and greenhouse gases, public transportation is helping to meet state and national air quality standards as it produces about half as much carbon dioxide and nitrogen oxide per passenger mile as private vehicles.

That brings us to why we are all here today – to review the proposed Oklahoma Volkswagen Beneficiary Mitigation Plan – the BMP. Or more importantly to discuss ways to reduce nitrogen oxide – or NOx –

emissions in Oklahoma through effective use of funds from the Environmental Mitigation Trust that was created under the Volkswagen settlement

The proposed Oklahoma BMP expresses the intent of the state of Oklahoma to accept the nearly \$21 million from the Volkswagen State Mitigation Trust for this purpose. In fact, the heading of page one of the proposed BMP states that the goal of the BMP is to cost-effectively reduce mobile NOx emissions throughout the state.

There are two ways to evaluate the proposed BMP, and whether the results meet the goal depends on the approach used.

If the goal of the proposed BMP is to provide a way to accept \$21 million from the VW settlement and divvy it up between some players in the state to curb some NOx emissions, then the BMP hits the mark and achieves the goal. Meeting adjourned; let's go home.

On the other hand, if the goal of the BMP follows the spirit and purpose of the Mitigation Trust to fund actions to fully mitigate excess NOx emissions, then the proposed BMP misses the mark and fails to achieve the goal.

As drafted, the proposed plan provides that 20 percent of the dollars will be used for the On-Road Program. This portion includes: class 8 local freight trucks and drayage trucks, class 4 through 7 local freight trucks; and class 4 through 8 shuttle or transit buses. School buses are not included in this portion as diesel school bus projects are included in the 10 percent of funding allocated for the DERA portion, and a separate 20 percent has been set aside solely for an Alternative Fuel School Bus Program.

Let's be clear as to the size of this small pool of money. The eligible recipients of the On-Road Program will be competing for about \$4.1 million. Compounding the problem created by the small amount of dollars available in this category is the fact that Appendix D-2 of the settlement allows for 100 percent of the costs of new purchases and repowering options to be paid by the trust funds.

Take a look at this example – four major transit agencies in Oklahoma could look to the BMP for funding to replace diesel engine buses with electric buses. Those four agencies are Tulsa Transit, EMBARK in Oklahoma City, the Lawton Area Transit System, and CART in Norman. Criteria wise these are all prime targets. The number one county for mobile NOx emissions, Oklahoma. The number two county, Tulsa. The number three county, Cleveland. And the number eight county, Comanche. And all are in the number one mobile source NOx emissions category, on-road diesel heavy-duty vehicles.

If these four agencies apply through the BMP, clearly they would win the funding over the other applicants, as they will provide the most effective NOx emissions reduction in the targeted areas. And if they use the ability provided in Appendix D-2 of the settlement to achieve 100 percent funding, that means the available 20 percent of the funds will only provide four buses. As little as one per agency and that's if they receive all the 20 percent of the On-Road category. Since none of them currently use electric buses, the charging infrastructure does not exist. DEQ would be challenged to prove the cost-effectiveness of an expenditure of funds for such infrastructure for one bus per agency.

Due to the current percentage allocated to the On-Road program and the cost of transit vehicles, the conclusion must be drawn that the proposed BMP fails to achieve the goal of mitigating excess NOx emissions in a cost-effective manner.

There are, however, ways to achieve this goal by using the BMP and the VW settlement funds as leverage for other available dollars. An example is the Federal Transit Administration's Low or No Emissions Program. This year the Low-No Program is funded at \$84 million, a one-time level higher than what is authorized under the FAST Act and some \$27 million more than last year. This increased funding was a result of the recent congressional budget deal, and is not expected to remain this high in the out years. These grant applications are due in mid-June. The time is right to take advantage of this potential windfall.

The Low-No program requires a 15 percent local match, though grants that exceed that level are more likely to be funded. If \$5 million from the Oklahoma BMP were used as a 25 percent match toward the FTA Low-No Program, those four agencies in the earlier example could see as many as 20 new electric buses and a reason to invest in the charging infrastructure. Now that would result in meaningful, cost-effective NOx emissions reduction in the state of Oklahoma.

This is just one example of how to leverage funds using the BMP to provide a cost effective way of mitigating NOx emissions in Oklahoma. There are others that could be investigated as well.

It is important to quickly modify the BMP in order to provide the opportunity to leverage the Low-No program and other funding mechanisms. With an unusually large sum of money available in the very short term, public transit agencies in a collective effort need to be able to submit grant applications knowing the BMP funds are available and secure. And they need to be able to do that by early June.

The Oklahoma Transit Association recommends the following three changes to the proposed BMP:

1. Revise the BMP to set aside \$5 million for public transit agency providers. This is a similar approach taken for school buses, but still at a level less than the total school bus portion of the BMP. It must be noted that diesel transit buses spend more time on the road and a more equitable earmarking of funds between school and transit buses will achieve greater NOx emissions reduction.
2. Work with the Oklahoma Transit Association, its agencies, and – where beneficial – other state agencies like ODOT to develop a state-wide plan and grant approach to leverage the BMP dollars to cause the most cost-effective NOx emissions reduction statewide. This should not be constrained to only the large bus systems as provided in our example since rural transportation can also achieve the BMP's goals for projects that occur outside of target counties that bear a disproportionate share of the air pollution burden as detailed in the BMP.
3. Revise the BMP to set aside the largest portion of Category 9 for public transit electric recharging infrastructure.

By revising the proposed BMP with these three actions, DEQ will have developed a plan that will cause meaningful reduction in NOx emissions, and will have done it in a cost-effective manner that utilizes all available funding sources. Failing to move quickly to implement these three actions will mean the lost opportunity of additional dollars to help in this fight to reduce NOx emissions in Oklahoma.

The Oklahoma Transit Association looks forward to working with DEQ – starting now in an expedited fashion – to revise the BMP to ensure the VW settlement trust funds are used in a cost-effective, meaningful manner that provides real reduction of NOx emissions throughout the state.

Thank you.

From: Sara Enochs <sara@saraenochs.com>
Sent: Wednesday, May 09, 2018 4:35 PM
To: DEQ VW Settlement
Subject: Comments for VW Settlement from The Hydrogen Association



The Hydrogen Association's world symbol depicts the classical hydrogen proton with an endlessly orbiting electron as the energy carrier for cleanly and healthfully achieving sustainable prosperity in every community on Earth.

BOARD of ADVISORS

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May 9, 2018

Greetings,

Every year we release 36 billion tons of carbon into the atmosphere and that has accumulated to 36 gigatons of carbon. That's too much carbon!

The Hydrogen Association completely recommends developing a new fuel that would stop releasing carbon into the atmosphere! **Net-Liquid Hydrogen Fuel!** And start collecting carbon out of the atmosphere with smart plug technology.

A unique opportunity has been presented to the United States of America through the 2.7 Billion Remediation VW Settlement to improve the quality of the air. **With this VW Settlement fund each state could work together to create sustainable economic development with Hydrogen and Carbon-reinforced equipment.** By driving with net-hydrogen liquid fuel we can convert cars to become "vacuum cleaners" to clean up the existing air pollution in our cities. Instead of burning the carbon in gasoline, diesel and jet fuel, we can use carbon to produce many more jobs profitably making durable goods. Please watch the following video for an overview: <http://youtu.be/qOL2fEzeuyc>. If the link does not work, please go to YouTube and look up Metrol by David Vasquez. It's important and it does matter! **The video explains everything.**

By converting to net hydrogen liquid fuel, called Metrol, we will cleanly energize our current infrastructure and companies, by creating new jobs that will **coexist** with our current jobs. **Nobody needs to go out of business and we will create new jobs!** The US can lead the world

to ultimately convert the current 1.3 billion engines in transportation, electricity generation, farming and mining applications to overcome local pollution and reverse global warming.

The United States truly has been given the VW Settlement funding to make this happen, but each state needs to help expand the economy and overcome pollution of the air, water, and soil. **What I am asking for today is that we put our differences aside and come together to help our planet and provide a better future for generations to come.**

Please ask your economic development consultant to contact us. We would like to have business partners in Oklahoma ready to produce Metrol and/or the smart plugs when the funds are assigned. The time for this conversation is now.

We look forward to submitting a proposal.

Every day that goes by more carbon is being added to the atmosphere that could be used to make something profitable. Carbon is too valuable to be burned once!

Thank you for your consideration,
Sara Enochs

Here are some additional thoughts to consider:

We call Metrol Liquid Fuel, Hydrogen 2.0, because it fixes a lot of the earlier issues. With Metrol, we can use existing fueling pumps, it can be transported like regular fuel, we don't have to add additional storage tanks to the vehicle, it works with all engines including fuel cells, and the best part, we won't put anyone out of business; we can use existing companies to produce Metrol and the smart plugs.

For more information, please call Roy McAlister, the founder of the Hydrogen Association. The phone number is 602-931-2867.

Or you can email Roy at remcalister@gmail.com. For more information and the white paper on Metrol, please visit Metrol-hydrogen-fuel.com.



May 1, 2018

Heather Lerch
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101
By Email: VWSettlement@deq.ok.gov

Dear Ms. Lerch:

On behalf of the Diesel Technology Forum, I submit these comments regarding the draft Beneficiary Mitigation Plan (“Plan”) currently being drafted by the Oklahoma Department of Environmental Quality (DEQ) concerning the use of \$21 million in Environmental Mitigation Trust funds. By way of background, the Diesel Technology Forum represents manufacturers and suppliers of diesel engines, vehicles and equipment. The Forum is a not-for-profit educational organization dedicated to raising awareness of the clean air and economic benefits of clean diesel technology.

More information on the Forum is available at www.dieselforum.org.

Summary

The key outcome of the Plan should be to maximize NOx reduction and we believe that clean diesel technology, across the spectrum of eligible projects, will contribute to significant progress towards achieving this goal for its residents by prioritizing the most cost effective solutions. While the Department will likely receive many comments urging the prioritization of zero-emission technologies, these technologies are expensive and would leave many older and higher emitting vehicles and equipment in service and diminishing the potential benefits delivered to communities across Oklahoma.

Investments in clean diesel technologies will deliver the most emission reductions to the priority regions identified in the Plan but will also reduce emissions across the entire state. From the variety of off-road equipment to the fleet of heavy-duty on-road vehicles, clean diesel technology will deliver emission reductions in a cost effective way.

Significant Benefits Will Be Delivered by Clean Diesel Off-Road Equipment

Research commissioned by the Diesel Technology Forum and the Environmental Defense Fund indicate that replacing older engines that power large off-road equipment, including switch locomotives and marine workboats, offer one of the greatest cost effective solutions relative to other options. We have included a digest of that research as an attachment at the

end of this document. Switch locomotives are powered by large engines that operate sometimes 24 hours a day. Replacing these older engines manufactured before emissions standards were required, with a Tier 4 clean diesel model is estimated to reduce NOx emissions by between 9 tons per year. In fact, replacing old engines that power a single switch locomotive with the latest clean diesel models is equivalent to replacing dozens older Class 8 trucks. While these projects are expensive, the enormous emission reductions generated by the projects make switch locomotive engine replacements one of the most cost effective uses of Trust revenue.

Clean Diesel Technology Delivers Significant Emission Reductions for On-Road Vehicles

Of all the technology options available and emerging, clean diesel will achieve the most emission reductions from the fleet of heavy-duty vehicles across Oklahoma. The latest clean diesel technologies are available to reduce NOx emissions to near zero levels. Strategies that replace old and larger vehicles that perform the most miles with proven and available clean diesel technology will improve emission reductions.

We recognize that alternative fuels including natural gas, propane and all-electric options are available in some heavy-duty on-road vehicles, but the clean diesel option will deliver significantly more reductions. Clean diesel options are lower priced allowing more higher emitting vehicles to be replaced thus delivering more benefits to communities across the state. Clean diesel and compressed natural gas options deliver roughly the same reduction in NOx emissions, however, the better cost effectiveness of the clean diesel model allows more vehicles to be replaced thereby generate greater emission reductions. The analysis also holds true for all-electric vehicles. While all-electric options may generate very few NOx emissions, electric vehicles have a much higher price tag that would leave many older and higher emitting vehicles in service.

The analysis below demonstrates how investments in clean diesel vehicles match up relative to alternative fuels. Many more tons of NOx may be reduced for a \$21 million investment.

How to Make the Most of a \$21.0 million Investment for Immediate NOx

Price Per Application	# of Vehicles or Equipment placed into Service for \$21 million	Anticipated NOx Reduction per Year per Project	Total Cost to Exclusively Fund a Particular Project	Cost to Remove Each lb of NOx (\$/lb)	Total NOx Reduction (lbs) per year
Trucks					
pre 1991 port truck replacement with Clean Diesel	\$110,000	191	1,282	\$21,000,000	\$86 244,745
pre 1991 port truck replacement with CNG	\$140,000	150	1,292	\$21,000,000	\$108 193,800
Transit Buses					
MY2000 bus with Clean Diesel	\$370,000	57	1,062	\$21,000,000	\$348 60,276
MY2000 bus replacement with Hydrogen	\$1,200,000	18	1,162	\$21,000,000	\$1,033 20,335
MY2000 bus replacement with Battery-Electric	\$880,000	24	1,162	\$21,000,000	\$757 27,730

Source: (1) National Port Strategy Assessment: Reducing Air Pollution and Greenhouse Gases and U.S. Ports". U.S. EPA (September 21, 2016), (2) "Clean Diesel Versus CNG Buses: Cost, Air Quality and Climate Impacts." Clean Air Task Force (2012). (3) "From Deceit to Transformation: How Connecticut Can Leverage Volkswagen Settlement Funds to Accelerate Progress to a Clean Transportation System. CONN PIRG. January 18, 2017. (4) "Consortium to Fund New Flyer Hydrogen Buses to ACTransit", Passenger Transport, February 24, 2017.

Diesel technology is the technology of choice for Oklahoma’s commercial vehicle owners and transit bus operators. Programs to incentivize the introduction of alternative fuels in these categories of on-road vehicles has not introduced these technologies in any large numbers to yield significant emission reductions. Introducing more of the latest generation clean diesel technologies will do the most to generate these benefits. Replacing older on-highway vehicles with clean diesel technologies does not require the additional expensive investments in refueling or recharging infrastructure.

Class 3-8 Trucks		Class 8 Trucks		Transit Buses		School Buses	
CNG	0.3%	CNG	1.0%	CNG	2.0%	CNG	0.3%
Gas	15.9%	Gas	0.0%	Electric	0.0%	GAS	6.6%
Diesel	83.8%	Diesel	99.0%	DIESEL	98.0%	DIESEL	93.0%

SOURCE: Diesel Technology Forum analysis of 2016 vehicle-in-operation data provided by HIS Markit

Summary

We thank you for the opportunity to provide these comments concerning the benefits of clean diesel technology to contribute to emission reductions to Oklahoma through the use of Environmental Mitigation Trust revenue. From larger off-road engines that power switch locomotives to commercial on-highway vehicles, the latest proven and available clean diesel technologies will deliver the most benefits for communities across Oklahoma

DEQ will undoubtedly receive many arguments and proposals for investing in various alternative fuels and technologies or charging infrastructure investments for electric vehicles. The costs are expected to be higher and thus the incremental NOx reduction benefits will be lower compared with clean diesel replacement options. Alternate fuels or electric vehicles are simply not the best option for reducing emissions to benefit Oklahoma residents.

Thank you for the opportunity to provide insights concerning the benefits of greater investments in clean diesel technology. Going forward, the Diesel Technology Forum looks forward to providing any additional analysis or insight to the Oklahoma Department of Environmental Quality as the state considers efforts to implement strategies to make the most of the Trust. Please contact us at (301) 668-7230.

Very truly yours,

A handwritten signature in cursive script that reads "Allen R. Schaeffer".

Allen R. Schaeffer
Executive Director



Tug and Switcher Engine Upgrades Offer Most Cost-Effective Option for VW Funds, Research Shows

New Research Demonstrates the Significant Emission Reduction and Cost-Saving Benefits of Clean Diesel Large Engine Upgrades

March 8, 2018 (WASHINGTON) – Clean diesel technology upgrades for large tug and switcher locomotive engines cost only \$4,379 to \$15,201 per ton of nitrogen oxides (NOx), compared to more than [\\$30,000](#) per ton of NOx for many other diesel emission reduction projects.

The [Diesel Technology Forum](#) (DTF) and the [Environmental Defense Fund](#) (EDF) today [released a report](#) documenting the significant emission reduction benefits that can be gained by replacing older engines in tug boats and switcher locomotives with the latest clean diesel models. Funds from Volkswagen’s (VW) \$2.9 billion environmental trust, established to mitigate for the excess emissions resulting from defeat devices on 590,000 diesel vehicles, can be used to help pay the cost of repowering these and other old diesel engines.

The [joint research](#) estimates that replacing older engines in a typical tug boat with the latest clean diesel model that meets the latest emissions milestones can eliminate on average 14.9 tons of NOx emissions per year. A similar activity for switchers can reduce NOx emissions by 9.0 tons per year.

DTF and EDF’s research confirms that upgrading tug and switcher engines to the latest clean diesel technology offers the most cost-effective option for reducing diesel emissions. Replacing tugboat engines with clean diesel technology costs on average \$4,379 per ton of NOx eliminated, while upgrading a switcher engine costs \$15,201 per ton.

“The substantial reductions possible with clean diesel replacements offer great news for communities near ports and rail yards. These areas are often among those most vulnerable to smog-forming compounds like NOx, so residents there stand to reap the greatest benefits,” said Allen Schaeffer, DTF Executive Director. “While engine replacement projects are costly, the return on the investment on a dollar-per-ton of emissions reduced makes these projects a compelling choice. States looking to maximize cost-effective investments to reduce NOx emissions should prioritize clean diesel upgrades for tug and switcher engines.”

“Many tugs and switchers operate in ports that fail to meet federal health-based air quality standards,” said Dr. Elena Craft, EDF Senior Health Scientist. “Repowering older tug and switcher engines can deliver cleaner, healthier air faster to at-risk communities near ports. These new engines also help reduce carbon dioxide emissions and black carbon, two important climate pollutants.”

Starting in 2015, new clean diesel engines used in marine applications and switcher locomotives in the United States were required to meet Tier 4 emissions standards. Relative to previous generations of technology, the latest clean diesel technologies can reduce emissions, including NOx and fine particle emissions (PM2.5), by 88 percent to 95 percent. While the latest clean diesel technologies are ready and available to reduce emissions, the U.S. Environmental Protection Agency estimates that by 2020, unless action is taken, only 5 percent of the switch locomotive and 3 percent of the marine workboat fleets will be powered by these clean technologies.

“Right now, state governments have an opportunity to get more of these clean technologies out in the field to deliver immediate emission reductions for communities near port operations,” said Schaeffer. “The recent settlement with VW established an environmental remediation program that will soon provide \$2.9 billion to states for the sole purpose of reducing NOx emissions. Policymakers looking to reduce emissions quickly for communities near ports and rail lines should consider these highly cost-effective clean diesel solutions.”

Learn more at <https://ww.dieselforum.org/largeengineupgrades> and <https://www.dieselforum.org/vwfund>.

Benefit Analysis, NOx Reductions for Large Engines				
	Parts & Labor Cost (total)	NOx Reduction (tons/year)	Cost Effectiveness	
			Full Cost (\$/ton)	40% Cost (\$/ton)
Tug	\$1,400,000	14.9	\$4,379	\$1,752
Switcher	\$2,600,000	9.0	\$15,201	\$6,080

Source data [available here](#).

The most cost-effective upgrades make the biggest health impact

New Tier 4 engines for tug boats reduce NOx emissions by 91%

The \$2.9 billion VW Environmental Mitigation Trust provides funding to upgrade older vehicles and equipment to rapidly reduce nitrogen oxide (NOx) emissions, which contribute to hazardous smog pollution. Upgrading just one of the oldest, dirtiest tug boats is like taking tens of thousands of passenger vehicles off the road per year, bringing substantial health benefits to at-risk communities. With states now deciding how to invest those funds, repowering these older vessels with cleaner Tier 4 engines is a game-changer for delivering immediate and cost-effective air quality benefits.



Upgrading an old tug boat with new Tier 4 engines removes

30 tons of NOx/year¹

This is equivalent to

Replacing **96** drayage trucks²

OR

Removing **26,667** cars for 1 year³

Upgrading old engines means cleaner air for all

EPA estimates that by 2020, only 3% of tug boats will be replaced with cleaner Tier 4 engines. The VW Environmental Mitigation Trust provides a rare opportunity to retire the oldest diesel engines still in operation, which can last 50 years or longer. Tier 4 or Tier 3 engines will deliver cleaner, healthier air faster to at-risk communities. These new engines also improve fuel efficiency, which reduces CO₂ and black carbon emissions, two important greenhouse gas pollutants.

Tug projects are a better value

1 ton of NOx reduction costs

Other projects
\$30,000⁴

Tier 4 tug engines
\$5,000⁴

1. Full hull 2016, 1000-hp diesel and 1000-hp outboard motor
2. EPA, 2014, Drayage Truck Emissions Inventory
3. The "New Diesel" 1000-hp per year
4. EPA, 2015, 2016 Coast Emissions Report



The most cost-effective upgrades make the biggest health impact

New Tier 4 engines for switchers reduce NOx emissions by 95%

The \$2.9 billion VW Environmental Mitigation Trust provides funding to upgrade older vehicles and equipment to rapidly reduce nitrogen oxide (NOx) emissions, which contribute to hazardous smog pollution. Upgrading just one of the oldest, dirtiest switchers is like taking tens of thousands of passenger vehicles off the road per year, bringing substantial health benefits to at-risk communities. With states now deciding how to invest those funds, repowering these older switchers with cleaner Tier 4 engines is a game-changer for delivering immediate and cost-effective air quality benefits.



Upgrading an old switcher with new Tier 4 engines removes

9 tons of NOx/year¹

This is equivalent to

Replacing **29²** older trucks

OR

Removing **8,000** cars for 1 year³

Upgrading old engines means cleaner air for all

EPA estimates that by 2020, only 5% of switcher engines will be replaced with cleaner Tier 4 engines. The VW Environmental Mitigation Trust provides a rare opportunity to retire the oldest diesel engines still in operation, which can last 70 years or longer. Tier 4 engines will deliver cleaner, healthier air faster to at-risk communities. These new engines also improve fuel efficiency, which reduces CO₂ and black carbon emissions, two important greenhouse gas pollutants.

Switcher projects are a better value

1 ton of NOx reduction costs

Other projects
\$30,000⁴

Tier 4 switcher engines
\$15,000⁴

1. Full hull 2016, 1000-hp diesel and 1000-hp outboard motor
2. EPA, 2014, Drayage Truck Emissions Inventory
3. The "New Diesel" 1000-hp per year
4. EPA, 2015, 2016 Coast Emissions Report



###

Media Contacts

Diesel Technology Forum:
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sdirndorfer@dieselforum.org
301.668.7230 (o) 301.706.8276 (c)

Environmental Defense Fund:
Shira Langer, Media Relations
slanger@edf.org
202.572.3254 (o)

***The Diesel Technology Forum** is a non-profit organization dedicated to raising awareness about the importance of diesel engines, fuel and technology. Forum members are leaders in clean diesel technology and represent the three key elements of the modern clean-diesel system: advanced engines, vehicles and equipment, cleaner diesel fuel and emissions-control systems. For more information, visit www.dieselforum.org. For the latest insights and information from the leaders in clean diesel technology, join us on [Facebook](#), follow us on [Twitter](#) @DieselTechForum, or [YouTube](#) @DieselTechForum and connect with us on [LinkedIn](#). Get it all by subscribing to our newsletter [Diesel Direct](#) for a weekly wrap-up of clean diesel news, policy analysis and more direct to your inbox.*

***Environmental Defense Fund** (edf.org), a leading international nonprofit organization, creates transformational solutions to the most serious environmental problems. EDF links science, economics, law, and innovative private-sector partnerships. Connect with us on [Twitter](#), [Facebook](#), and our [Energy Exchange blog](#).*



May 14, 2018

Heather Lerch
Oklahoma Department of Environmental Quality
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101

Re: Proterra's Response to Oklahoma's Proposed VW Beneficiary Mitigation Plan ("BMP")

Dear OK DEQ:

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 Oklahoma's overall intentions and plan for spending ~ \$21M of Oklahoma's VW allocation funding.

The proposed BMP appropriately prioritizes projects that reduce NOx emissions efficiently and cost-effectively across the entire state. To this end, Proterra strongly supports funding for the replacement of school and transit buses. But it urges the state to fund the purchase of *zero-emission, battery-electric* school buses and transit buses. And it urges the state to increase the targeted percent of funding for the On-Road Program to 35%, with a specific carve-out for a public transit bus replacement program. Lastly, we recommend that the 15% of Reserved Flex Funding be used to advance the electrification of public transit buses in those geographical areas and emission sectors that have the greatest impact on Oklahoma's overall mobile NOx emissions.

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 mobility options and improve air quality. Rather than merely replacing current buses with new buses with *lower* emissions, we recommend that the state replace its current buses with new buses with *zero* emissions. And we believe that the best way to accomplish the state's VW goals is to use the funds from the trust to fund 110% of the incremental cost of a new electric transit bus and associated charging infrastructure. This approach will help spur the adoption of a greater number of electric buses among transit agencies, airports and universities.

The electrification of heavy duty vehicles offers a pathway towards achieving the numerous benefits associated with zero emission transit. Indeed, Park City, Utah's recent deployment of Proterra electric transit buses is the poster child for why states should emphasize the electrification of transit buses with their VW mitigation funding. In June 2017, Park City Transit deployed six battery electric buses. Since that time, the electric fleet has traveled more than 160,000 miles using 269,400 of kWh electricity, resulting in an average fuel efficiency of 1.7 kWh/mile, or just over 22 MPGe (compared to 4 MPG for Park City's diesel buses). The electric buses have displaced the use of ~ 32,000 gallons of diesel fuel in their first four months alone, while eliminating more than 801,000 lbs. of GHG emissions. Additionally, the electric buses have saved Park City Transit money through the savings in fuel and maintenance. In fact, the cost per mile of operation has dropped from a high of \$0.63 a mile using diesel to a low of \$0.30 using electricity. Not surprisingly, Park City has seen

www.proterra.com



an increase in ridership on those routes utilizing zero emission buses, causing other municipalities to determine how they too can add and/or increase the number of zero emission buses on the road.

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 the DEQ to promote the adoption of zero-emission technology, and not “near-zero” technology (i.e., “clean diesel,” propane or natural gas). 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.¹ In the state of Oklahoma, 134,224 tons of NOx, or 35% of the 385,782 tons of NOx emitted are from mobile sources.² On this basis alone, we urge DEQ to use ~20% of its VW funds specifically to advance the electrification of public transit buses in those areas disproportionately impacted by the VW diesel vehicle emissions. By doing so, Oklahoma will help achieve its program goals, including the reduction of NOx, greenhouse gases and other pollutants.

Thank you for the opportunity to provide comments on the draft spending plan. Please feel free to contact me directly about these comments. 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://www3.epa.gov/cgi-bin/broker?polchoice=NOX& debug=0& service=data& program=dataprog.national.1.sas>

² <https://www3.epa.gov/cgi-bin/broker? service=data& debug=0& program=dataprog.state.1.sas&pol=NOX&stfips=40>

From: Pfmooore@sbcglobal.net
Sent: Thursday, May 17, 2018 11:55 AM
To: DEQ VW Settlement
Subject: VW Settlement

The following message has been sent by Paul Moore

Please utilize the VW settlement to establish an EV infrastructure system in Oklahoma and support the utilization of EV's within the state. In conjunction with the continued development of wind and solar power, the creation of a viable EV infrastructure would make Oklahoma one of the leaders in fighting climate change and empowering self-sufficiency.

From: jennifersaltzstein@hotmail.com
Sent: Thursday, May 17, 2018 1:58 PM
To: DEQ VW Settlement
Subject: I support EVs and EV charging infrastructure

The following message has been sent by Jennifer Saltzstein

Hello, I am writing to urge you to use the Volkswagen settlement to support infrastructure for Electric Vehicles. I support using the settlement funds to purchase EVs for the state fleet and for public transportation, providing tax incentives for purchasing EVs, creating more charging stations, and anything else that might help us replace gasoline vehicles with EVs. Since the settlement is meant to remedy the increased emissions caused by Volkswagen vehicles, I feel strongly that the funds should be used to decrease tailpipe emissions. Thanks,
Jennifer Saltzstein 926 W. Eufaula Street Norman, OK 73069

From: Carol Chappell <odachappell@gmail.com>
Sent: Tuesday, May 22, 2018 3:29 PM
To: DEQ VW Settlement
Subject: In support of clean energy

Dear Ms. Lerch:

I am a resident of Oklahoma and a U.S. citizen and I fully support clean energy and the use of electric and hybrid vehicles - my husband and I both drive hybrid vehicles and wouldn't have it any other way.

For us to grow as a state we must be perceived as forward thinking. We will NOT attract new business if we are perceived as a state that clings to a dying industry - oil and gas. Wind and solar are more labor intensive fuel sources and will therefore increase jobs. If you travel to any number of states you'll see many more recharging stations and other evidence of the state's move towards sustainability - why can't we?

Thank you for considering my opinion.

Carol Chappell
2031 Ridgeview Road
Midwest City, OK 73130
405-488-8625

Sent from my iPhone



An AEP Company

Public Service Company of Oklahoma
212 E. 6th Street
Tulsa, OK 74119
psoklahoma.com

May 8, 2018

Mrs. Heather Lerch, Air Quality and Energy Efficiency Specialist
Air Quality Division
Oklahoma Department of Environmental Quality
707 N. Robinson
Oklahoma City, OK 73102

Re: Comments for Oklahoma Department of Environmental Quality on Volkswagen Beneficiary Mitigation Plan

Dear Mrs. Lerch:

In accordance with the ODEQ's Oklahoma proposed draft Volkswagen Beneficiary Mitigation Plan released April 24, 2018, Public Service Company of Oklahoma (PSO) respectfully submits this Comment Letter concerning the BMP. As an electric utility, PSO is committed to providing sustainable energy solutions to the 547,000 customers we serve across 49 Oklahoma counties. PSO is increasingly utilizing Oklahoma's abundant clean renewable wind energy to serve customers. Our experience with electrical infrastructure and our strong relationships with community leaders and the customers we serve demonstrates our ability to be a valuable partner in effectively deploying these resources.

PSO concurs and fully supports the following recommendations listed in ODEQ's draft plan:

- (1) The eligible mitigation action categories and funding percentages as listed on Table 1 of draft report.
- (2) The maximum trust fund allocation of 15% to acquire, install, operate, and maintain ZEV Infrastructure.
- (3) On-Road Program funding allocation of 20% for categories 1, 2, and 6 of appendix D-2.
- (4) Off-Road Program funding allocation of 20% for categories 3, 4, 7, and 8 of appendix D-2.
- (5) The priorities listed in the draft plan:
 - a. Cost-Effectiveness
 - b. Mobile NOx Emissions Reduction – historically high ozone areas, Volkswagen registration areas, focus on target sectors, geographic area of mobile NOx emissions, and the suggested priority list of counties.
- (6) The consideration of additional sites for funding allocation where air pollution is high such as truck stops, ports, rail yards, etc.

The draft plan does not provide details pertaining to the application process to secure funding; therefore, we look forward to working with the ODEQ on this issue and other administrative tasks necessary to move this process forward.

Thank you for your consideration,

Sincerely,

A handwritten signature in blue ink, appearing to read "Scott Ritz".

Scott Ritz, CEM
Director of Customer Services and Marketing

BOUNDLESS ENERGY™

From: Ray, Randall W <Randy.Ray@navistar.com>
Sent: Wednesday, May 23, 2018 3:25 PM
To: DEQ VW Settlement
Cc: Kauffman, Ryan; Kulungowski, Margaret A; Ford, Robert J
Subject: IC Bus Comments to Oklahoma Proposed Beneficiary Mitigation Plan Draft
Attachments: OK Letter final (003).pdf

Ms. Lerch,
Please see below and attached, IC Bus comments, we appreciate the opportunity.

May 23, 2018

Heather Lerch
Air Quality Division
Oklahoma Department of Environmental Quality
PO Box 1677
Oklahoma City, OK 73101

Re: Comments to Oklahoma Proposed Beneficiary Mitigation Plan Draft

Thank you for this opportunity to provide comments representing IC Bus of Oklahoma, LLC. The VW Mitigation Trust presents a tremendous opportunity to reduce diesel emissions and improve the environment. The Oklahoma allocation of \$20.9M will permit the state to make a dramatic reduction in NOx emissions.

We applaud your recognition of school buses as a key priority. We agree with the use of the funds to assist in public institutions as evidenced by the prioritization exhibited in the Proposed Beneficiary Mitigation Plan.

According to IHS Polk Registration there are over 900 pre-1998 buses in the state and just under 4,200 pre-2010 buses.

Accelerating the retirement of older, higher emitting school buses will reduce emissions immediately in the vicinity of an at risk population – school age children. School age children are still developing full respiratory capability, thus emission reduction efforts minimizing exposure for school age children will provide positive benefits throughout their life.

Funding for school buses within nonattainment areas captures the goal of working within these nonattainment areas where need for the children and the general population is greatest.

Funding for school buses will also provide direct and significant benefits for financially distressed areas needing environmental justice, as these often coincide with the same non-attainment area needs.

We also believe that usage of funds towards new buses provides benefits above the NOx reduction. New school buses can provide the greatest social good, you may be unaware that school buses have unusually long life spans, as such, funding towards school buses therefore extends the timeline of benefits providing the maximum benefit to the environment, the children, and the municipality. Additionally, a new vehicle includes a

complete warranty, reducing the cost of near term repairs from the school operating budget. This is in addition to safety and product improvements available with a new school bus. As such, we disagree that repowering equipment is a responsible option. Repowering older equipment introduces powertrains placed into older chassis they were never designed for. This can create untold numbers of potential issues as a result of this integration.

As an Oklahoma based manufacturer of school buses we ask that you recognize this investment in your state businesses. IC Bus of Oklahoma, LLC is a wholly owned subsidiary of Navistar, Inc., our Oklahoma plant is the sole location where we manufacture school buses. Our Oklahoma bus dealer, Summit Truck Group has 7 locations throughout the state.

Investing in school buses is an investment in the state of Oklahoma. Again, we thank you for this opportunity. Focusing on the schools benefits both the at risk school age population and the larger community. Fiduciary responsibility to the fund and the state would indicate that usage of these funds within public institutions as identified within the plan would be the most transformative choice available.

Should you have any questions, please feel free to contact me at 331-332-3074 or any IC Bus or Navistar representative.

Sincerely,

Randall W. Ray

Randall Ray
IC Bus

Randall Ray | Sales Director – IC Bus

2701 Navistar Dr., Lisle, IL 60532 | w 331.332.3074 | m 630.740.8840



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IC Bus, LLC
2701 Navistar Drive
Lisle, IL 60532 USA

P : 331-332-3074
W : randy.ray@navistar.com

Randall Ray
Sales Director

May 23, 2018

Heather Lerch
Air Quality Division
Oklahoma Department of Environmental Quality
PO Box 1677
Oklahoma City, OK 73101

Re: Comments to Oklahoma Proposed Beneficiary Mitigation Plan Draft

Thank you for this opportunity to provide comments representing IC Bus of Oklahoma, LLC. The VW Mitigation Trust presents a tremendous opportunity to reduce diesel emissions and improve the environment. The Oklahoma allocation of \$20.9M will permit the state to make a dramatic reduction in NOx emissions.

We applaud your recognition of school buses as a key priority. We agree with the use of the funds to assist in public institutions as evidenced by the prioritization exhibited in the Proposed Beneficiary Mitigation Plan.

According to IHS Polk Registration there are over 900 pre-1998 buses in the state and just under 4,200 pre-2010 buses.

Accelerating the retirement of older, higher emitting school buses will reduce emissions immediately in the vicinity of an at risk population – school age children. School age children are still developing full respiratory capability, thus emission reduction efforts minimizing exposure for school age children will provide positive benefits throughout their life.

Funding for school buses within nonattainment areas captures the goal of working within these nonattainment areas where need for the children and the general population is greatest.

Funding for school buses will also provide direct and significant benefits for financially distressed areas needing environmental justice, as these often coincide with the same non-attainment area needs.

We also believe that usage of funds towards new buses provides benefits above the NOx reduction. New school buses can provide the greatest social good, you may be unaware that school buses have unusually long life spans, as such, funding towards



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Lisle, IL 60532 USA

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Randall Ray
Sales Director

school buses therefore extends the timeline of benefits providing the maximum benefit to the environment, the children, and the municipality. Additionally, a new vehicle includes a complete warranty, reducing the cost of near term repairs from the school operating budget. This is in addition to safety and product improvements available with a new school bus. As such, we disagree that repowering equipment is a responsible option. Repowering older equipment introduces powertrains placed into older chassis they were never designed for. This can create untold numbers of potential issues as a result of this integration.

As an Oklahoma based manufacturer of school buses we ask that you recognize this investment in your state businesses. IC Bus of Oklahoma, LLC is a wholly owned subsidiary of Navistar, Inc., our Oklahoma plant is the sole location where we manufacture school buses. Our Oklahoma bus dealer, Summit Truck Group has 7 locations throughout the state.

Investing in school buses is an investment in the state of Oklahoma. Again, we thank you for this opportunity. Focusing on the schools benefits both the at risk school age population and the larger community. Fiduciary responsibility to the fund and the state would indicate that usage of these funds within public institutions as identified within the plan would be the most transformative choice available.

Should you have any questions, please feel free to contact me at 331-332-3074 or any IC Bus or Navistar representative.

Sincerely,

Randall W. Ray

Randall Ray
IC Bus

From: Sherrie Merrow <SMerrow@ngvamerica.org>
Sent: Wednesday, May 23, 2018 4:13 PM
To: DEQ VW Settlement
Cc: Daniel J. Gage; Clarke, Jeff
Subject: NGVAmerica Comments on the State of OK VW Beneficiary Mitigation Plan
Attachments: NGVAmerica Comments - OK VW Beneficiary Mitigation Plan - May 23 2018.pdf;
NGVAmerica OK VW State Mitigation Plan Comments - May 11 2017.pdf; NGVA VW
Flyer.pdf

Dear Ms. Lerch:

Natural Gas Vehicles for America (NGVAmerica) is pleased to submit comments (May 23 2018 document) to the State of Oklahoma Department of Environmental Quality for consideration in finalizing its Proposed Volkswagen (VW) Beneficiary Mitigation Plan to use funds from the Volkswagen Partial Consent Decree. As the national trade association for natural gas vehicles (NGVs), NGVAmerica knows that natural gas vehicles play an unmatched role among alternative fuel vehicles in delivering the most NOx reductions for the lowest cost and therefore should have a significant presence in the Oklahoma VW Beneficiary Mitigation Plan.

NGVAmerica appreciates the support for NGVs in the Oklahoma Administration, Legislature and throughout the state over the years, and looks forward to continuing to work with all in the future.

Please contact me with any questions or if you would like to meet in person to discuss our comments.

Thank you,

Sherrie Merrow

Director, State Government Advocacy

NGVAmerica

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Natural Gas Vehicles for America

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Washington, D.C. 20001
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May 23, 2018

Ms. Heather Lerch
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101

RE: NGVAmerica Comments on the State of Oklahoma Proposed Volkswagen Beneficiary Mitigation Plan

Dear Ms. Lerch:

Natural Gas Vehicles for America (NGVAmerica), the national trade association for the natural gas vehicle industry, respectfully submits the following comments to the State of Oklahoma Department of Environmental Quality (DEQ) on its Proposed Volkswagen Beneficiary Mitigation Plan (Plan). These comments are in addition to the NGVAmerica comments submitted to the State on May 11, 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 Oklahoma and other states to put significantly cleaner, lower-polluting vehicles on the road in public and private fleets. This funding (\$20.9 million) can and should be used by Oklahoma 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 11, 2017, 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.

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).

Geologic natural gas is abundant in Oklahoma, providing a zero equivalent tailpipe emission alternative to diesel fuel. However, 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.

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. We urge the DEQ to ensure that any future funding opportunities or solicitations concerning rail and marine projects be open to natural gas options.

The VW EMT funds provide an opportunity for Oklahoma to cost-effectively accelerate the transition to cleaner vehicles and lower emissions. Oklahoma has a long history of support for natural gas vehicles that are commercially available and offer the best solutions today for addressing the goals of the EMT, delivering the most nitrogen oxide emission reductions for the least cost.

The Oklahoma Proposed VW Plan supports the EMT goals and has as its primary goal to “*cost-effectively reduce mobile NOx emissions throughout the State.*” The Plan provides funding for appropriate vehicle sectors focused primarily on alternative fuels, with project evaluation criteria that will enable projects that reduce the most NOx and leverage the funding through project matching. In reviewing the plan NGVAmerica generally recommends that more funding be applied to heavy duty on-road applications since these reduce the most NOx, but this could come from the Reserve category. Additional comments are provided below.

Current State Beneficiary Mitigation Plans

Thirty-one 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 model years 1992-2001) and provides a relative parity for funding for the various fuels through its choice of percentage funding by fuel type. The funding 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). NGVAmerica requests that DEQ consider a similar framework of funding percentages for each vehicle to create “parity” among the vehicle types.

Additional Options for Vehicle Scrappage

NGVAmerica also recommends that DEQ 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/>.

Many states historically have used the U.S. EPA Diesel Emissions Quantifier (EPA DEQ) to calculate emissions reductions, and the Oklahoma DEQ is using the EPA DEQ and the ERG Diesel Funding Optimizer. The DEQ tool is not current in its underlying assumptions and data for today's engines and in-use emissions, therefore NGVAmerica recommends that the Oklahoma DEQ use the ANL HDVEC tool for all applicable categories, 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 DEQ 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 DEQ 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 Oklahoma. 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



Natural Gas Vehicles for America

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Washington, D.C. 20001
ngvamerica.org



May 11, 2017

The Honorable Mary Fallin
Governor
State of Oklahoma
2300 N. Lincoln Blvd. Room 212
Oklahoma City, OK 73105

RE: NGVAmerica Comments on the Volkswagen Diesel Emissions Settlement and the Environmental Mitigation Trust Implementation for the States

Dear Governor Fallin:

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 Oklahoma can best use the Environmental Mitigation Trust (EMT or Trust) funds (\$20.9 million) that the state will receive as part of the Volkswagen (VW) diesel emission settlement. These comments are intended to inform the decision-making process as Oklahoma begins to consider and develop the Environmental Mitigation Plan required by the Trust.

The VW EMT funds provide an extraordinary opportunity for Oklahoma and other states to put significantly cleaner, lower-polluting vehicles on the road in public and private fleets. Oklahoma has a strong achievement record of providing significant incentives for such vehicles and this funding will provide Oklahoma with additional resources to continue its commitment to accelerating the use of cleaner, alternative fuels that offer a cost-effective alternative to funding diesel vehicles.

The latest natural gas engines are the only “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 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 engines.

NGVAmerica’s comments rely on data generated by evaluating the latest commercially available technology when comparing emissions benefits between natural gas, diesel and electric vehicle and engine types. Natural gas engines are the only available internal combustion engines that have been certified to California’s 0.02 OLNS and thus are the only true Near Zero engines available in the marketplace today. Additionally, if renewable natural gas (RNG) is used, life cycle emissions from NGVs are reduced further. Putting more NGVs on the road today provides a strong customer base for the growing RNG market.

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).

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 and delivering the most nitrogen oxide (NOx) emission reductions for the lowest cost.

The following pages outline key facts related to vehicle emissions, total cost of ownership, and current availability, and NGVAmerica's recommendations on how EMT funds can be allocated effectively for reducing emissions.

The Need to Take Meaningful Action Today

The funding available through Volkswagen's Environmental Mitigation Trust comes at a time when it is critical to address transportation emissions. The American Lung Association's "State of the Air 2016" report found that air pollution continues to be a pressing concern with more than half of all Americans—166 million people—living in counties where they are exposed to unhealthy levels of ozone and particulate pollution.

Medium- and heavy-duty on-road vehicles are the number one source of ozone-forming emissions of nitrogen oxides (NOx) in almost every metropolitan region in the U.S., therefore there is considerable opportunity to develop and deploy funding programs that make an immediate and tangible impact on air quality and related public health issues.

166 Million



*Approximately
50% of Americans
live in
areas with air that
is unhealthy to
breathe*

#1 Source



*Medium- and
heavy-duty
vehicles are the
#1 source of
smog*

Sustainable, Responsible, Available: Natural Gas Vehicles

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

In these comments NGVAmerica presents the compelling reasons that states should prioritize funding for NGVs to *maximize the impact* of the available funding. As your organization is aware, the EMT was set up to fund projects that make an impactful reduction on NOx emissions to mitigate the excess emissions currently in our air from the non-compliant light-duty diesel vehicles VW sold. NGVAmerica strongly believes that NGVs are the best solution to meet the core goals put forth by the Volkswagen EMT funding. NGVs are:

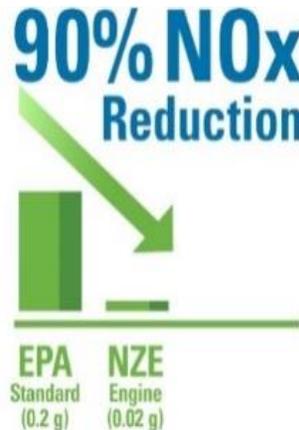
1. **Sustainable:** NGVs maximize long-term emission reductions
2. **Responsible:** NGVs extend the funding and foster economic development
3. **Available:** NGVs meet the diverse operating requirements of every fleet application

1. Sustainable: NGVs Maximize Long-Term Emission Reductions

- ❖ **Key Point:** Today's natural gas medium- and heavy-duty engines provide *unmatched* reductions of smog-forming emissions of nitrogen oxides (NOx).

“Near Zero-Emissions”: EPA and CARB Certified a Heavy-Duty Natural Gas Engine to 0.02 g Standard

In September 2015, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) certified the world's first heavy-duty engine that emits oxides of nitrogen (NOx) at levels so low that they are considered at “near-zero” (0.02g NOx/bhp-hr). This is the cleanest commercially available heavy-duty truck engine available in the market today, offering the ability to reduce emissions 90% below even the most stringent U.S. EPA standards.



Today's natural gas engines offer a 90% NOx reduction over the EPA's strictest emission standards, making them the cleanest commercially available technology



The “Game Changer” report shows that “Near-Zero” NGVs are cleaner than “Zero-Emission” All-Electric trucks

NGVs Have Lower NOx Emissions Than All-Electric Trucks

The emission benefits of the new “Near-Zero” engine are well documented in the 2016 *Game Changer* report issued by Gladstein, Neandross and Associates (GNA)². The GNA report indicates that a truck or bus equipped with a natural gas engine that has been certified to the 0.02 g/bhp-hr Optional Low NOx Standard has tailpipe NOx emissions that are comparable to – or possibly lower than – the amount of NOx emitted to produce electricity used to charge a comparable heavy-duty All-Electric Truck.

² Gladstein, Neandross & Associates, *Game Changer Technical White Paper* (2016) <http://ngvgamechanger.com/>, Section 6.4 and Appendix 1. Emissions of low-NOx natural gas engines produce NOx emissions that are comparable to or lower than similar electric drive vehicles in all 50 U.S. states when considering upstream NOx.



Heavy-duty drayage trucks:

Diesel trucks tested in study exceed certification level

Critical Insight:

Study Finds that Natural Gas Engines Outperform Diesel Engines in Real World Situations

Natural gas (NG) engines today meet an optional Low NOx standard that is ten times cleaner than the standard required for new diesel and natural gas engines. However, the in-use emission benefits of NG engines could be even more significant.

A recent report published in *Environmental Science and Technology*³, evaluated in-use emissions of earlier model year NG vehicles and found that NG engines performed much better in real world conditions (i.e., operating within city limits in low-speed, high-idling situations), registering NOx levels that were 96% lower than levels produced by tested diesel engines equipped with the latest emissions controls. The study found that diesel NOx emissions operating in similar conditions produced emissions that were 5 -7 times higher than in-use certification limits in some cases.

Related Recommendations for EMT Funding

- ✓ **Provide a higher level of funding for technologies that are proven to exceed federal emission levels for nitrogen oxides**
 - Vehicles with engines certified to California's Optional Low-NOx Standard should receive the highest level of funding (e.g., 25% in the case of private sector vehicle replacements)
 - Use the state's approved DERA plan to fund low-NOx natural gas trucks (i.e., 35% of the replacement cost for private vehicles equipped with low-NOx engines)
- ✓ **Provide the highest level of funding to applications that will reduce the largest share of NOx emissions**
 - Evaluate the main mobile source(s) of NOx emissions in urban and non-attainment areas (Note: In most regions, this means prioritizing funding for short-haul, regional-haul, and refuse trucks)
 - Do not segment the funding – fund the projects that best achieve the most NOx reductions

³ *Environ. Sci. Technol.*, **2015**, 49 (8), pp 5236–5244 (Emission Rates of Regulated Pollutants from Current Technology Heavy-Duty Diesel and Natural Gas Goods Movement Vehicles).

2. **Responsible:** NGVs Extend the Funding and Foster Economic Development

- ❖ **Key Point:** NGVs are far more cost-effective in delivering emission reductions than other alternative fuel options, such as hybrid and electric vehicles.



Due to lower fuel and maintenance costs, NGVs offer an 18 to 24 month payback. As production increases and fuel tank prices come down, vehicles will become less expensive and enjoy a shorter payback period

NGVs Offer a Fast Return on Investment

While NGVs typically cost more than gasoline or diesel vehicles upfront (largely due to the cost of high-pressure and insulated fuel tanks which are necessary to store CNG or LNG), owners and operators of high mileage vehicles typically see a pay back in as little as 18–24 months. This is due to:

- **Lower Fuel Costs:** Natural gas fuel prices have historically had a significant discount relative to gasoline and diesel and offer more stability compared to the costs of petroleum based fuels. Lower oil prices have recently reduced the differential in price, but according to the Energy Information Agency, the long-term outlook is for natural gas prices to remain stable and low, while volatility and higher prices return for gasoline and diesel fuels. For many users, the savings in fuel costs can translate into significant savings over the life of a vehicle, depending on fuel efficiency and the number of miles driven. The greatest savings are currently being seen in heavy-duty, high mileage fleets.
- **Lower Maintenance Costs:** NGVs are easier and cheaper to maintain than diesel trucks because they have:
 - No diesel particulate filter (DPF)
 - No DPF regeneration or waste disposal
 - No selective catalytic reduction (SCR)
 - No diesel emission fluid (DEF)



High-profile fleets across the U.S. are using natural gas vehicles in their everyday operations, transporting passengers, and hauling waste, packages, beverages, and other goods

NGVs Have Been Road-Tested by Leading Fleets

There are more than 160,000 NGVs on U.S. roads today, spanning all weight classes and vehicle applications. The adoption of NGVs has been pioneered by several high-profile fleet operators, including UPS, Anheuser-Busch, Kroger, FedEx, Frito Lay, Waste Management, LA Metro, all of which performed exhaustive analysis to determine the best vehicle and fueling options for their fleet based on application, range, duty cycle, and payload.

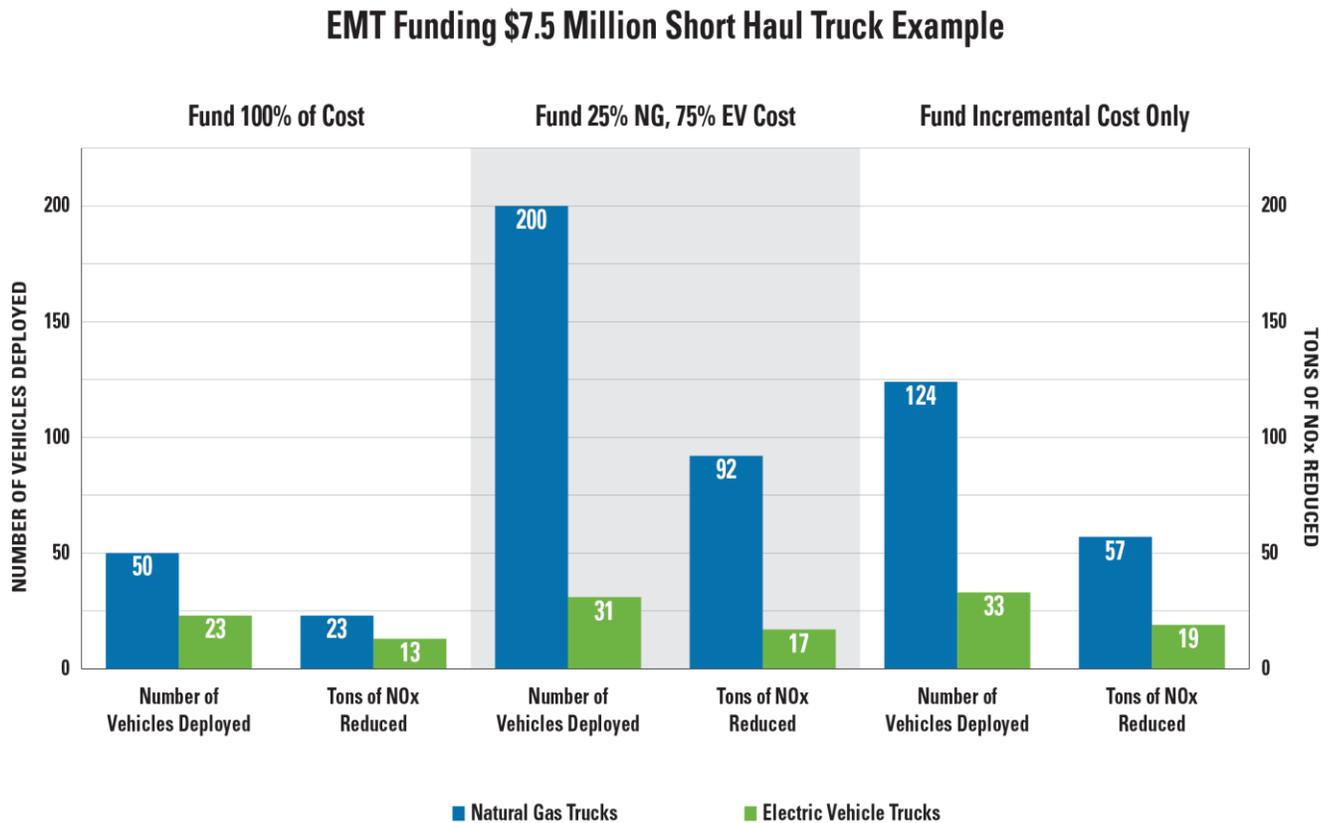
Given the significant fuel and emission reductions realized by early adopters, the popularity of NGVs has continued to build in the U.S., with 20% of all U.S. transit buses now running on CNG or LNG, 35 airports operating NGVs in their private fleets or championing policies that encourage use by private fleets, and more than 50% of new refuse trucks running on natural gas.

To fuel these vehicles, natural gas infrastructure is rapidly expanding with more than 1,640 CNG and 123 LNG fueling stations operating today.

Dollar-for-Dollar Natural Gas Delivers Greater Numbers of Total Vehicles and Greater Total Tons of NOx Emission Reductions

This is illustrated by the chart below which looks at several different funding options for natural gas and electric vehicles including providing 100% of the cost of new, replacement vehicles for public fleets, using the maximum funding levels specified in the settlement for natural gas and electric vehicles purchased by private fleets, or funding only the incremental cost of new, replacement vehicles. In each case, the deployment of natural gas vehicles (e.g., regional haul trucking, refuse trucks, and transit buses) will provide the most NOx emissions reduction to comply with the EPA’s latest national ozone standards.

Chart: Heavy-Duty Truck Deployment & NOx Reduction Comparisons Under Different Funding Scenarios



Critical Insight:
Comparable All-Electric Vehicles Cost 2-3x More Than an NGV

While actual cost depends on the application, an all-electric medium- or heavy-duty vehicle usually costs two to three times the amount of a comparable vehicle powered by a 0.02 g NOx natural gas engine. As noted above, funding heavy-duty NGVs delivers greater emission reductions than similar projects involving all-electric trucks, and they offer the best ability to reduce emissions on a large scale because the funding will extend further.

Related Recommendations for EMT Funding

- ✓ **Ensure that funding incentivizes adoption by both public and private fleets**
 - While it might be tempting to fund public vehicles at the 100% level, this will limit the total number of deployed vehicles and therefore lessen the overall emission reductions
 - Funding levels should be large enough to offset the incremental cost (as compared to cost of a new diesel vehicle) of new, cleaner vehicles, as well as to address the fact that replaced vehicles must be scrapped
 - For private fleets, use available state funding sources to supplement the Volkswagen funds to ensure that new, cleaner trucks are truly incentivized by covering the full incremental cost (compared to baseline diesel vehicles) and to address economic loss associate with scrappage
- ✓ **Prioritize funding for clean vehicles rather than fueling infrastructure**
 - Funding should be used to incentivize fleets and vehicle acquisitions where existing fueling infrastructure exists to better support investments that have already been made
 - If fueling infrastructure needs to be developed, funding should be secured as part of private-public partnerships. Using the funding in this way will encourage additional economic development in the state and increase the availability of stations for future deployments

3. Available: NGVs Meet the Diverse Operating Requirements of Every Fleet Application

- ❖ **Key Point:** Dozens of models of medium- and heavy-duty low-emission natural gas vehicles and engines are commercially available from reputable, world-known OEMs with established sales and service networks.



Wide Array of NGV Options Commercially Available

There are many natural gas vehicle options available from several original equipment manufacturers (OEM). These vehicles can be purchased from the dealership through a process that has been streamlined for the customer.



Many other medium- and heavy-duty vehicle options are available through small vehicle modifiers (SVM). These companies manufacture conversion systems that have been certified and approved by the U.S. Environmental Protection Agency and/or the California Air Resources Board. These approved systems can be installed on new and used vehicles to run on natural gas.



Additionally, Cummins Westport currently offers the 6.7L ISB-G, 8.9L ISL-G and the 11.9L ISX-G natural gas engines. These spark-ignited engines are used in a variety of applications, including refuse trucks, transit buses, cement trucks, short- and regional-haul tractors, delivery trucks, school buses, and shuttles. Roush offers a school bus engine that is certified to the Low-NOx standard of 0.10. Retrofit and repower options are also available from a variety of manufacturers.

For a full list of EPA and CARB certified engines, visit www.ngvamerica.org/vehicles/vehicle-availability. A list of available NGV manufacturers and conversion companies follows.



HD Vocational OEMs

Autocar Truck
Capacity
Crane Carrier
Elgin
Johnston
Kalmar
McNeilus
Mack
Peterbilt
Power Solutions Int'l.
Schwarze
Tymco

HD Truck OEMs

Cummins Westport
Freightliner
Kenworth
Mack
Peterbilt
Volvo

HD Bus OEMs

Blue Bird Bus
DesignLine
El Dorado
Gillig
New Flyer/NABI Bus
NOVA Bus
Motor Coach Industries
Thomas Built Bus

HD Retrofit/ Repowers

American Power Group
Clean Air Power
Diesel 2 Gas
Fyda Energy Solutions
NGV Motori
Omnitek Engineering

MD Retrofits

AGA Systems
Altech-Eco
Crazy Diamond Performance
Greenkraft
Landi Renzo USA/Baytech
M-Tech Solutions
NAT G
NGV Motori USA
PowerFuel Conversions
Roush CleanTech
STAG
Westport Fuel Systems
Zavoli

Fuel Systems

Agility Fuel Systems
Mainstay
Momentum Fuel
Technologies

Critical Insight: Heavy-Duty Electric and Fuel Cell Vehicles are Not Commercially Available

As of today, three unique fuel-technology combinations hold the most promise to successfully transform America's HDV transportation sector to zero and near-zero emissions:

1. Near-zero-emission internal combustion engines fueled by conventional or renewable natural gas
2. Zero-emission battery-electric-drive systems
3. Zero-emission hydrogen fuel cell systems

While battery-electric and hydrogen fuel cell systems can offer extremely low emissions profiles, the lack of commercially available heavy-duty and limited medium-duty products and charging/fuel distribution networks makes implementation in the near future impractical. Furthermore, these vehicles are being developed by niche, start-up companies and have only been used in early test programs; comparatively, medium- and heavy-duty NGVs from major OEMs have been widely, commercially available in dozens of applications for over two decades. Near-zero-emission internal combustion engines fueled by conventional or renewable natural gas are the only option to immediately and cost-effectively provide extremely low NOx and GHG emissions in high-impact HDV sectors.

Related Recommendations for EMT Funding

✓ **Prioritize funding for commercially available products**

- Given that the NOx emissions from Volkswagen vehicles are already in the air, funding should be concentrated to projects that allow us to deploy the cleanest vehicles available today (i.e., not pre-commercial or research and development projects)

✓ **Scale funding to incentivize the cleanest engines available**

- Provide greater funding for medium- and heavy-duty engines that deliver NOx reductions over and above what is currently required for new diesel vehicles
- 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 and should not be used to fund more diesel fueled vehicles

Let's Transform Clean Transportation Together

NGVAmerica and its members are eager to serve as a resource to assist the State of Oklahoma in its evaluation and development of the state's Beneficiary Mitigation Plan. We strongly encourage the state to recognize the superior and unmatched role that natural gas vehicles can play in delivering nitrogen oxide (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 Oklahoma. Please contact Jeff Clarke, NGVAmerica General Counsel & Director Regulatory Affairs at 202.824.7364 or jclarke@NGVAmerica.org, or Sherrie Mellow, NGVAmerica State Government Advocacy Committee Chair at 303.883.5121 or smerrow@NGVAmerica.org to set up a meeting and for additional information.

Sincerely,



Matthew Godlewski
President

Summary of NGVAmerica's Recommendations for EMT Funding

- ✓ 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 to begin
- ✓ Prioritize funding for clean vehicles rather than fueling infrastructure
- ✓ Scale funding to incentivize the cleanest engines available
- ✓ Ensure that funding incentivizes adoption by both public and private fleets
- ✓ Accelerate the funding in the early years to maximize the NOx reduction benefits
- ✓ Given that the EMT was created because of NOx pollution associated with non-compliant diesel vehicles, 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

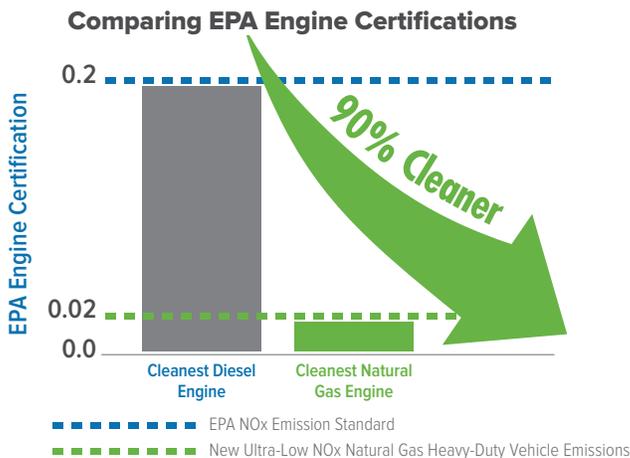
Make a Bold Impact on Air Quality Today

Allocating funds to deploy low-NOx natural gas vehicles provides the best way to deliver immediate and cost-effective NOx reductions and air quality benefit. Nearly 40% of Americans are exposed to unhealthful levels of ozone and particulate pollution. Volkswagen's \$2.9 billion Environmental Mitigation Trust fund provides each state an incredible opportunity to make an immediate and tangible impact on air quality by targeting medium- and heavy-duty vehicles, the leading source of these toxic air contaminants in almost every metropolitan area.

Natural gas vehicles (NGVs) are transforming the medium- and heavy-duty transportation sector.

Sustainable:

NGVs Offer the Cleanest Heavy-Duty Truck Engines in the World



Natural gas medium- and heavy-duty engines provide unmatched reductions of smog-forming emissions of nitrogen oxides (NOx). In 2015, a revolutionary natural gas engine was certified by the U.S. Environmental Protection Agency and California Air Resources Board to a level 90% below the EPA's current exhaust standard and 90% below the cleanest diesel engine. A truck with this engine has an emission profile equivalent to that of a heavy-duty battery electric truck.

Available:

NGVs are Commercially Available Today Across All Applications Qualified for Funding

NGVs are commercially available from traditional truck and bus OEMs with established sales and service networks. Retrofit and repower options are also available from a variety of manufacturers.

- Applications Include:**
- Heavy Semi Tractor
 - Single Axle Van
 - Cement Mixer
 - Large Walk In Van
 - School Bus
 - City Delivery Truck
 - Motor Coach
 - Shuttle Bus
 - Conventional Van
 - Rack Truck
 - Transit Bus
 - Dump Truck
 - Refrigerated Van
 - Tow Truck
 - Fuel Truck
 - Refuse Truck
 - Utility Truck

Responsible:

Dollar-for-Dollar, NGVs Deliver the Most Cost-Effective NOx Emissions Reductions

The calculations shown below assume the deployment of the cleanest commercially available model for each application. Funding natural gas vehicles will lead to the largest total reduction in NOx emissions.

Short/Regional Haul Trucks

<p>\$39 per lb of NOx</p> <p>Natural Gas Technology Cost \$150,000 NOx Reduced 3,810 lbs</p>	<p>\$54 per lb of NOx</p> <p>Diesel Technology Cost \$100,000 NOx Reduced 1,858 lbs</p>	<p>\$85 per lb of NOx</p> <p>Electric Technology Cost \$324,000 NOx Reduced 3,810 lbs</p>
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Refuse Trucks

<p>\$140 per lb of NOx</p> <p>Natural Gas Technology Cost \$300,000 NOx Reduced 2,141 lbs</p>	<p>\$190 per lb of NOx</p> <p>Diesel Technology Cost \$270,000 NOx Reduced 1,417 lbs</p>	<p>\$313 per lb of NOx</p> <p>Electric Technology Cost \$670,000 NOx Reduced 2,141 lbs</p>
--	--	--

School Buses

<p>\$220 per lb of NOx</p> <p>Natural Gas Technology Cost \$148,000 NOx Reduced 671 lbs</p>	<p>\$291 per lb of NOx</p> <p>Diesel Technology Cost \$115,000 NOx Reduced 396 lbs</p>	<p>Not Commercially Available</p> <p>Electric</p>
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Transit Buses

<p>\$273 per lb of NOx</p> <p>Natural Gas Technology Cost \$360,000 NOx Reduced 1,318 lbs</p>	<p>\$540 per lb of NOx</p> <p>Diesel Technology Cost \$300,000 NOx Reduced 555 lbs</p>	<p>\$569 per lb of NOx</p> <p>Electric Technology Cost \$750,000 NOx Reduced 1,318 lbs</p>
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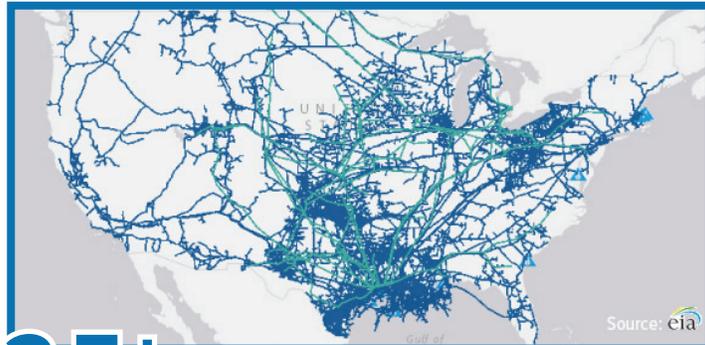
#1

Natural Gas Producer in the World



90+ years supply of recoverable natural gas

Continual supply by harnessing renewable sources



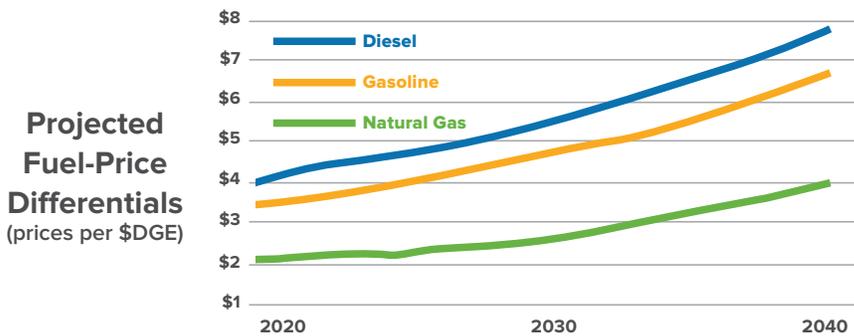
2.5+ million miles of U.S. pipeline infrastructure

The U.S.' expansive natural gas pipeline system is well poised to support a national network of natural gas fueling stations. Nearly 2,000 CNG and LNG fueling stations are operating today, with continual expansion underway.

Source: U.S. Energy Information Administration

Natural gas is a clean, low-cost, and domestically abundant transportation fuel.

Natural Gas Provides Long-Term Fuel Price Stability and Cost Savings



Source: U.S. Energy Information Administration

Natural Gas Reduces WTW Greenhouse Gas Emissions

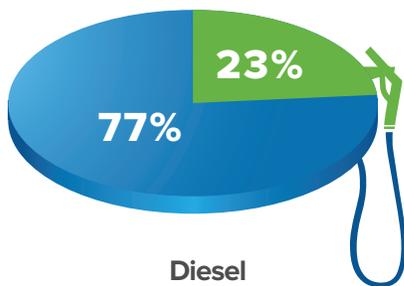
Compared to Diesel:

- LNG** 11% reduction
- CNG** 17% reduction
- RNG** 115% reduction

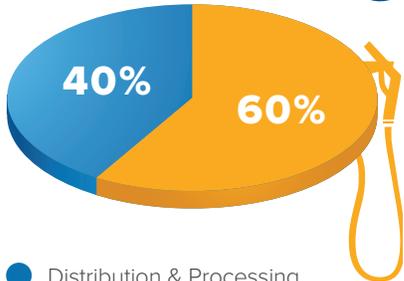


Source: NGV America Fleets Run Cleaner on Natural Gas White Paper 2016

Natural Gas



Diesel



- Distribution & Processing
- Natural Gas Commodity Cost
- Crude Oil Commodity Cost

Currently, natural gas prices can be \$0.75 to \$1 or more lower than diesel at the pump, with a firm price advantage expected to remain for decades as shown in the chart above.

Beyond the fuel-price differential, the pump price of natural gas remains relatively stable for two reasons. First, it is domestically sourced. Second, the commodity cost of natural gas only makes up 23% of the pump price so price fluctuations have minimal impact.

In contrast, approximately 60% of the price of diesel fuel is impacted by the market cost of crude oil, which is largely sourced from politically unstable, high-conflict regions. When crude oil prices increase, diesel prices follow suit which can lead to significant swings in a fleet's fuel costs.



Volkswagen EMT Funding Recommendations

- ✓ Fund alternative fuel vehicle projects that cost effectively maximize NOx reductions for both public and private fleets
- ✓ Provide higher funding levels for medium- and heavy-duty engines that deliver NOx reductions greater than current EPA standards
- ✓ Target funding for technologies that have demonstrated lower in-use emissions
- ✓ Prioritize funding for commercially available products and projects that are ready to begin
- ✓ Stay flexible in plans and leverage private investment to stretch dollars and get more alternative vehicles on the road

Natural gas vehicles can fulfill all of these recommendations today!



P. O. Box 112
Seminole, OK 74818-0112

OKLAHOMA LIQUEFIED GAS
SEMINOLE, OKLAHOMA

Phone (405) 382-3356

— Serving Oklahoma's Propane Needs Since 1937 —

May 23, 2018

Heather Lerch
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101

Re: Volkswagen Settlement

Dear Ms. Lerch,

We at Oklahoma Liquefied Gas would like to be a part of making the environment safe for the children of Oklahoma. We can do that by helping schools introduce Propane powered school buses to their fleet. Propane powered school buses can reduce the amount of harmful diesel emissions – known aggravators of asthma and other breathing issues – around students. Using Propane powered buses Schools could also significantly reduce Nitrogen Oxide emissions, depending on the amount of older diesel buses still operating in their fleet.

Clean Diesel buses come with a hefty price tag for complicated emissions-reduction technology. Infrastructure cost for other alternative fuels are unaffordable for most school districts. While Propane will reduce Nitrogen Oxide emissions and provide safe affordable onsite infrastructure. That can be scaled for the individual school district's needs. By using Propane with these cost saving advantages schools will save money for what matters most – more teachers, classroom supplies, extracurricular programs and more.

Switching from conventional fuel to propane is quick and cost effective, because the requirements for a propane vehicle repair facility are generally the same as those for conventionally fueled vehicles. Other alternative fuels, however, may require different facility requirements than conventional fuels, like additional gas detection and ventilation equipment - costing fleets more to switch.

Please see the attached information from the Propane Education & Research Council on the Volkswagen Settlement and from Alvin ISD a Texas School district on their experience with propane powered school buses. Alvin has used propane powered school buses for 31 years.

Oklahoma Liquefied Gas, Inc (OLG) would love to be a part of making the environment safe for Oklahoma children.

Oklahoma Liquefied Gas, Inc.

Kenneth R. Green

President

— PROPANE EQUIPMENT FOR ANY PURPOSE —



DRIVE THE FUTURE

RESOURCE TOOLKIT

Bring Propane School Buses to Your Community



VOLKSWAGEN SETTLEMENT

MOVE FORWARD WITH PROPANE AUTOGAS SCHOOL BUSES



The unique benefits of this clean, American fuel make it the perfect solution for schools to cut emissions while saving more for what counts.

THE GOAL

The Volkswagen Environmental Mitigation Trust Fund will financially support actions that reduce Nitrogen Oxide (NO_x) emissions in the United States. The amount of funds distributed will vary by state or territory, depending on the number of non-compliant Volkswagen vehicles that were registered there.

YOUR OPPORTUNITY

Your state should seriously consider including propane-powered school buses in their plans to utilize the Volkswagen settlement funds. With propane buses, you can reduce the amount of harmful diesel emissions — known aggravators of asthma and other breathing issues — around students. You could also significantly reduce NO_x emissions, depending on the amount of older diesel buses still operating in your state.



THE SWITCH	REDUCED NO _x EMISSIONS
Replace all older than model year-2007 diesel buses with new propane autogas buses.	More than 96 percent ¹
Purchase a new propane autogas bus instead of a modern, lower-emissions diesel bus.	More than 11 percent ²
Purchase a modern, best-in-class for NO _x emissions propane bus instead of a modern diesel bus.	75 percent ³

1. Source: AFLEET model using Polk Registration data by state for diesel buses — June 2017. By removing 225,989 of pre-2007 diesel fueled buses from the road across the country and replacing them with new propane autogas school buses, NO_x emissions would be reduced by 96 percent.

2. MY2016 certification data for PSI 8.8L propane model compared with Cummins 6.7L diesel model.

3. CARB low NO_x certification data for MY2017 Rough 6.8L propane model compared with MY2016 Cummins 6.7L diesel model.

"I think the environmental aspect of it is important to a lot of people, especially parents with young children."

Brian Woods
 Superintendent, Northside
 Independent School District
 San Antonio, Texas

Read on to learn how propane gives you clean performance at the lowest total cost-of-ownership.



DON'T MISS OUT ON PROPANE

So-called new, “clean diesel” buses come with a hefty price tag for complicated emissions-reduction technology. Propane buses reduce NO_x emissions while helping schools save for what matters most — classroom supplies, more teachers, extracurricular programs, and more.



LOWEST TOTAL COST-OF-OWNERSHIP

The costs of diesel add up quickly: expensive fuel, additional fluids, and pricey particulate filters. These are the most influential reasons why propane buses save schools more money, from purchase to retirement of the asset.



MORE UPTIME

With propane, schools can eliminate downtime linked directly to maintenance and unexpected repairs. Propane buses also provide superior cold-weather performance compared with diesel.



SAFE FOR EVERYONE

Propane buses operate noticeably quieter than diesel models, allowing drivers to better focus on their passengers and the road. Standard safety features designed into propane bus fuel systems provide added peace of mind for everyone.



AFFORDABLE INFRASTRUCTURE

School districts can choose private, on-site refueling infrastructure scaled for their needs, or take advantage of existing public or private refueling networks. Go to propane.com to learn more about standard private stations and advanced private stations, including typical costs. There's sure to be a perfect refueling setup for your district's needs.



AMERICAN FUEL

Using propane school buses supports our country's economy — nearly 90 percent of propane supplies are produced in the U.S.

STOP OVERSPENDING ON DIESEL

Propane gives you clean performance while lowering your cost-of-ownership in three key areas:



FUEL

The cost of wholesale propane falls between the price of oil and natural gas, the fuel's two sources. As a result, propane is almost always less expensive than conventional fuels, even as fuel prices fluctuate.



FLUIDS

New, lower-emissions diesel technology comes with an added inconvenience: diesel emissions fluid to purchase, store, and change. This is on top of needing more oil by volume compared with propane. In cold temperatures, diesel vehicles also require anti-gelling agents to prevent clogging of fuel filters and lines. Propane provides reliable performance without additional fluids.



FILTERS

To meet emissions requirements, new diesel technology requires diesel particulate filters that must be cleaned periodically. Excessive idling will accelerate cleaning intervals. Either way, extra maintenance expenses are piled on top of additional lifecycle costs. Propane autogas is an opportunity to avoid these headaches.

SWITCHING IS EASY

MAINTENANCE FACILITY NEEDS

Switching from conventional fuel to propane is quick and cost-effective, because the requirements for a propane vehicle repair facility are generally the same as those for conventionally fueled vehicles. Other alternative fuels, however, may require different facility requirements than conventional fuels, like additional gas detection and ventilation equipment — costing fleets more to switch.

Contact your local Authority Having Jurisdiction for applicable codes regarding building or modifying a propane-powered vehicle repair or maintenance facility.

Don't hesitate to start cutting emissions while enjoying the lowest total cost-of-ownership available.

Go to propane.com to learn more about propane autogas buses today.



PROPANE AUTOGAS PROVES A PERFECT FUELING SOLUTION FOR TEXAS SCHOOL DISTRICT

A PROPANE CASE STUDY

ALVIN ISD OPERATES PROPANE AUTOGAS SCHOOL BUSES FOR 31 YEARS, SAVES 37-CENTS PER MILE COMPARED WITH DIESEL

Alvin ISD, a Texas school district just south of Houston, converted its school bus fleet to propane autogas following the energy crisis of the 1970s. Fuel access and pricing was starting to hinder the district's transportation department, and, after researching alternative fuels, the district switched to propane autogas in 1982. Thirty-one years later, Alvin ISD operates more than 100 propane autogas school buses that travel nearly one million miles each year combined.

ADVANCED TECHNOLOGY INCREASES EFFICIENCY

Today, more than half of Alvin ISD's buses run on propane autogas, including 70 dedicated propane Blue Bird Vision Type C buses and 36 converted gasoline buses. The remaining fleet is made up of 80 diesel-fueled buses. According to Juan Mejias, Alvin ISD's fleet maintenance manager, drivers have developed a preference for the propane autogas buses, and the district relies on them for their power and ease in maintenance.



"Our bus drivers love the acceleration with propane autogas," Mejias said. "When we take the buses out of rotation for routine maintenance and drivers use the spare diesel buses, they come back and ask us how soon they can get their propane bus back. The drivers don't have the same hesitation accelerating and merging in traffic like they do with the diesel buses. The performance is that good."

After three decades with propane autogas, the district has witnessed noticeable improvements in engine technology over the years. New Blue Bird Vision buses are equipped with clean-burning Roush CleanTech liquid propane autogas fuel systems, and Mejias reports they are simpler and easier to service.

"The overall cost and maintenance is the best," Mejias said. "It's very easy for me to get a mechanic over and get work done in a very short period of time on our propane-autogas-powered buses. With our diesel buses, there are additional filters to change and more components to look at." Mejias explained that with diesel, the buses have particulate filter and exhaust gas recirculation (EGR) systems that require continual upkeep.

COMPANY

Alvin Independent School District (ISD)
Alvin, Texas

CHALLENGE & SOLUTION

Following the energy crisis of the 1970s, Alvin ISD converted its school buses to propane autogas to overcome supply shortages and price spikes with gasoline. Thirty-one years later, the district transports 8,000+ students daily and reports reduced maintenance, improved performance, and substantial cost savings.

RESULT

- School district saves 50 percent on fuel costs annually compared with conventional fuels.
- High-volume propane autogas infrastructure cuts refueling time in half.
- Propane-autogas-powered buses reduce maintenance, downtime and meet Texas Commission on Environmental Quality Clean School Bus Program requirements.

HIGH PERFORMANCE, LOW MAINTENANCE

On average, Alvin ISD retires its buses every 13 to 14 years, with each propane autogas bus running approximately 270,000 to 280,000 miles during its lifetime. When maintenance costs such as routine oil changes are calculated over the lifetime of the bus, savings with propane autogas versus conventional fuels compounds quickly.

"We've experienced extended oil changes to every 10,000 miles with propane compared with 6,000 or 7,000 miles with diesel," Mejias said. "That's a big savings over time."

Savings in maintenance and oil changes alone can add up quickly with a large bus fleet like Alvin ISD's. When the district adds its lower fuel cost into the calculation, Alvin ISD easily doubles its total savings with propane autogas.

"We've been using propane autogas for decades, and we have always seen substantial cost savings, even without the federal credit," Mejias said.

In a head-to-head comparison between 56 of the district's propane autogas buses and 56 diesel buses, propane autogas cost the district 37-cents less per mile to operate than the diesel-fueled buses before the 50-cent tax credit. Additionally, the fleet of propane-autogas-powered buses traveled nearly 500,000 more miles than the diesel buses for the same fuel cost.

HIGH-POWER PUMPS REDUCE REFUELING TIME

Propane autogas provides an affordable infrastructure solution for school bus fleets using a central refueling station. For Alvin ISD, new propane autogas infrastructure has saved the district both time and money.

The district recently used an \$80,000 grant to upgrade to a higher volume pump and dispenser to service its growing propane autogas bus fleet. Alvin ISD currently operates an 18,000-gallon tank with three dual dispensers, allowing them to fuel six buses at the same time.

"The new pumps allowed us to refuel more buses at once and practically cut refueling time in half," Mejias said. Additionally, Mejias credits the service of their propane retailers with providing reliable 24/7 service for the district, eliminating supply issues of previous decades.

"They [propane retailers] go out of their way to make sure they deliver our fuel on time," Mejias said. "Even if it's at midnight or four in the morning -- they'll make sure we have the fuel we need to get the job done."

CLEAN, GREEN FUEL

While Alvin ISD has seen many long-term financial benefits of fueling with propane autogas, the district's alternative fuel buses also help it meet environmental standards in the state. Propane autogas buses burn cleaner than conventional fuels and are exempt from state idling restrictions and emissions testing. Alvin ISD's fleet also

meets all Texas Clean School Bus Program requirements set by the Texas Commission on Environmental Quality (TCEQ).

"With propane, the buses run clean so there's really no emission component when it comes to meeting state standards. We haven't had to worry about any issues."

— Juan Mejias
Fleet Maintenance Manager
Alvin Independent School District

In 2012, the World Health Organization classified diesel exhaust from buses manufactured prior to 2007 as a carcinogen that can have long-term health effects, especially on children. Propane-autogas-powered buses also emit 11 percent fewer greenhouse gas emissions than gasoline.

"To me, it's a no brainer to use propane autogas," Mejias explained. "The new [propane autogas] buses have the perfect engine and performance. Propane [autogas] runs cleaner, it's low maintenance — it's the perfect fuel to use for a school bus."

FOR MORE INFORMATION

To learn more about propane autogas, and the Propane Education & Research Council, visit propane.com/on-road-fleets.

Propane Education & Research Council / 1140 Connecticut Ave. NW, Suite 1075 / Washington, DC 20036
P 202-452-8975 / F 202-452-9054 / propanecouncil.org

The Propane Education & Research Council was authorized by the U.S. Congress with the passage of Public Law 104-284, the Propane Education and Research Act (PERA), signed into law on October 11, 1996. The mission of the Propane Education & Research Council is to promote the safe, efficient use of odorized propane gas as a preferred energy source.

From: Sean Gibson <gibson0903@gmail.com>
Sent: Wednesday, May 23, 2018 3:19 PM
To: DEQ VW Settlement
Subject: Support for EV and charging stations

Please allow this email to support the investment in electric vehicles and charging infrastructure using the VW Settlement.

Thank you,
Sean Gibson
3916 W Orlando St
Broken Arrow, OK 74012

May 23, 2018

Heather Lerch
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101

Via Email: VWSettlement@deq.ok.gov

RE: SemaConnect Comments on Oklahoma's Proposed VW Beneficiary Mitigation Plan

Dear Ms. Lerch:

SemaConnect respectfully submits the following recommendation in response to the Department of Environmental Quality's invitation for public comment on the proposed [Volkswagen \(VW\) Beneficiary Mitigation Plan \(BMP\)](#).

Recommendation

- **Utilize the maximum 15% allowable to fund light duty electric vehicle (EV) charging infrastructure**

In 2016, transportation [dethroned](#) electricity generation to claim the dubious distinction as the highest polluting sector in our economy. In fact, transportation was the only consumption sector where carbon emissions increased. It now accounts for more than one-fourth of all U.S. greenhouse gas (GHG) emissions. In Oklahoma, that percentage is even higher: the most recent data [shows](#) that transportation is responsible for 32% of all carbon emissions statewide.

Electrification of transportation is essential in order to decarbonize our transportation sector and achieve cleaner, healthier air because EVs emit far less pollution than gas-powered vehicles. A recent Union of Concerned Scientists (UCS) report [confirmed](#) that even after taking into account EVs' more electricity-intensive manufacturing process, battery electric vehicles (BEVs) produce less than half the GHG emissions as comparable gas-fueled cars over their full life cycle.

Charging infrastructure is the *sine qua non*—the essential ingredient—necessary to move EV adoption beyond the early adopters and into the mainstream. Drivers of gas vehicles take for granted their ability to fuel up wherever they go, because gas stations have spread like wildfire since the first “filling station” opened in Pittsburgh in 1905. On the other hand, publicly accessible EV charging infrastructure is not

readily available outside of a handful of markets. This “relative lack of charging infrastructure” holds back widespread adoption of EVs, [according to](#) the Financial Times. Indeed, the International Energy Administration (IEA) [reports](#):

“Charging infrastructure, whether at home, at work or at public locations, is indispensable for operating EVs... *the availability of chargers [is] one of the key factors for contributing to the market penetration of EVs.*”
(emphasis added)

In Oklahoma, the need for more public charging stations is clear. [According to](#) the U.S. Department of Energy’s Alternative Fuels Data Center, Oklahoma currently has only 44 publicly accessible stations with a combined total of 107 Level 2 or DC Fast charging outlets statewide. Given this paucity of publicly-available charging infrastructure, it is unsurprising that the draft BMP states: “During the stakeholder process, near unanimous support was given to use all 15% allowed towards publicly accessible ZEV electric charging stations” (page 3).

For these reasons, SemaConnect concurs with the BMP’s recommendation to allocate the maximum allowable 15% of Trust funds for light-duty EV infrastructure.

About SemaConnect

SemaConnect is the leading provider of electric vehicle (EV) amenities to the North American commercial and residential property market. We are a proven partner to premier properties across the nation and have built trusted relationships with some of the most well-known commercial brands in the building space such as CBRE, JLL, Hines, Greystar, Cisco Systems and Standard Parking. With gorgeously-designed stations, smart engineering and software controls to maximize uptime, and a truly open user network with robust tools for measuring and collecting valuable data, property owners, managers and clientele can realize unsurpassed value with SemaConnect’s EV solutions.

SemaConnect is American-owned and we design, assemble and distribute all of our products at our headquarters in Maryland.

Thank you for this opportunity to offer input, and for your consideration in this important matter. If SemaConnect can provide additional information about its products or otherwise be helpful, please do not hesitate to contact me directly at josh.cohen@semaconnect.com.

Respectfully submitted,



Josh Cohen
Head – Public Programs



Eric Pollard
Clean Cities Coordinator
Community & Economic Development
epollard@acogok.org

Comments to ODEQ regarding Volkswagen Beneficiary Mitigation Plan Draft

ACOG appreciates DEQ's balanced proposal regarding the types of projects the state is considering for VW funding projects and the prioritization of Central Oklahoma Counties for mitigation projects. ACOG and ODEQ will continue a strong partnership protecting public health and improving air quality through individual and institutional mitigation actions.

A. Cost Eligibility

In determining how much certain projects are funded, the state should actively seek input from both public and private fleets regarding the cost-effectiveness of certain cost reimbursement percentages. For many fleets, seeking VW trust funding will not be cost effective at certain cost reimbursement percentages due in large part to lost revenue from vehicle scrappage versus auctioning of replaced vehicle(s).

This outreach to fleets could help DEQ assess demand for VW environmental mitigation funding categories.

More details regarding cost reimbursement and match requirement will better allow businesses and governmental entities to plan for VW settlement funded projects.

The state may also need to verify if there will be any statutory requirements related to disposal of a working vehicle that may conflict with the settlement's scrappage requirements and if waivers may be required.

B. Preference for Alternative Fuel Replacement

With only specific exceptions, we recommend the State should allocate funds to medium and heavy-duty vehicle replacement projects in which vehicles are replaced with alternative fuels.

The state has made significant investments in alternative fuel infrastructure and planning.

Alternative fuel development supports Oklahoma businesses that source the fuels, build the stations, and purchase the fuel for their fleets. A prioritization of alternative fuels supports state goals such as alternative fuel corridors, energy resiliency, air quality improvement.

C. Light Duty Zero Emission Vehicle Supply Equipment

ZEV supply equipment installations should be focused first along highway corridors (including both interstate highways and heavily traveled state highways). Level 2 (workplace and public) charging should be included only if it can be shown that there will be daily demand for this type of charging.

Oklahoma Electric Vehicle Coalition partners are focused on statewide adoption of electric vehicles, including rural areas. Both urban and rural EV adoption growth are important in reducing emissions. The state should work to identify partners for the most shovel-ready EVSE installations.

The state should consult with utilities, EVSE supply equipment companies, and various governmental agencies to determine the best course of action on location of charging stations, number of chargers per location, ownership structure, and maintenance requirements.

ACOG staff can assist the state by reviewing best practices with VW ZEV funding programs in other states.

From: ann.bornholdt@att.net
Sent: Thursday, May 24, 2018 7:48 PM
To: DEQ VW Settlement
Subject: Oklahoma VW Settlement

The following message has been sent by Ann Bornholdt

According to the EPA, transportation is one of the largest sources of NOx and other greenhouse gas emissions in the United States with emissions from the transportation sector accounting for over one fourth of all greenhouse gas emissions in 2014. The funding from this settlement can be used to help electrify the transportation sector and eliminate one of our biggest sources of pollution. This pollution reduction will improve human health as well as mitigate impacts on climate change. The settlement funds should be focused on EV infrastructure * Implementing EV infrastructure including charging stations in public areas, at multi-dwellings and work places as well as highways. * Outfitting public transit and school transportation systems with electric buses * Building out government fleets with electric vehicles, especially trucks



ChargePoint, Inc.

254 East Hacienda Avenue | Campbell, CA 95008 USA
+1.408.841.4500 or US toll-free +1.877.370.3802

May 24, 2018

Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101-1677

RE: Comments on Proposed Mitigation Plan for the Volkswagen Environmental Mitigation Trust

ChargePoint is pleased to provide written comments to the State of Oklahoma regarding the best use of funds stemming from the VW settlement and the State's allocation from the Environmental Mitigation Trust. The Trust funds provide a significant opportunity for the State to mitigate the environmental harm VW diesel vehicles caused, as well as advance key transportation segments that produce long-term benefits to the State and its communities.

In summary, ChargePoint commends Oklahoma for committing the maximum 15% of its Trust allocation towards smart, light-duty electric vehicle (EV) charging infrastructure. Additionally, we urge the State to consider prioritizing investment into projects utilizing electricity as a fuel and that utilize a standard connector. We believe that this investment in transportation electrification significantly contributes to the NO_x mitigation goals of the Environmental Mitigation Trust, and NO_x reductions from charging sessions are easily and empirically calculable. Moreover, funding for EV infrastructure is needed to meet the demands of today's 2,020 EV drivers in Oklahoma, let alone support the exponential growth of EVs in years to come. In a state that currently has just 107 public charging spots, this small portion of the investment could support over 400 additional public charging stations deployed in communities across Oklahoma.

ChargePoint is the largest electric vehicle (EV) charging network in the world, with charging solutions for every charging need and all the places EV drivers go: at home, work, around town, and on the road. With more than 49,000 independently-owned charging spots and thousands of customers nationwide, ChargePoint drivers have completed more than 37 million charging sessions, saving upwards of 36 million gallons of fuel and driving more than 903 million electric miles. In addition, there are currently more than 20 ChargePoint public charging spots in the State of Oklahoma.

Recommended Eligible Mitigation Projects in Oklahoma: EV Charging and Electrification

ChargePoint strongly recommends that Oklahoma continue to commit the maximum allowable 15% for light-duty electric vehicle charging. The State's investment of just 15% could contribute to the deployment of nearly nine hundred charging spots. A simple rebate program providing \$7,000 per dual port Level 2 charging station would support 896 new charging spots.

Example:

- \$3,138,372 Trust Funds ÷ \$7,000 rebate per dual port charging station = **448 dual port charging stations**
- 448 dual port charging stations x 2 charging ports on each station = **896 charging ports**

3. 15% for charging infrastructure will make Oklahoma a leader in advanced transportation technologies.
 - 34+ States have already determined electric vehicle service equipment (EVSE) as part of their draft or final beneficiary mitigation plans.
 - Current infrastructure is not adequate to meet the needs of today's EV drivers and prepare for future projected growth.
 - States are currently competing for preparedness in electrification, and Trust funds provide a unique opportunity Oklahoma to lead and become a target for investment.

4. 15% for charging infrastructure is part of a resilient transportation sector.
 - Charging is powered by the grid and keeps transportation fuel local.
 - Transportation fuel diversity mitigates risks for Oklahoma and its drivers.
 - Infrastructure is currently needed along evacuation routes, in order to address range security at a time of emergency.

Designing the right EV charging program for Oklahoma under the Trust

Light-duty electric vehicle infrastructure funding programs can be flexible in how they are distributed, whether they are solely responsive to the demand from the market and site hosts, targeted to specific use cases and geographically based allocations, or a hybrid of factors for distribution.

Light-duty electric vehicle charging infrastructure projects can align with the State's goals for the EV charging sector and complement existing infrastructure. Existing deployments in Oklahoma have focused around key municipalities and areas of higher density, but there are gaps to address in order to promote broader EV adoption in all communities. DEQ should determine that a funding program be designed to target areas that will drive the greatest near- and long-term utilization of charging assets. Focusing on utilization will significantly contribute to the success of the State's deployment. Additionally, the program can be structured to concentrate on local emissions reductions and prioritize specific non-attainment zones.

In general, ChargePoint recommends that DEQ focus on Level 2 charging stations for municipalities and local points of interest, where people may dwell for longer periods of time. Rebate programs are effective in expediting charging station deployments and attracting a wide variety of site hosts. Rebate programs can be targeted to specific areas such as county, zip code, or city. Eligible regions or areas can be prioritized by NO_x emissions estimates, socioeconomic factors, traffic flows, and other factors. Rebate programs are typically first-come, first-served and support accelerated deployment with low administrative effort. In ChargePoint's experience, allowing for site hosts (ex. workplaces and retail establishments) to own and operate charging equipment, have skin in the game with a financial cost share, and manage the charging at their sites will lead to the highest utilization and best deployment.

Should the State decide to include DC fast charging technologies, ChargePoint supports flexible incentive programs, designed to accommodate a range of sites and circumstances. These deployments should be evaluated on a case-by-case basis. Detailed evaluation criteria should be included in a competitive solicitation. For example, competitive solicitations for DC fast charging projects can target specific corridors or areas. We believe these program designs will allow the competitive market for charging

infrastructure to drive demand from eligible site hosts, while remaining responsive to the State's priorities for Trust funding.

EV Charging Technology: Make Smart Technologies a Standard Qualification

ChargePoint strongly recommends that the State make smart, networked charging features a prerequisite for EV charging program funding. Smart charging infrastructure is cloud-enabled to collect and report real-time data on charging sessions, including energy use, frequency and duration of sessions, pricing, and availability to drivers. There are several reasons for incorporating only smart charging in this program:

1. Data from smart charging sessions can be used, real-time, to report NOx emissions mitigation.
2. Smart charging stations display availability to drivers and appear on maps, which helps promote driver confidence and greater utilization.
3. Charging networks allow site hosts to set pricing to drivers, which can help the business case for installation of charging assets and incent good charging behaviors.
4. Data from charging stations can be aggregated on any level (single station, region, state) to give the State insights into charging habits and inform transportation and grid planning.
5. Networked charging stations include remote diagnostics and "remote start" capabilities.
6. Software and firmware updates are made over the air, eliminating the need for a technician to visit site for vehicle or standards compliance updates.

None of the above functionalities are available on non-networked stations, and we believe and our experience shows that networked features carry a range of benefits for states, utilities, site hosts, and drivers. In addition, we believe that all of the above functionalities should be considered as baseline eligibility criteria.

Remaining 85% of Funds: Priority for Electrification Technologies

Beyond the 15% allocation to EV charging infrastructure, ChargePoint encourages the State to allot a significant portion of the remaining 85% to electric fuel project categories over other fuel types, which will lead to long-term transportation emissions reductions and increased efficiency.

Under the terms of the Environmental Mitigation Trust, funds used for transportation electrification projects in multiple categories may cover the cost of the vehicle/engine and associated charging infrastructure. ChargePoint notes that many of these technologies utilize a standard connector, which can increase economies of scale as the State procures supporting charging infrastructure across eligible project types. For example, investing in electric models and associated infrastructure could enable public light-duty charging stations to be utilized for bus charging and other fleet needs. In addition, across applications in the same category. Shuttle bus electrification could support regional, municipal, and school bus fleets.

Conclusion

Thank you for your continued public engagement and consideration of our comments. ChargePoint looks forward to continuing to be a resource to the State of Oklahoma as it designs a program to bring the benefits of electrification to communities across the State.

Sincerely,

A handwritten signature in black ink, appearing to read "David Schatz". The signature is fluid and cursive, with the first name "David" written in a larger, more prominent script than the last name "Schatz".

David Schatz
Director, Public Policy
ChargePoint



May 24, 2018

Heather Lerch
Air Quality Division
P.O. Box 1677
Oklahoma City, Oklahoma 73101

RE: Proposed Beneficiary Mitigation Plan

Dear Heather,

Greenlots appreciates the opportunity to provide the Department of Environmental Quality (DEQ) with comments on the Proposed Beneficiary Mitigation Plan (BMP), and recommendations for funds disbursement.

Greenlots is a leading provider of electric vehicle (EV) charging software and services. The Greenlots network supports a significant percentage of the DC fast charging infrastructure in North America. Greenlots' smart charging solutions are built around an open standards-based focus on future-proofing while helping site hosts, utilities, and grid operators manage dynamic EV charging loads and respond to local and system conditions.

Greenlots is strongly supportive of DEQ's proposal to invest the full 15% allowable for light-duty EV charging infrastructure, which is critical to supporting EV adoption across the State. We support DEQ's focus on light-duty EV charging infrastructure, rather than hydrogen fuel cell refueling equipment. There are substantially more EV makes and models available as compared to hydrogen vehicles, and there is a much clearer immediate market pathway for EVs. Maximizing investment in light-duty EV charging infrastructure complements other State initiatives, including advancing public health, economic, and environmental goals. Due to the emissions associated with light-duty vehicles, the 15% light-duty charging investment represents a critical step toward enabling long-term emissions reductions of NOx.

There is a substantial need for near-term investments in a more robust statewide DC fast charging network, which can facilitate long-distance travel and provide drivers with local publicly accessible infrastructure that can help ameliorate range anxiety. The chargers can help meet the needs of EV drivers who need to charge on the go, rather than where the car is parked for more than an hour or two. Level 2 charging will be an important asset for locations with long-dwell times, such as destination locations, workplaces, or to support fleet charging. Greenlots supports DEQ's proposal to incorporate the 15% investment in light-duty EV charging as part of an early funding phase. EV charging will be more effective (and help immediately reduce NOx) if infrastructure is installed in the near-term. This investment by the State can transform the market, spur EV adoption, and lead to accelerated EV charging options.

We also have considerations for DEQ on how to structure EV infrastructure funds disbursement. Because of the costs associated with deploying infrastructure – which have thus far proven to be uneconomic for the private sector – DEQ has an important role to play in designing an effective proposal process in which Trust funds are appropriately matched to site hosts that are prepared for long-term operation and maintenance of charging infrastructure. At this early stage of the market, ownership and operation of charging infrastructure is an appropriate and in many respects necessary role for established actors (e.g., utilities, cities) that are best positioned to steward and maintain infrastructure and arguably least (or less) sensitive to the financial pressures associated with ongoing operation of charging infrastructure.

Greenlots recommends the following proposal considerations:

- Develop a statewide EV charging infrastructure plan, prior to deploying Trust funds, as the basis for identification of key sites or jurisdictions that can help facilitate the build-out of EV charging. This needs analysis, although ineligible for funding within the Trust, can be a valuable guide for criteria assessment and site selection to ensure that Trust investments are maximized across the State. The proposal would be structured such that the priority investment locations are installed first.
- A proposal could/should be designed such that individual site hosts do not apply for the funds. Instead, a few program entities should be funded by the State to provide EV charging (either within a turnkey structure or as broader partnerships). Funding one or a few program entities (e.g., utilities, municipalities, a new ODOT unit, etc.) can help ensure more adequate statewide coverage and that site hosts are properly vetted and considered. Turnkey services by such a program entity could include site acquisition, and the purchase, installation, operation and maintenance of EV infrastructure. Lowest cost of providing EV infrastructure should not be the only consideration of this proposal. DEQ should also consider customer service, expertise in developing similar charging programs, ability to integrate with the grid, etc. As the RFP or grant process represents a considerable statewide investment in EV charging, it is vitally important that funds are allocated in a manner that creates a positive EV driver experience and encourages further development of the charging market within the State.
- Require that any EV infrastructure investments adhere to the latest open standards, which can help minimize the likelihood of stranded assets.
- Encourage development of DC fast charging, particularly to facilitate corridor and tourism travel, and Level 2 charging at workplaces and multi-unit dwellings.

For the remaining 85% of funds, Greenlots encourages DEQ to consider use of a comprehensive lifecycle cost and benefit analysis, which should capture the long-term emissions benefits, cost savings, and potential to mitigate climate change. This represents a more accurate cost-benefit analysis, rather than using dollars per pound of lifetime NOx emissions. While electric buses and vehicles have higher up-front costs, they have significantly reduced fuel and maintenance costs, a longer vehicle lifespan, greater potential to reduce criteria air pollutants and greenhouse

gases, and provide health benefits for workers, schoolchildren, and community members. If DEQ only considers short-term NOx reductions, it is conceivable that the State may be inadvertently locked in to a fossil fuel paradigm that could have been mitigated through a more robust approach in the Beneficiary Mitigation Plan.

As such, we encourage DEQ to maximize or otherwise consider a specific carve out for transportation electrification opportunities, including for Class 4-8 electric fleet, transit, shuttle, and school buses. By investing in transit and school bus electrification, Oklahoma would be providing direct benefits to populations that may not directly benefit from light-duty EVs or EV charging; bus charging provides both direct and indirect public health and social welfare benefits for transportation users and many surrounding communities – many of which tend to bear a disproportionate share of pollution (e.g., NOx, SOx, PM). Furthermore, electrification of transit and school buses is a natural fit to provide benefits in disadvantaged and environmental justice communities, which often bear the highest burden of emissions exposure.

We recommend DEQ target deployment of Class 4-8 electric fleet, transit, shuttle, and school buses based on emissions exposure (e.g., around the Oklahoma City and Tulsa Metropolitan Statistical Areas), but encourage the EV charging network to be implemented statewide without regard for pollution concentration – more appropriate metrics for infrastructure siting can include driving patterns and gaps in current deployments to ensure that EV drivers have capacity to traverse the entire state.

A transformative strategy in the Beneficiary Mitigation Plan can lead to long-term emissions reductions—but this objective can only be achieved with wide-scale transportation electrification. This is an opportunity for DEQ to set in motion long-term air quality benefits, above and beyond simply mitigating the excess NOx from the affected Volkswagen vehicles, and plan for Oklahoma’s future transportation system.

Thank you for your consideration. Greenlots will be available as a resource to DEQ through the finalization and implementation of the Beneficiary Mitigation Plan. Please do not hesitate to contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas Ashley', with a stylized, cursive script.

Thomas Ashley
Vice President, Policy



May 24, 2018

Mrs. Heather Lerch
Oklahoma Department of Environmental Quality
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101

INCOG comments regarding the Oklahoma Department of Environmental Quality's Proposed Volkswagen Beneficiary Mitigation Plan (BMP).

The Indian Nations Council of Governments (INCOG) is a voluntary association of local and tribal governments in the Tulsa metropolitan area in northeast Oklahoma. INCOG provides local and regional planning, information, coordination, communications, implementation and management services to member governments and their constituent organizations. INCOG is the designated Metropolitan Planning Organization (MPO) for the Tulsa metropolitan area and widely recognized as the planning agency for air quality issues in the region.

INCOG is the designated host of the US Department of Energy's Clean Cities program for eastern Oklahoma and manages the Tulsa Area Clean Cities Coalition, a regional government and business partnership promoting alternative fuels for air quality improvement, energy security and economic development.

Through INCOG's leadership, the region boasts a long history of regional partnerships and cooperative voluntary initiatives, such as the Ozone Alert! Program, which have provided the economic stability of federal air quality standard compliance as well as dramatically improved air quality.

INCOG recognizes the unique opportunity provided through Oklahoma's funding allocation from the Volkswagen Mitigation Trust and is greatly encouraged by Oklahoma's Proposed Beneficiary Mitigation Plan, released on April 24, 2018.

At this time, INCOG has no intention of applying for VW funding. However, based on our decades of experience in working with regional air quality and alternative fuel policy and programs, as well as receiving and administering grants, INCOG respectfully submits the following comments upon review of the proposed BMP:

- The Tulsa and Oklahoma City Transportation Management Areas are responsible for a disproportionate share of the statewide air pollution burden. INCOG applauds DEQ's recognition of this through prioritization of mitigation actions aiming to reduce emissions in areas with higher likelihood of exceeding NAAQS.
- INCOG applauds DEQ for allocating 15% of the funds to electric vehicle charging. This funding represents an opportunity to build a statewide, cohesive public charging network that will allow more Oklahomans to choose electric vehicles for their next vehicle purchase.

- In order to ensure a cohesive, efficient, and effective charging network is created, INCOG recommends convening a task force composed of brand neutral, electric vehicle charging experts to oversee this portion of the fund. INCOG has such staff willing serve in this capacity.
- INCOG applauds the DEQ's efforts to develop the proposed BMP which is broad in scope, inclusive in project eligibility, and flexible to maximize settlement funding throughout the ten year time-allocation.
 - To ensure funded projects are viable and effective at improving air quality, INCOG suggests that proposal reviewers have broad and nonaligned technical knowledge of air quality mitigation strategies, low and no emissions vehicle technologies, and regional expertise. INCOG has such staff willing serve in this capacity.
- INCOG recommends that DEQ allow or encourage "right-sizing" in vehicle replacement projects. This means allowing recipients to purchase a smaller class of vehicle to accomplish the same job as the replaced/scrapped vehicle. Right-sizing can help reduce project costs and provide a greater air quality benefit, as smaller vehicles are generally less expensive and more efficient.
- INCOG encourages DEQ to solicit input from school districts and public fleets regarding scrappage requirements and reimbursement rates prior to releasing vehicle replacement RFPs. Nearly all public fleets count on the funds from the sale of the vehicle being replaced to help offset the cost of the new vehicle. If the existing vehicle is required to be scrapped, reimbursement rates may need to be higher in order for these fleets to utilize the funds and make viable proposals.
- To take full advantage of Oklahoma's VW funding allocation, INCOG recommends cost-share requirements be maximized for all projects.
- To fully maximize this fund, INCOG recommends considering prioritizing projects seeking to use Volkswagen funding as match on other state or federal grant opportunities. Unfortunately, the window for putting together such proposals is typically very short. In light of this DEQ could consider a means of prequalifying projects with a letter of intent to provide matching funds if the grant is secured. If the grant is not secured, the funds would simply be eligible to be promised to another entity as match on another grant. This would allow eligible entities to apply for additional funding opportunities when they would not otherwise have enough matching funds.

We remain committed to improving air quality and advancing alternative fuel usage and availability in eastern Oklahoma, and sincerely thank you for the opportunity to comment.

Sincerely,



Adriane Jaynes
Alternative Fuels Planner
INCOG



Nancy Graham
Air Quality Program Manager
INCOG

May 24, 2018

Ms. Heather Lerch
Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101

RE: Western Farmers Electric Cooperative (WFEC) Comments on Proposed Beneficiary Mitigation Plan (BMP) released May 8, 2018

Dear Ms. Lerch,

Western Farmers Electric Cooperative (WFEC), as a generation and transmission cooperative that provides essential electric service to 21 member cooperatives, Altus Air Force Base, and other power users, appreciates the opportunity to provide comment regarding the Oklahoma Proposed Beneficiary Mitigation Plan (BMP). We understand that the Proposed BMP is intended to be a broad based plan that is required by the Trust in order for the State to access Settlement funds, while intending to be flexible to account for market changes over time. That stated, WFEC would offer the following comments for consideration of the Proposed BMP:

We appreciate and support the full 15% utilization of Mitigation Action 9 – Light Duty Zero Emission Supply Equipment. By allowing the full utilization of the maximum of 15% of funds to be allocated towards Light Duty Zero Emission Vehicle Supply Equipment, the State is able to enable maximum emissions reductions are enabled by supporting the use of electric vehicles. We would wish to remind the State to consider the amount of commuters that drive from rural areas into the metro areas of the state in the considerations of project placements.

Strong consideration for the following elements should be considered in the Cost Effectiveness determination: long term commitment by the owner of the EVSE and financial evaluation of the selected EVSE project owners. As stated in the Written Comments provided by WFEC on December 1, 2017, WFEC believes strongly in the need to ensure that those projects selected to receive funding are not just able to install the EVSE, but also have the ability to remain committed to maintaining and operating the EVSE into the future. For the short term market, a strong financial commitment – beyond that of just providing matching dollars towards the project installation costs – is needed by owners and operators of EVSE to ensure reliable and operational charging stations. We suggest a minimum term of ownership and maintenance commitment be included in project consideration scoring. Hand in hand with commitment comes financial viability of the potential project owners. WFEC recommends a financial evaluation of the applicant to confirm they can financially support the commitment to own and operating an electric vehicle charging network.

WFEC recommends a total cap for individual project funding. While the BMP is not intended to cover detail of specific funding programs, the discussion of evaluation of projects taking into account matching dollars provided by the applicant is similar in nature. To ensure that funds go as far as possible, WFEC recommends a total cap of individual project maximum funds.

Proudly serving the following members in Oklahoma and New Mexico:

Alfalfa Electric Cooperative • Altus Air Force Base • Canadian Valley Electric Cooperative • Central Valley Electric Cooperative • Choctaw Electric Cooperative • Cimarron Electric Cooperative • CKenergy Electric Cooperative • Cotton Electric Cooperative • East Central Oklahoma Electric Cooperative • Farmers' Electric Cooperative • Harmon Electric Association • Kay Electric Cooperative • Kiamichi Electric Cooperative • Lea County Electric Cooperative • Northfork Electric Cooperative • Northwestern Electric Cooperative • Oklahoma Electric Cooperative • Red River Valley Rural Electric Association • Roosevelt County Electric Cooperative • Rural Electric Cooperative • Southeastern Electric Cooperative • Southwest Rural Electric Association

WFEC recommends true consideration of statewide projects to address emissions reductions – not just urban corridors. While WFEC respects the data analysis presented regarding those counties and NOx emissions, consideration should be given to the fact that a good portion of the emissions could be a result of rural residents commuting into the more urban areas. This should not be overlooked as the rural areas were certainly not overlooked to play a role in the cross state air pollution rule development for power plants. In addition – rural areas of Oklahoma also bear a burden of emissions due to the agricultural sector as well as energy production efforts within the state. These elements may not be captured accurately in the current analysis.

WFEC recommends a funding priority for projects being “shovel-ready.” The EVSE market is poised for rapid and exponential growth in the coming years, which will be a result of multiple market participants making commitments. Enabling emissions reductions through expansion of the electric vehicle market throughout the state will require all parties – investor-owned utilities, public power entities, municipal utilities, cooperative utilities, as well as private EVSE owner/operators. Each of these groups brings a commitment to efforts within their area of expertise – which will lead to a statewide strategy and buildout that could be like no other in the United States.

WFEC recommends for the Alternative Fuel School Bus proposed funding area that consideration be given to project that encompass all types of schools – urban, suburban, and rural. In separating out this portion of a funding area from the DERA funding option, the Proposed State BMP enables a variety of school bus projects to be funded. WFEC would just ask that all types of school bus projects be considered, realizing that different school districts are able to provide different types of matching funds to the table.

WFEC would like to thank the State for the opportunity to provide comment on the Proposed BMP for Oklahoma. This funding truly provides a unique opportunity to benefit the entire state as it pertains to emissions reductions from mobile sources. Please contact Mark Faulkenberry, V.P. of Member Relations and Marketing at 405-759-2810 or via email at m_faulkenberry@wfec.com with any questions or to schedule a meeting for additional information.

Sincerely,

Mark Faulkenberry
V.P., Member Relations and Marketing

Proudly serving the following members in Oklahoma and New Mexico:

Alfalfa Electric Cooperative • Altus Air Force Base • Canadian Valley Electric Cooperative • Central Valley Electric Cooperative •
Choctaw Electric Cooperative • Cimarron Electric Cooperative • CKenergy Electric Cooperative • Cotton Electric Cooperative •
East Central Oklahoma Electric Cooperative • Farmers' Electric Cooperative • Harmon Electric Association • Kay Electric Cooperative •
Kiamichi Electric Cooperative • Lea County Electric Cooperative • Northfork Electric Cooperative • Northwestern Electric Cooperative •
Oklahoma Electric Cooperative • Red River Valley Rural Electric Association • Roosevelt County Electric Cooperative •
Rural Electric Cooperative • Southeastern Electric Cooperative • Southwest Rural Electric Association



Workhorse Group Inc.
100 Commerce Dr.
Loveland, OH 45140
Office: 513.360.4704

June 1, 2018

Heather Lerch
Oklahoma Department of Environmental Quality
Air Quality Division
PO Box 1677
Oklahoma City, OK 73101

Re: Comments of Workhorse Group Inc. on Oklahoma Beneficiary Mitigation Plan

Dear Ms. Lerch:

Workhorse Group Inc. (Workhorse), is a U.S. small business that manufactures electric trucks and vans, specifically Class 3 through 6 delivery trucks and vans, and will start manufacturing an electric pickup truck next year.

Mitigation projects to replace diesel vehicles with electric vehicles are an excellent use of VW Settlement Beneficiary Mitigation Plan funding. Replacing class 4 through 6 diesel delivery vehicles with electric vehicles is the most effective use of Beneficiary Mitigation Plan funds. The drive cycle for delivery vehicles is ideal for electric vehicles. They make frequent stops usually within a limited range and typically return to a home base each night where they can be charged at less expensive overnight rates. Of course, replacing diesel delivery vehicles with all-electric vehicles will achieve 100% NO_x reduction.

The greatest concentration of diesel delivery vehicles is usually in areas with a disproportionate pollution burden. As recognized in the draft Beneficiary Mitigation Plan, distribution centers are locations that now receive a disproportionate share of air pollution burden from diesel fleets. As a result, funding for electric delivery vehicle purchases would be the quickest and most effective way to mitigate the damage to human health and the environment from diesel emissions.

In contrast to most of the other categories of vehicles that are eligible for Beneficiary Mitigation Plan funding, where no-emission vehicles are still under development and are likely still several years away from introduction to the marketplace, class 4 through 6 electric delivery vehicles can be acquired now. Workhorse is currently producing all-electric delivery trucks and its new all-electric N-GEN delivery vehicle goes into production later this year. Furthermore, many other manufacturers have announced that they are introducing class 4 through 6 electric trucks within the next couple of years. By using its Beneficiary Mitigation Plan funds for class 4 through 6 delivery trucks, Oklahoma's citizens can obtain benefits from this funding in the near-term, rather than far into the future or never at all.

The draft Beneficiary Mitigation Plan shows on-road diesel heavy duty vehicles have the greatest share of NO_x emissions in Oklahoma. Accordingly it would be the best choice for



Workhorse Group Inc.

100 Commerce Dr.
Loveland, OH 45140
Office: 513.360.4704

the State to devote the greatest share of the Mitigation Plan spending to replacement of vehicles in this category. For that reason, we suggest that the percentage share for the On-Road Program be increased from 20% to 25%, by reducing other categories that provide less benefit to the people of Oklahoma.

Our company is interested in working with companies and government agencies that propose to use Mitigation Plan funding to replace their diesel fleets with electric vehicles.

Please contact me if you have any questions about our comments.

Sincerely,

O. Kevin Vincent
Vice President for Government, Regulatory and Safety Affairs

OG&E Energy Corp

PO Box 321
Oklahoma City, Oklahoma 73101-0321
405-553-3000
www.oge.com



May 24, 2018

Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101
Attention: Heather Lerch

Re: Comments for the Oklahoma Volkswagen Beneficiary Mitigation Plan

Dear Ms. Lerch:

Oklahoma Gas and Electric Company (“OG&E”), respectfully submits these comments to the Oklahoma Department of Environmental Quality (“ODEQ”) in response to the request for public input on the published draft of the Oklahoma Volkswagen Beneficiary Mitigation Plan (“BMP”). OG&E, the largest electric utility in Oklahoma, is keenly aware of technological and market developments related to electric vehicles (“EV”), and supports a BMP which would direct funds toward increasing the deployment of EV technology in the state of Oklahoma. A BMP which contemplates widespread utilization of EVs and associated infrastructure technology in Oklahoma would support air quality improvements and advance the State’s ability to adapt to the widely-anticipated future public adoption of EVs.

Thank you for your hard work and efforts in drafting this BMP for Oklahoma. We recognize the thought leadership of the many people who have worked towards proposing a plan that has in mind the best interests of the State of Oklahoma specifically regarding NOx emissions reduction

Recognizing that the primary intent of the plan is to implement the most cost effective and significant NOx emissions reduction solutions in the highest ozone geographical areas of the state, OG&E supports shifting a portion of the targeted percent of funding from the Off-Road Program to the On-Road Program(s). Primarily, we will believe the funding allocations between the “Anticipated Eligible Mitigation Action Categories and Funding Percentages” should be directed towards the highest emitting mobile source vehicle types within the geographical areas of highest emissions, more than 1% of effected VW vehicle registrations, and/or within the Tulsa or Oklahoma City Metropolitan Statistical Area (MSA). Details about our analysis can be found in the Appendix on page 3.

We recognize that EVs can be an important tool in Oklahoma’s toolbox for mitigating NOx emissions. Thus, we support the conversion of fleet vehicles including urban transit buses,

OGE Energy Corp

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school buses and local freight trucks to electric vehicles. Replacing diesel freight trucks and diesel buses with electric alternatives represents a significant opportunity for the state to help electrify mobility options and improve air quality.

We agree with and support the allocation of the entire 15% of the allowed funding be directed to Light Duty Zero Emission Vehicle Supply Equipment (EV Charging Stations) to support drivers of electric vehicles. We believe a coordinated roll-out of an EV charging network will maximize efficiency and cost effectiveness, while encouraging NOx reductions in the most beneficial areas. To this end, we recommend that ODEQ create a dedicated group that is responsible for the coordination and oversight of charging station installations.

We appreciate the opportunity to provide input to the ODEQ on this very important undertaking and we look forward to working with ODEQ and other stakeholders as the BMP is finalized and executed. More information on OGE's EV initiative can also be found at www.oge.com.

Should you have any questions, please contact Kevin Lagge at (405) 553-3000.

Sincerely,

A handwritten signature in black ink that reads "Kevin Lagge".

Kevin Lagge
Director, Development, Innovation & Strategy

Cc: Usha-Maria Turner: Director, Environmental Affairs and Federal Public Policy



Appendix

Table 1 of Oklahoma’s BMP shows the allocation of funds for each Anticipated Eligible Mitigation Action Category.

Table 1: Anticipated Eligible Mitigation Action Categories and Funding Percentage

Eligible Mitigation Action Category	Funding %
Alternative Fuel School Bus Program	20%
DERA Grants <ul style="list-style-type: none"> • Diesel School Buses • Retrofits and other DERA-only projects 	10%
On-Road Program <ul style="list-style-type: none"> • 1: Class 8 Local Freight Trucks and Drayage Trucks • 2: Class 4-8 Shuttle Bus or Transit Bus • 6: Class 4-7 Local Freight Trucks 	20%
Off-Road Program <ul style="list-style-type: none"> • 3: Freight Switchers • 4: Ferries/Tugs • 7: Airport Ground Support Equipment • 8: Forklifts and Port Cargo Handling Equipment 	20%
Light Duty Zero Emission Vehicle Supply Equipment	15%
Reserve Flex Funding	15%
TOTAL	100%



When the On-Road Program, DERA, and Alternative Fuel School Bus Program are combined this results in a grand total of 50% funding going towards on-road projects. This is a little more than twice as much as the 20% reserved for the Off-Road Program, and therefore reflective of expected project applications and comments received.

While we generally agree with the allocations above, funding should be allocated to on- or non-road programs with regard to the proportion of total NOx emissions each category represents within the ODEQ’s Suggested Priority Counties. ODEQ’s Priority Counties were used in our analysis because they meet one or more of the following criteria, thus representing areas that stand to benefit most from utilization of the VW Trust Funds:

- Top 10 contributor of NOx emissions
- Contains an estimated >1% of Oklahoma’s effected VW vehicle registrations
- Within the Oklahoma City or Tulsa MSA



Tables 3 and 4 show the percentages of total NOx emissions non- and on-road equipment account for within the priority counties. Sectors that did not have a correlation to the Eligible Mitigation Actions described in Appendix D-2 of the State Trust Agreement were not included because they represent less than 2% of total NOx emissions.

Table 2: Total Mobile NOx Emissions for Sectors with Correlated Eligible Mitigation Actions under App. D-2

Sector	Sum of NOx (tons)	% of Total
Mobile - On-Road Diesel Heavy Duty Vehicles	18,203.23	39%
Mobile - On-Road non-Diesel Light Duty Vehicles	16,577.83	36%
Mobile - Non-Road Equipment - Diesel	5,414.74	12%
Mobile - Locomotives	3,952.80	9%
Mobile - Non-Road Equipment - Gasoline	1,299.79	3%
Mobile - On-Road non-Diesel Heavy Duty Vehicles	948.57	2%
Grand Total	46,396.96	

*Note: NOx emissions are from counties listed in the ODEQ's BMP Suggested Priority Counties, pg.13

Table 3: Total Mobile NOx Emissions for Non-Road Sectors with Correlated Eligible Mitigation Actions under App. D-2

Sector	Sum of NOx (tons)	% of Total
Mobile - Non-Road Equipment - Diesel	5,414.74	11.67%
Mobile - Locomotives	3,952.80	8.52%
Mobile - Non-Road Equipment - Gasoline	1,299.79	2.80%
Grand Total	10,667.33	22.99%
Weighting to Total Trust Program Allocations	16%	

*Note: NOx emissions are from counties listed in the ODEQ's BMP Suggested Priority Counties, pg.13

Table 4: Total Mobile NOx Emissions for On-Road Sectors with Correlated Eligible Mitigation Actions under App. D-2

Sector	Sum of NOx (tons)	% of Total
Mobile - On-Road Diesel Heavy Duty Vehicles	18,203.23	39.23%
Mobile - On-Road non-Diesel Light Duty Vehicles	16,577.83	35.73%
Mobile - On-Road non-Diesel Heavy Duty Vehicles	948.57	2.04%
Grand Total	35,729.63	77.01%
Weighting to Total Trust Program Allocations	54%	

*Note: NOx emissions are from counties listed in the ODEQ's BMP Suggested Priority Counties, pg.13

Based on this analysis, we recommend that the ODEQ re-allocate 4% of its targeted non-road equipment funding (Table 1) to On-Road Programs.



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“Building a brighter future”

May 24, 2018
Ms. Heather Lerch
Oklahoma Department of Environmental Quality
Air Quality Division
P.O. Box 1677
Oklahoma City, OK 73101

RE: Oklahoma Municipal Power Authority (OMPA) Comments on Proposed Beneficiary Mitigation Plan

Dear Ms. Lerch,

Oklahoma Municipal Power Authority provides electrical generation and transmission to 42-member municipalities in Oklahoma, and we would like to take the opportunity to provide comment regarding the Oklahoma Proposed Beneficiary Mitigation Plan. We understand that the Proposed BMP is intended to be an inclusive plan required by the Trust for the State to access the Settlement funds. OMPA offers the following comments.

Mitigation Action 9, Light Duty Zero Emission Supply Equipment.

OMPA supports the use of Light Duty Zero Emission Vehicles and the necessary electrical infrastructure needed to support the charging equipment. We ask that the State take into consideration rural and small to medium sized city commuters that drive into the metropolitan areas of the state when considering placement of EV supply equipment.

OMPA requests consideration of statewide projects when addressing emission reductions, including areas outside the major urban corridors. While data analysis indicates higher NOx emissions in the urban zones, the analysis may not have taken into discussion the daily added emissions in Urban regions of commuter vehicles from surrounding cities entering the urban areas. Thus, cities outside of the major metropolitan areas should have attention as well regarding the distribution of funds and locations of EV supply equipment.

OMPA has several member cities along the North I-35 corridor that wish to deploy “charging stations” and OMPA is committed to assisting them in doing so. Research has shown this corridor to have almost non-existent EV supply equipment available to the public. Funding via BMP would assist OMPA and our member cities in deployment of EV supply equipment, thus encouraging electric vehicle use, while in turn helping reduce emissions statewide and in the Urban areas.

OMPA appreciates the opportunity to provide comment on the Proposed BMP for Oklahoma. And the opportunity to benefit the entire state in reducing vehicle emission reductions. Please contact Sean West at 405-359-2524 or via email, swest@ompa.com , with any questions or to schedule a meeting for additional information.

Sincerely,
Sean West
Emerging Technologies Administer



Fleet Electrification

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Submitted via vwsettlement@deq.ok.gov

May 23, 2018

Heather Lerch
Air Quality Division
Oklahoma Department of Environmental Quality
PO Box 1677
Oklahoma City, OK 73101

Subject: XL's Comments on Oklahoma's Proposed Beneficiary Mitigation Plan

Dear Ms. Lerch,

XL, Inc. ("XL") is pleased to submit the following comments and recommendations, which Oklahoma can use to protect and improve the state's air quality. We have outlined a strategic vision for eligible mitigation actions that will cost-effectively fund shovel-ready, large-scale deployments of alternative fuel and low emissions vehicles, which will provide immediate and sustained reductions of smog-forming nitrogen oxides (NOx) in communities disproportionately affected by diesel pollution.

XL currently leads the U.S. market in fleet electrification solutions and our products stem from a core goal:

Create a reliable and widely applicable technology that delivers unparalleled value and reduces the overall cost of ownership

Our efforts to realize that goal have led to demonstrated experience reducing diesel use and offsetting emissions. Our customers – such as PepsiCo, Verizon, Harvard University, and ThyssenKrupp, to name a few – have aggregated nearly 65 million miles and continue driving 1.5 million miles each month. In recent years, Coca-Cola has installed an XL hybrid-electric vehicle system on every van deployed nationwide.

We have saved our customers approximately 1,257,000 gallons of fuel, reduced 11900 tons of carbon dioxide (CO2), and saved over 10,000 hours of driver productivity. Further, we have developed and nurtured long-term relationships with industry-leading experts, including Ford Motor Company, General Motors, Argonne National Laboratory, and CALSTART, to design, analyze, test, construct, and deploy our electrified powertrains and vehicles.

Specific to the Volkswagen settlement, XL's hybrid-electric vehicle and plug-in hybrid-electric vehicle technologies offer fleets the most cost-effective, high-quality solutions for service, delivery, school bus, and transit vehicles. Our hybrid-electric vehicle technology can be installed on Ford, GM, and Isuzu models (with more OEMs to follow) and is available on both new vehicles and repowers. We pride ourselves on cost-effective service – installation takes approximately 4-6 hours and immediately yields a 20% savings on fuel and greenhouse gases.

XL recently released to the national light-duty vehicle market our plug-in hybrid-electric vehicle technology. This technology will dramatically increase fuel savings while lowering the total cost of



ownership, all the while retaining the emissions reduction benefits of other vehicle technology solutions at higher price points. This product introduction represents XL’s efforts to expand our portfolio to better serve our customers and provide the lowest total cost of ownership across a variety of vehicle platforms.

Recommendation 1: Facilitate Cost-Effective, Immediate, and Sustained Emissions Reductions via Hybrid-Electric Technology

Vitally important to the health of its citizens, Oklahoma must ensure the Volkswagen funds are used to finance projects that bring about immediate and sustained NOx emissions reductions that are the result of diesel transportation sources. The state is crisscrossed with highways – I-35, I-40, and I-44 – that serve as key transportation corridors and home to several metropolitan centers.

XL appreciates the efforts put forth by Oklahoma and the Oklahoma Department of Environmental Quality in publishing its Draft Beneficiary Mitigation Plan in order to deliver air quality benefits across the state. However, we recommend that the state explicitly identify the list of eligible conventional and alternative fuels and that that list include hybrid-electric vehicles.

Hybrid-electric vehicles are a smart investment for Oklahoma because they can yield tremendous benefits. Indeed, in comparison with other eligible project types under the Volkswagen settlement, XL’s technology demonstrates significant cost-effectiveness benefits in terms of NOx reduction emissions, as shown in Figure 1 below.

Figure 1: XL’s hybrid-electric vehicle technologies achieve the best \$ per NOx ton cost-effectiveness



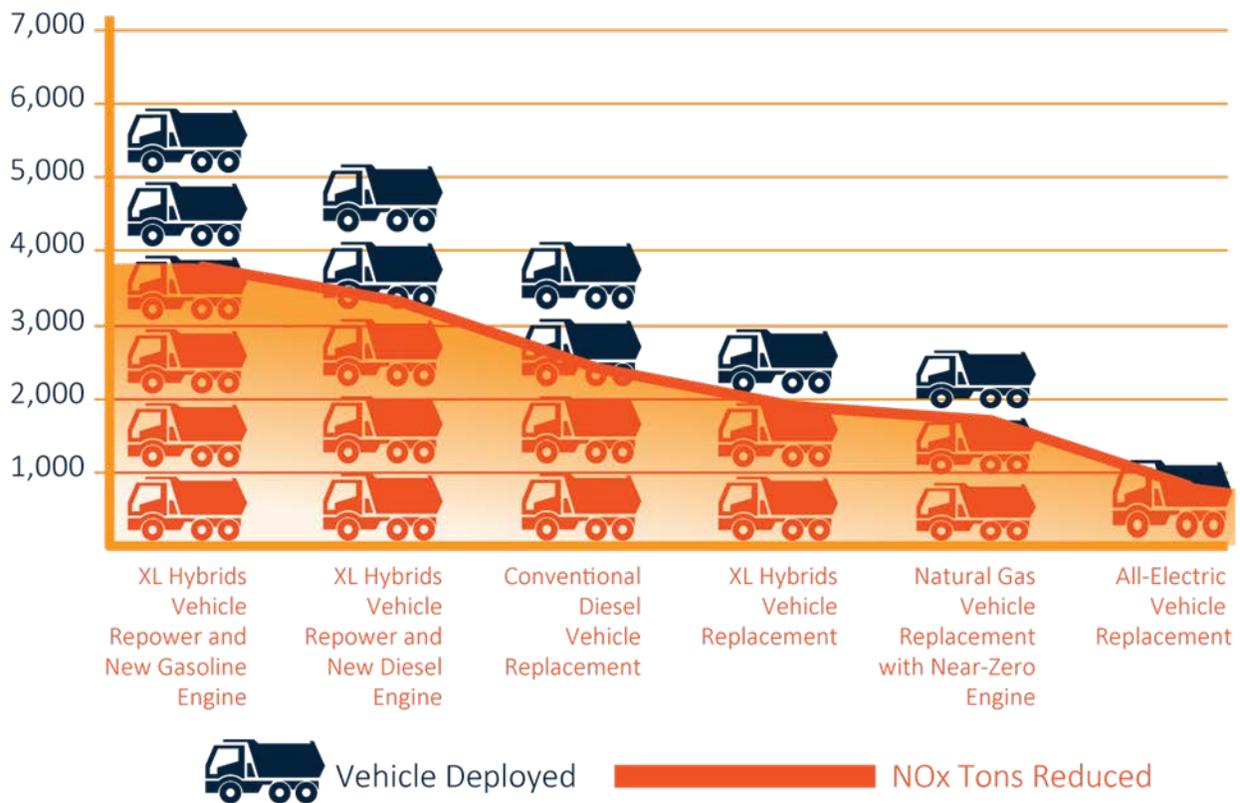
Figure 1 clearly shows that XL’s hybrid-electric vehicle technology provides cost-effective competition to conventional diesel replacements, while far outpacing the cost-effectiveness of most advanced natural gas and all-electric vehicles.



We find it worth noting that allowing funds to be used for new gasoline-fueled vehicles equipped with hybrid technologies will result in far superior cost-effectiveness and emission reduction benefits. By replacing an existing diesel vehicle with a gasoline-hybrid vehicle, Oklahoma can dramatically lower the incremental cost and thereby increase the cost-effectiveness of the replacement, more effectively “right size” the horsepower and torque suitable to the application and reduce emissions across the spectrum of pollutants. We appreciate that there is not yet any published guidance that has defined whether such projects would be eligible. In that light, we hope to engage further with Oklahoma to demonstrate the benefits of these gasoline-hybrid vehicles and ensure their eligibility for competition.

By extrapolating these cost-effectiveness numbers, the results are even more staggering. Figure 2 below shows six hypothetical scenarios in which Oklahoma dedicated \$50 million to each. The graphic makes clear the large-scale deployment and emissions reduction potential of various XL hybrid-electric vehicle replacement and repower solutions.

Figure 2: A \$50 million investment in hybrid-electric vehicle projects would deliver the largest number of vehicle deployments and the most NOx tons reduced



We appreciate Oklahoma’s intentions to take a broad focus with its allocation of Volkswagen funds. However, we recommend that Oklahoma structure all request for proposals (RFPs) using Volkswagen funds so as to allow each applicant to propose competitive cost-share levels lower than those prescribed in the Volkswagen settlement. By doing so, Oklahoma can more realistically fund large-scale, transformative projects that will be capable of achieving the greatest amount of emissions reductions per state dollar.



Recommendation 2: Prioritize NOx Cost-Effectiveness, but also Give Credence to Other Cost-Effectiveness Metrics

While NOx cost-effectiveness is certainly important, we also recommend that Oklahoma expand the definition of cost-effectiveness to address other attributes. We have highlighted several of these attributes below, which have proven to be critical issues for our customers and are thus vital to ensuring that projects can be replicated across the state, region, and nation.

Table 1: XL delivers a wide array of cost-effectiveness benefits

Cost-Effectiveness Attribute	XL Hybrid-Electric Vehicle System Installation and Repower	Vehicle Replacement
Deployment Window	1 day to upfit the vehicle	6 to 12 months for new OEM vehicle
Cost for Medium-Duty Vehicle	\$40,000 for diesel and \$35,000 for gasoline, which includes installation of the hybrid system and new engine	\$50,000 - \$100,000
Wells to Wheels NOx Savings on City Drive Cycle	As much as 99%, due to regenerative braking and engine improvements	Variable, depending on technology and grid electricity source
Infrastructure	None	None, though other alternative fuels require cost-intensive dedicated stations
Availability	Available nationwide with MA public fleet contract VEH102	Variable; Other alternative fuels may not be available in all markets and vehicle classes

The benefits of alternative fuel technologies, particularly for municipal fleets, cannot be overstated. While not only delivering emission reduction benefits, these fleets also face increasingly stringent compliance requirements for deploying such vehicles. Fortunately, the Alternative Fuel Provider Fleet Program of the Energy Policy Act (EPA Act) was recently expanded so as to allow hybrid-electric vehicles to qualify as one-half credit. This effectively provides municipal fleets (which also include state, utility, and university fleets) with additional options to meet their procurement standards and reduce emissions. XL is proud of its coordination with and support from the Department of Energy on this effort.

Recommendation 3: Mitigate Diesel Emission Sources that have the Highest Potential to Generate Air Quality and Health Benefits

On-road transportation projects have the most potential to mitigate the harmful health impacts of these emissions as these vehicles typically operate in communities with dense populations. We certainly appreciate that Oklahoma has other sources of diesel emissions (e.g., school buses, non-road, and rail equipment), but these are not likely to contribute substantial NOx emissions in the state’s priority areas. Rather, these are more commonly found in lightly populated areas or do not consume sufficient volumes of fuel and thus do not product substantial emissions. In other words, only on-road transportation projects



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can yield the air quality and environmental justice benefits required by the Volkswagen settlement and desired by Oklahoma.

We thus recommend that Oklahoma dedicate at least 60% of the Volkswagen settlement funds to on-road transportation projects. This will help the state establish the framework needed to achieve the following key goals:

- (1) Improve air quality via significant and sustained cost-effective NOx reductions
- (2) Expedite deployment and adoption of the cleanest vehicle technologies
- (3) Align with statewide energy, environmental and economic development goals and account for environmental justice considerations

Recommendation 4: Prioritize Projects that Accrue High Percentage of Mileage within Overburdened Counties

XL fully supports Oklahoma's prioritization of funding for projects in counties with a disproportionate burden of the state's ozone levels. Transportation hubs, such as airports, terminals, and depots are concentrated sources of diesel emissions and, as such, every effort should be made to prioritize projects that address these specific geographies. Further, these areas are most often found in densely populated areas – for Oklahoma, the counties of Canadian, Cleveland, Comanche, Creek, Grady, Garvin, McClain, Oklahoma, Rogers, and Tulsa have been particularly overburdened with diesel pollution.

However, to ensure that funding for air quality projects is most effectively directed to the areas that most need them, we recommend that Oklahoma limit eligibility to vehicles that operate a high percentage of mileage within the priority counties. By setting a minimum threshold requirement (e.g., "75% of mileage must be accrued with Oklahoma's nonattainment counties"), this recommendation directly addresses the state's need to fund projects in communities that bear a disproportionate share of diesel pollution.

Because Oklahoma has established environmental justice as a core responsibility and as it is one of the foundational elements of the Volkswagen settlement, combining Oklahoma's county prioritization and our recommendation to require settlement-funded vehicles to operate primarily within these counties can ensure that funds are directed most efficiently and cost-effectively. Alternative-fuel vehicles, such as hybrid-electric vehicles, can significantly reduce vulnerable population's exposure to emissions that are associated with older diesel trucks.

Recommendation 5: Promote Proactivity and Accountability by Funding with an Eye to the Future

Hybrid-electric vehicles continue to integrate transformational transportation technology. As an example, each of our vehicles is equipped with the cloud-based XL Link™ Connected Vehicle System ("XL Link"). Our fleet customers currently use XL Link for fleet management and analytics, though we note the potential importance of this technology as it pertains to the settlement's stringent reporting, compliance, and accountability requirements.



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XL Link reports fuel consumption, mileage, idling time, speed, and vehicle performance – in fact, you can see these statistics tracked in real time on our website. XL Link will help considerably in our efforts to support Oklahoma’s grant reporting requirements and is a standard feature in all new vehicle offerings. In addition, we install XL Link on existing vehicles to help our customers generate actionable intelligence on powertrain performance and drive cycle utilization.

XL notes the hybrid technology can also be integrated with alternative fuel vehicles, thereby expanding the potential market and creating opportunity for additional emissions reduction and increased cost-effectiveness. As the technology is ultimately separate from the engine, XL has identified no barriers to hybridizing alternative gaseous fuel vehicles, such as those powered by CNG and propane. This type of fuel flexibility is technologically possible and XL estimates that new original equipment manufacturer (OEM) products of this type could be delivered to the market in as few as nine months.

Summary

XL appreciates the opportunity to support Oklahoma in meeting its NOx emission reductions, social and environmental justice, and economic and energy stimulus goals. Our recommendations will cost-effectively yield energy and economic benefits for the state, including tax revenue generation, improved vehicle efficiency and decreased maintenance, and the redirection of cost savings into the state’s economy. Moreover, they promote the widespread use of low emitting vehicles that will transform Oklahoma’s transportation network, increase efficiencies, and play a vital role in the state’s efforts to mitigate GHG and NOx emissions.

We would like to work with you and your team to ensure the effective rollout of your Beneficiary Mitigation Plan. Towards that end, we request an in-person meeting with the most appropriate member of your staff to discuss our comments and suggestions further. We look forward to continued dialogue with you and to future collaboration that will help Oklahoma meet its air quality, cost-effectiveness, and environmental justice goals.

Sincerely,

Clay Siegert
Chief Operating Officer
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