Volkswagen Settlement: Tennessee's Approach to Implementing the Environmental Mitigation Trust

Tennessee Department of Environment and Conservation
Office of Energy Programs

VW Settlement Overview

- In 2015, Volkswagen (VW) publicly admitted that it had secretly and deliberately installed a defeat device -- software designed to cheat emissions tests and deceive federal and state regulators -- in approximately 590,000 model year 2009 to 2016 motor vehicles containing 2.0 and 3.0 liter diesel engines.

- EPA filed a complaint against VW, alleging that the company had violated the Clean Air Act.

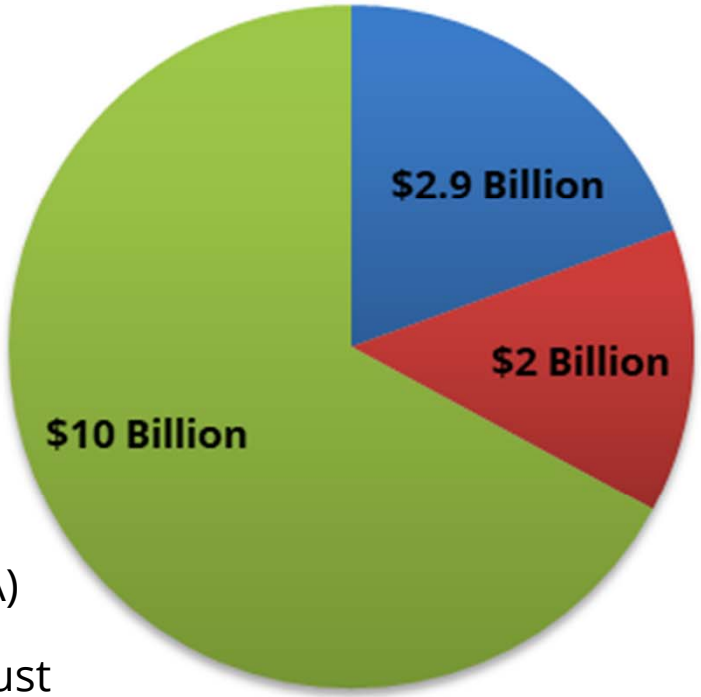
- In October 2016 and May 2017, the U.S. District Court, Northern District of California approved two partial settlements related to the affected **2.0 and 3.0 liter vehicles**, totaling $14.9 billion.

VW Settlement Overview (continued)

- In April 2017, a third partial settlement, addressing civil penalties and injunctive relief, was approved by the Court. Under the third partial settlement, VW has paid a $1.45 billion civil penalty for the alleged civil violations of the Clean Air Act. The money was collected via the Department of Justice and was deposited to the U.S. Treasury.

- Settlement funds from the first and second partial settlements (2.0 and 3.0 liter, respectively) will be dispersed amongst three categories:

Settlement Breakdown



- Vehicle Buyback and Modification (Consumers)
- Zero Emission Vehicle Investment (National and CA)
- Environmental Mitigation Trust (States, Tribes, Territories)

1. Vehicle Buyback and Modification (Consumers)

- $10 Billion
- The Consent Decree requires VW to remove or modify at least 85% of the subject 2.0 liter vehicles by June 30, 2019, the subject 3.0 liter generation 1 vehicles (MY 2009-2012) by November 30, 2019, and the subject 3.0 liter generation 2 vehicles (MY 2013-2016) by May 31, 2020.
    - ➢Buyback
    - ➢Lease termination
    - ➢EPA-approved emissions modification

2. Zero Emission Vehicle (ZEV) Investment

- VW will invest $2 billion over 10 years in projects that support the increased use of ZEV, which are defined as battery electric vehicles, plug-in hybrid electric vehicles, and fuel cell vehicles.
- This will be a VW administered program.
- VW created a separate entity within VW Group of America, known as Electrify America, LLC, to oversee the ZEV investment.
  - $300 million National ZEV investment plan during every 30 month cycle for four cycles (with EPA oversight) = **$1.2 billion**
  - $200 million California ZEV investment plan every 30 month cycle for four cycles (with CARB oversight) = **$800 million**

2. Zero Emission Vehicle (ZEV) Investment

- Eligible ZEV Investment expenses include:
  - Design/planning, construction/installation, and operation and maintenance of ZEV infrastructure;
  - Brand-neutral education or public outreach that builds or increases awareness;
  - Programs or actions to increase public exposure or access to ZEVs without requiring the consumer to purchase or lease a ZEV at full market value, such as car sharing services or ride hailing services.

Process for VW National ZEV Investment

- For each 30-month cycle, VW will submit a draft National ZEV Investment Plan:
  - Description of proposed ZEV investments, timelines, etc.;
  - Explanation of how each investment advances the use and market penetration of ZEVs, has high likelihood of utilization, provides accessibility/availability where most needed, and builds positive awareness;
  - The EPA must approve the final plan; upon approval, VW implements plan and reports annually on its progress.

National ZEV Investment Plan: 1st 30-month Cycle

- On April 9, 2017, Electrify America published the **National ZEV Investment Plan: Cycle 1**. The plan, which was approved by EPA, details the investments that will be made in the first 30-month cycle, which runs from Q1 2017 through Q2 2019:

- **Installing Charging Infrastructure (~$250 million)**

  1. Community Charging: 300+ stations across five major use cases (multi-family homes, workplace, commercial/retail, community, and municipal lots/garages) in 11metropolitan areas: NYC, Washington, D.C., Chicago, Portland (OR), Boston, Seattle, Philadelphia, Denver, Houston, Miami, and Raleigh.

National ZEV Investment Plan: 1st 30-month Cycle

2. Long Distance Highway Network:

- In the first 30-month cycle, ~240 stations to be installed or under development along 35 highways & interstates across the U.S.
  - Highways and interstate systems identified that pass through TN:
    - 5-9 on Hwy 70
    - 5-9 on I-40
    - 10+ on I-75
    - 5-9 on I-65
    - 2-4 on I-24
  - Capacity will range from 4 and up to 10 vehicles charging at a time
  - Focus on 150-320 kW DC fast chargers, providing about 9-19 miles of ZEV range per minute of charging
- Sites:
  - Present in 39 U.S. states by 2020
  - About 66 miles apart, with no more than 120 miles between

National ZEV Investment Plan: 1st 30-month Cycle

National ZEV Investment Plan: 1st 30-month Cycle

- **Public Education Initiatives (~$25 million):** A comprehensive brand-neutral educational campaign will be split across traditional advertising channels such as television and targeted digital in order to increase the number of people aware of and willing to consider ZEVs.

- **ZEV Access Initiatives (Spend amount not yet estimated):** A program of experiential initiatives like ride-and-drive events are still being developed as part of Electrify America's plan; Electrify America will seek written approval for access programs or projects from EPA before it makes these investments, as required by Appendix C to the first partial settlement.

- **Operational Costs to Run Electrify America (~$25 million)**

3. Environmental Mitigation Trust

- The remaining $2.9 billion will fund environmental mitigation projects that reduce NOx emissions.
- The funds will be allocated among Beneficiaries (states, tribes, and certain territories) based on the number of impacted VW vehicles in their jurisdictions.
- Beneficiaries will develop a high-level mitigation plan, summarizing how the beneficiary plans to use the mitigation funds.

3. Environmental Mitigation Trust

- **TN's initial allocation based on the 2.0 and 3.0 liter partial settlements is $45,759,914.**

- TDEC has been identified by Tennessee Governor Bill Haslam as the Lead Agency for purposes of administering Tennessee's trust allocation.

- On **October 2, 2017**, the final, executed Trust Agreements under the partial settlements with the U.S. federal government for 2.0 and 3.0 liter vehicles were filed with the Court, establishing the Trust Effective Date (TED) for the Environmental Mitigation Trust.

3. Environmental Mitigation Trust

Beneficiary Mitigation Plan

The Plan must summarize how the Beneficiary (TN) plans to use its mitigation funds, addressing:

- TN's overall goal for the use of the funds;
- The categories of Eligible Mitigation Actions TN anticipates that it will use and the expected percentages of funds to be used for each type of action;
- How TN will consider the beneficial impact of Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction;
- The expected ranges of emissions benefits TN estimates would be realized by implementation of the Eligible Mitigation Actions identified in the Plan;
- The process by which TN shall seek and consider public input on its Beneficiary Mitigation Plan.

Eligible Mitigation Actions - Environmental Mitigation Trust

- Eligible Projects (general information)
  - **Replacing** or **repowering older diesel engines in certain medium and heavy duty vehicles, vessels, or equipment** with New Diesel, Alternate Fueled (e.g., CNG, propane, diesel-electric hybrid) , or All-Electric engines (including installation of associated charging infrastructure for All-Electric engines)
  - **Replacing certain older, diesel medium and heavy duty vehicles, vessels, or equipment** with New Diesel, Alternate Fueled, or All-Electric (including installation of associated charging infrastructure for All-Electric)
  - Installing charging infrastructure for Light-Duty Zero Emission Vehicles (up to 15% of the Trust Fund allocations can be spent on this)
  - The use of Trust Funds as non-federal voluntary match for projects eligible under the Diesel Emission Reduction Act (DERA) program.

Eligible Mitigation Actions - Environmental Mitigation Trust

10 different categories of Eligible Mitigation Actions **set forth in the Trust Agreement**:

1. Large Trucks: Class 8 Local Freight Trucks and Port Drayage Trucks
2. Buses: Class 4-8 School Bus, Shuttle Bus, or Transit Bus
3. Freight Switchers
4. Ferries/Tugs
5. Shorepower for Ocean Going Vessels
6. Medium Trucks: Class 4-7 Local Freight Trucks
7. Airport Ground Support Equipment
8. Forklifts and Port Cargo Handling Equipment
9. Light Duty Zero Emission Vehicle Supply Equipment
10. Diesel Emission Reduction Act (DERA) Option

Eligible Mitigation Actions - Environmental Mitigation Trust

- The Trust Agreement dictates the Eligible Mitigation Action categories. These categories were not selected by TDEC or the State of Tennessee.
- Categories 1-8 are focused on medium and heavy duty vehicles, vessels, or equipment.
- Eligible large and medium trucks must be “Local,” although the term “Local” is undefined by the settlement.
- Replacing or repowering with “All-Electric “ is the only option for categories 7 and 8. “All-Electric” shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

1. Large Trucks: Class 8 Local Freight Trucks and Port Drayage Trucks

- Class 8 = over 33,000 pounds.
- Includes trucks used for hauling cargo to and from ports and intermodal rail yards as well as trucks used for freight or cargo delivery including waste haulers, dump trucks, and concrete mixers.
- Vehicles eligible for repower or replacement include those with engine model years 1992-2009.

2. Buses: Class 4-8 School Bus, Shuttle Bus, or Transit Bus

- Defined as vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,001 lbs used for transporting people.
- Vehicles eligible for repower or replacement include those with engine model years prior to 2009.
- School buses owned by public school districts fall under the “Government Owned” category. Since many school districts contract out student transportation, school buses which are privately owned, but are contracted with a public school district are eligible for funding at the “Government Owned” rate.

3. Freight Switchers

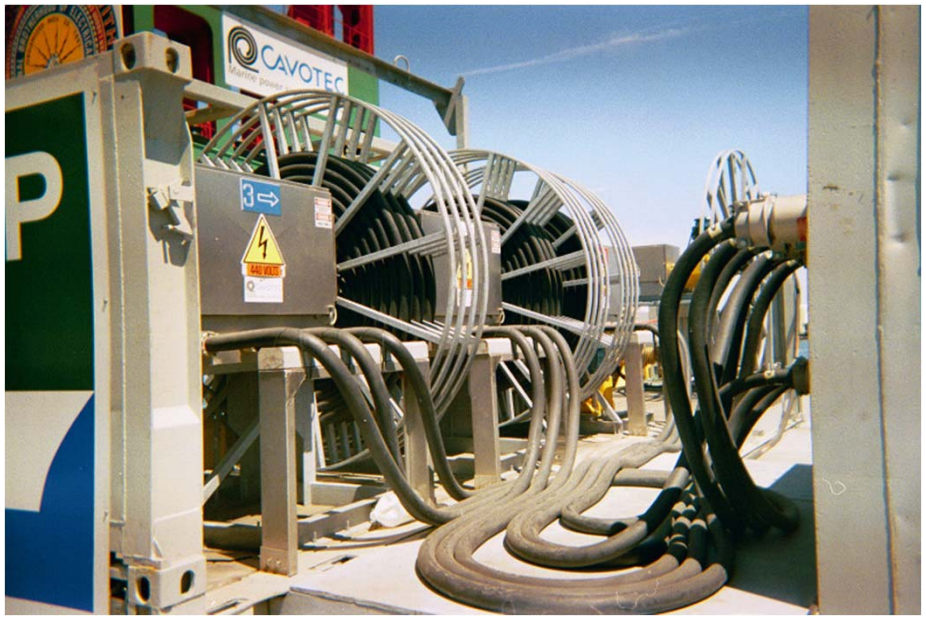
- Pre-Tier 4 freight switcher locomotives that operate 1,000 or more hours per year.
- A “Freight Switcher” is a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that moves freight long distances.

4. Ferries/Tugs

- Equipped with unregulated, Tier 1, or Tier 2 marine engines.
- Eligible vessels include “Tugs,” which refer to dedicated vessels that push or pull other vessels in ports, harbors, and inland waterways (e.g., tugboats and towboats). Ferries can include passenger and vehicle ferries.

5. Shorepower for Ocean Going Vessels (Not Viable in TN)

- Shorepower for ocean going vessels, which includes vessels that operate within the Great Lakes. Eligible systems provide electric auxiliary power from shore while a boat is docked to allow a vessel's engines to turn off and remain off while the vessel is at berth. Several components of shorepower systems are eligible for reimbursement. These are limited to cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution.



6. Medium Trucks: Class 4-7 Local Freight Trucks

- Commercial trucks with a Gross Vehicle Weight Rating (GVWR) between 14,001 and 33,000 lbs. used to deliver cargo and freight such as delivery trucks, box trucks moving freight, trucks used for courier services, waste haulers, and bucket trucks.
- Vehicles eligible for repower or replacement include those with engine model years 1992–2009.

7. Airport Ground Support Equipment

- This type of equipment includes all vehicles and equipment used at airports to service aircraft between flights.
- To be eligible for funding, airport ground support equipment must be repowered or replaced with All-Electric equipment.
- “All-Electric” shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

8. Forklifts and Port Cargo Handling Equipment

- Forklifts eligible for repower and replacement must have greater than 8,000 pounds lift capacity. Port Cargo Handling Equipment includes rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.
- Neither the Consent Decree nor the Trust Agreements define "port." A presentation by the Mobile Sources Technical Review Subcommittee of EPA's Clean Air Act Advisory Committee suggests that a port may be defined as a node in the larger goods movement supply chain, to include cruise terminals, bulk terminals, container terminals, and intermodal container transfer facilities.
- Replacing or repowering with "All-Electric " is the only option for this category. "All-Electric" shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

9. Light Duty Zero Emission Vehicle Supply Equipment

- Beneficiaries may use up to 15% of their allocation of Trust Funds for the acquisition, installation, operation and maintenance of new Light Duty Zero Emission Vehicle Supply Equipment.
- Eligible equipment includes Level 1, Level 2 or DC Fast Charging equipment (or analogous successor technologies) that is located in a public place, workplace, or multi-unit dwelling and is not located at a private residential dwelling that is not a multi-unit dwelling.
- Light duty hydrogen fuel cell vehicle supply equipment is also eligible, and includes hydrogen dispensing equipment capable of dispensing hydrogen at a pressure of 70 megapascals (or analogous successor technologies) that is located in a public place.

10. Diesel Emission Reduction Act (DERA) Option

- DERA provides funding for projects that reduce emissions from existing diesel engines. Authorized under the Energy Policy Act of 2005 and administered by U.S. EPA, DERA is designed to help replace or retrofit older, dirtier engines still in use.
- The DERA option allows Beneficiaries to use Trust Funds for actions not specifically enumerated in the Trust Agreement, but otherwise eligible under DERA.
- Some examples include: idle-reduction technologies, aerodynamic technologies and low rolling resistance tires, and the retrofit or replacement of non-road engines, equipment, or vehicles used for construction, agriculture, mining, and energy production.

Eligible Mitigation Actions - Environmental Mitigation Trust

- All of these categories (except for the DERA option) have separate sub-categories for “Non-Government Owned” and “Government Owned” engines and vehicles.

- **“Government”** is defined in Appendix D-2 of the Trust Agreement as a **State** or **local government agency** (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds), and a tribal government or native village.

Eligible Mitigation Actions - Environmental Mitigation Trust

- For **Non-Government Owned**, the percentage of the cost of the mitigation action that can be funded with Trust Funds is dictated by the sub-category of the mitigation action (i.e., repower with a New Diesel engine versus repower with a New All-Electric engine).
- Match is required for all **Non-Government Owned** projects.

- For **Government Owned** projects, up to 100% of the cost of the mitigation action can be funded with Trust Funds, regardless of the sub-category.
- Match is not required for **Government Owned** projects, but TN's Mitigation Plan can require it.

(See example breakout on next slide)

Eligible Mitigation Actions - Environmental Mitigation Trust

- Class 8 Local Freight Trucks
  - For **Non-Government Owned** Eligible Class 8 Local Freight Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
    - Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
    - Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - Up to 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric Engine.
    - Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric Vehicle.

Eligible Mitigation Actions - Environmental Mitigation Trust

- Class 8 Local Freight Trucks
  - For **Government Owned** Eligible Class 8 Local Freight Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
    - Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
    - Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
    - Up to 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric Engine.
    - Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric Vehicle.

Eligible Mitigation Actions - Environmental Mitigation Trust

- **Eligible Mitigation Action Administrative Expenditures:** For any Eligible Mitigation Action, Beneficiaries may use Trust Funds for actual administrative expenditures associated with implementing such Eligible Mitigation Action, not to exceed 15% of the total cost of such Eligible Mitigation Action.

What the Environmental Mitigation Trust CANNOT Fund

- Research and development

- Refueling infrastructure for diesel, natural gas or propane-powered vehicles.
  - The only allowable infrastructure costs are the cost of infrastructure associated with eligible All-Electric engines, vehicles, or equipment ***and*** the cost of acquisition, installation, operation and maintenance of new Light Duty ZEV Supply Equipment (Level 1, Level 2, and fast charging EV infrastructure, and hydrogen dispensing equipment).

- The repower or replacement of light-duty, passenger vehicles (the Environmental Mitigation Trust is focused on the repower or replacement of medium and heavy-duty vehicles, vessels, and equipment only)

Environmental Mitigation Trust: Additional Considerations

Scrappage: Vehicles or engines to be replaced must be scrapped. “Scrapped” shall mean to render inoperable and available for recycle, and to cut a 3-inch hole in the engine block for all engines. If a vehicle is to be replaced, “scrapped” shall also include the disabling of the chassis by cutting the vehicle’s frame rails completely in half.

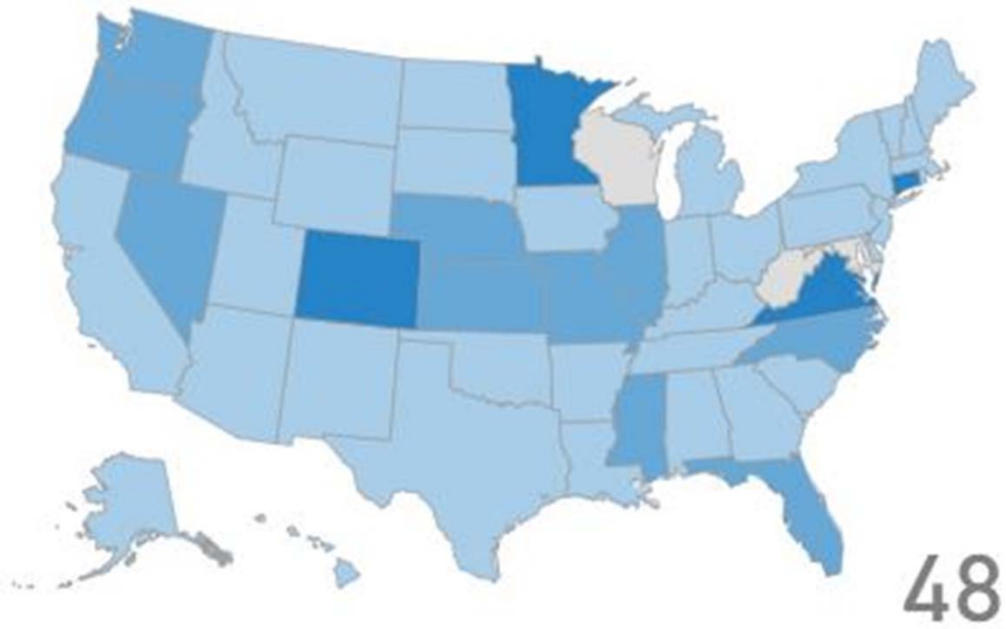
Environmental Mitigation Trust: Additional Considerations

- After the Beneficiary Mitigation Plan has been submitted, Beneficiaries may adjust their goals and spending plans at their discretion. To do this, Beneficiaries will need to provide the Trustee with updates and amendments to their Beneficiary Mitigation Plan.
- Beneficiaries have 10 years from the TED to request their allocation and implement Eligible Mitigation Actions. If Beneficiaries obligate at least 80% of their allocation by the 10th anniversary of the TED, they may be eligible to receive a supplemental weighted share of the remaining balance in unused funds. Beneficiaries that are eligible to receive such supplemental funding will be granted 5 years of additional time to select and implement appropriate Eligible Mitigation Actions.
- A Beneficiary may request up to 1/3 of its allocation during the first year and up to 2/3 of its allocation during the first two years.
- Beneficiaries must submit the Beneficiary Mitigation Plan at least 30 days prior to submitting the first funding request. Funding requests must contain much more detail than the Beneficiary Mitigation Plan.

TN

VW-Related Activity by Other States

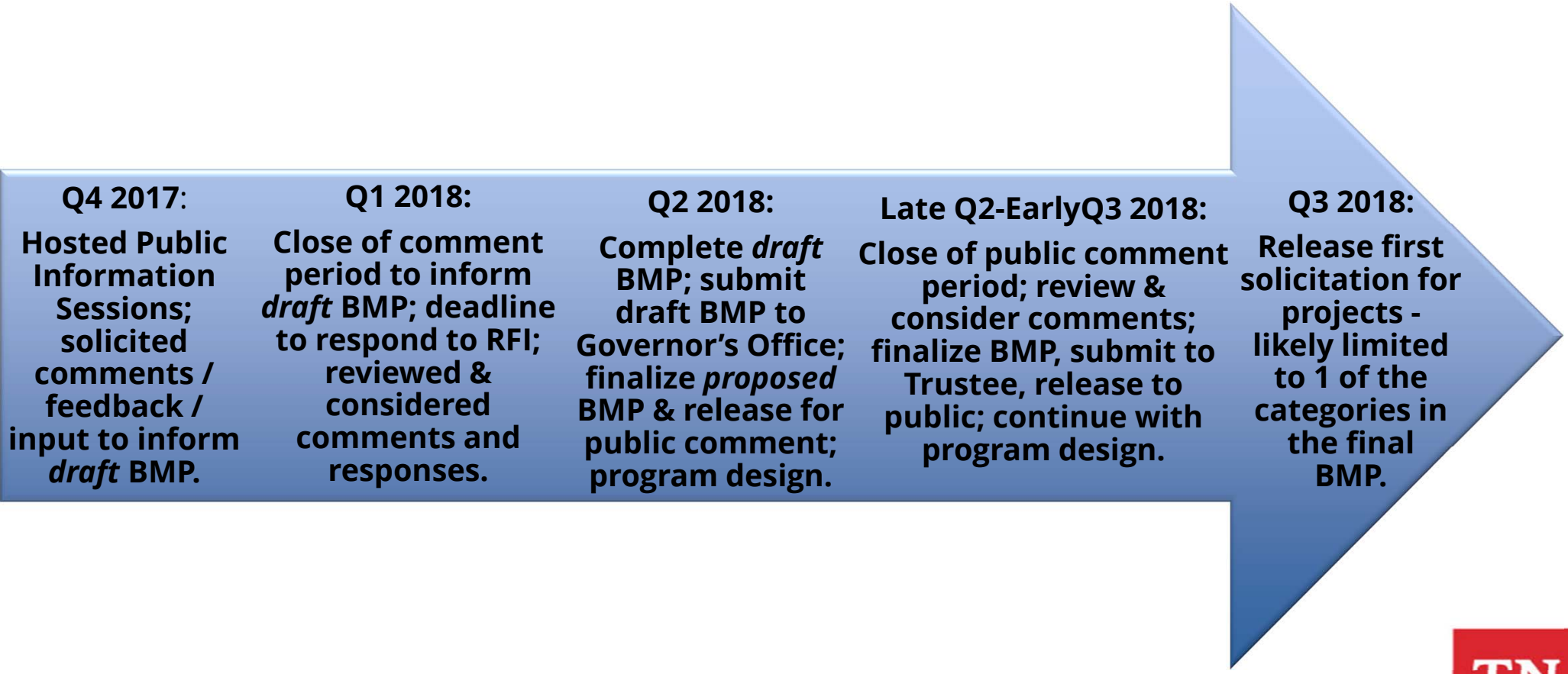
- As of 1/29/18, all states and relevant territories have been deemed Beneficiaries
- 48 states have requested some kind of public comment
- 29 draft Beneficiary Mitigation Plans and/or proposals have been released for public review by the states of: Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Georgia, Idaho, Illinois, Indiana, Iowa, Maine, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Vermont, Virginia, and Washington
- 2 states have released RFPs (Virginia and Colorado), both for Light Duty ZEV Supply Equipment



States that have requested some kind of public comment of 5/9/2018
Courtesy of Atlas Policy's EV Hub

TN

Timeline for BMP Development & Related Program Design



VW Public Info Sessions

To date, TDEC's Office of Energy Programs (OEP) has held five VW Diesel Settlement public information sessions in Nashville, Knoxville, Memphis, Chattanooga, and online via webinar. These meetings served to provide an overview of the VW Diesel Settlement, the Environmental Mitigation Trust, TDEC's process for developing a proposed Beneficiary Mitigation Plan for Tennessee, and the types of eligible mitigation actions that can be funded by Tennessee's Environmental Mitigation Trust allocation.

- **Nashville:** October 31, 10:30 am-12 pm Central
- **Knoxville:** November 7, 10:30 am-12 pm Eastern
- **Memphis:** November 17, 1:30 pm- 3 pm Central
- **Chattanooga:** December 15, 10:30 am-12 pm Eastern
- **Webinar:** December 19, 2 pm-3:30 pm Central. Please note that the webinar was recorded and a link to the recording will be posted on our Volkswagen Diesel Settlement Resources page.

Stakeholder Engagement in TN: Environmental Mitigation Trust

- A multi-disciplinary internal Advisory Council has been established, with members from Air Pollution Control, Office of Energy Programs, Office of Policy & Sustainable Practices, and Office of General Counsel.
- TDEC created a webpage that provides an overview of the Settlement, links to related resources, and a number of FAQs.
- TDEC sought public input from stakeholders to shape TN's Beneficiary Mitigation Plan. All public comments were to be submitted via a Public Comment Form on TDEC's website or directly through email or phone by **11:59 pm CST on January 15** to be considered for the *draft* Beneficiary Mitigation Plan.
- On December 12, TDEC released an RFI to seek cost information on Eligible Mitigation Actions, in order to inform TN's Beneficiary Mitigation Plan. Responses were due to TDEC by **January 23 at 11:59 PM CST**.

Section 4.2.8 : Notice of Availability of Mitigation Action Funds

- Section 4.2.8 of the Trust Agreement states that not later than 30 Days after being deemed a Beneficiary, each Beneficiary must provide a copy of the Trust Agreement to the U.S. Department of the Interior, the U.S. Department of Agriculture, and any other Federal agency that has custody, control or management of land within or contiguous to the territorial boundaries of the Beneficiary and has by then notified the Beneficiary of its interest hereunder, explaining that the Beneficiary may request Eligible Mitigation Action funds for use on lands within that Federal agency's custody, control or management (including, but not limited to, Clean Air Act Class I and Class II areas), and setting forth the procedures by which the Beneficiary will review, consider, and make a written determination upon each such request.

- Appendix D-2 to the Trust Agreement defines "Government" as a "State or local government agency."
- The term "Federal Agency" is defined in Section 1.11 of the Trust Agreement as "any agency of the United States government."

Variables Considered by TDEC VW TAC

- The current emissions inventory for Tennessee, as detailed by the Environmental Protection Agency's (EPA's) National Emissions Inventory (NEI) ;
- Expected ranges of emissions benefits from potential projects under all EMA categories except for Ocean Going Vessel Shorepower (determined to not be viable in Tennessee), calculated using the EPA's Diesel Emissions Quantifier (DEQ) ;
- Vehicle, vessel, and equipment inventories in Tennessee, sourced from the Tennessee Department of Transportation's vehicle inventory data (compiled by the University of Tennessee, Knoxville for NEI reporting), as well as from inventory data provided by stakeholders;
- Cost to Repower or replace eligible engines, vehicles, vessels, or equipment, sourced from responses to TDEC's RFI on cost information;
- Cost effectiveness of EMAs in terms of dollar spent per ton of NOx reduced;
- Potential impact to vulnerable populations or populations affected by a disproportionate share of the air pollution burden;

(Variables continued on next slide)

Variables Considered by TDEC VW TAC

- Lessons learned from emissions reduction and sustainable transportation programs;
- Economic development potential;
- Public input;
- Market demand for particular EMA categories, fuel types, and technologies, as expressed by potential applicants through public input (i.e., public interest in or support for);
- Viability of specific technologies, based on cost or commercial availability;
- Availability of other funding sources (e.g., Federal Highway Administration's Congestion Mitigation Air Quality Improvement Program – administered by TDOT, TVA's Electric Forklift Program, Federal Aviation Administration's Voluntary Airport Low Emissions Program);
- Opportunities to strengthen emergency preparedness through diversity of fuel and project types;
- Ability to maximize the State's allocation through required cost share; and
- Ancillary benefits (e.g., quietness of engines, health benefits to children's lungs from a school bus project).

Expected Ranges of Emissions Benefits

The Beneficiary Mitigation Plan (BMP) must include, "*a general description of the expected ranges of emissions benefits the Beneficiary estimates would be realized by implementation of the Eligible Mitigation Actions identified*."

Such emissions benefits could be measured or referenced in a variety of ways:

Emissions reductions in tons/year: Measuring emissions reductions in tons/year could allow for more of an apples to apples comparison across multiple project types. Within its draft BMP, the State of Colorado considers expected ranges of emissions benefits in tons/year.

Emissions reductions as a total lifetime reduction per project (this requires additional assumptions about the useful life of the vehicle or engine being replaced/repowered): Programs may also choose to evaluate emissions reductions as a total lifetime reduction per project, as this would incorporate additional assumptions and nuance related to the useful life of the vehicle or engine being replaced/repowered. Both the states of Pennsylvania and Washington have taken this approach in their draft BMPs:

Emissions reductions as a percent change: The State of Virginia references emissions reductions as a percent change; they do this by noting EPA exhaust emission standards for NOx and the differential that is expected when replacing one engine standard with another.

TN

Expected Ranges of Emissions Benefits

- Expected ranges of emissions benefits were calculated by Division of Air Pollution Control staff using EPA's Diesel Emissions Quantifier (DEQ), which provides a standard platform for computing the expected range in emissions reductions across a variety of on-road and non-road vehicles and engines.
- Expected ranges of emissions benefits were captured in tons/year, in order to allow for a side by side comparison of project types by annual emission reduction benefit.
- The State expects to also consider and evaluate lifetime emissions benefits (total emissions reductions to be achieved when taking into consideration the remaining useful life of the vehicle to be repowered or replaced) once additional and specific project details are known (e.g., actual model years and engine types proposed to be repowered or replaced); this is expected to occur during the project solicitation and review phases.

Evaluating Beneficial Impacts of Mitigation Actions

The VW Trust Agreement states, as part of what is required to be considered in the Beneficiary Mitigation Plan:

- *(iii) a description of how the Beneficiary will consider the potential beneficial impact of the selected Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction;*

Evaluating beneficial impacts of selected Eligible Mitigation Actions in areas that bear a disproportionate share of air pollution burden is dependent upon how TDEC defines *"areas that bear a disproportionate share of air pollution burden."*

Defining Areas of Burden

TDEC could define areas of disproportionate burden in a number of ways, or include all definitions:

- **High Emission Areas** – areas with higher than average concentrations of NOx based on National Emissions Inventory (NEI) data.
- **High Pollution Areas** – areas located near ports, rail yards, terminals, distribution centers, truck stops, construction sites, bus yards or depots, and other major sources of pollution; and/or areas with higher than Tennessee average criteria pollutant levels.
- **Areas or Communities**
  - With **higher than state average minority or low-income** populations;
  - With **higher than state average populations of elderly or young**; or
  - A combination of all these considerations.

Example of Resources: Eligible Vehicle Inventory in TN

According to TDOT's vehicle inventory data, which is used for reporting to EPA for the National Emissions Inventory, in 2014, TN had ***approximately***:

Class 8 Local Freight Trucks and Port Drayage Trucks:

- 41,938 combination short-haul trucks (with majority of operation within 200 miles of home base) (~63% are MY 1992-2009)
- 2,714 refuse trucks (~67% are MY 1992-2009);

Class 4-8 School Buses, Shuttle Buses, or Transit Buses:

- 827 transit buses; (~75% are 2009 or older) and
- 8,864 school buses (~78% are 2009 or older)

Class 4-7 Local Freight Trucks:

- 111,493 single-unit short-haul trucks (with majority of operation within 200 miles of home base) (~64% are MY 1992-2009)

TN

Example of Resources: Eligible Vehicle Inventory in TN

According to inventory data provided by stakeholders, TN has ***approximately***:

Freight Switchers:

- ~199 Tier 0 or Tier 0+ freight switchers in TN

Ferries / Tugs:

- ~255 eligible tugs/towboats/pushboats owned by TN-based operators [245 pushboats and 10 tugboats] ; 2 ferries [both owned and operated by TDOT; TDOT confirmed that both have newer engines not in need of replacement]

Airport GSE:

- ~3,279 pieces of equipment (Tier 0 [126], Tier 1 [1,256], or Tier 2 [1,897] diesel powered equipment)

Forklifts:

- ~12,189 eligible forklifts in TN (those already incentivized by TVA's forklift program were removed from total forklift population to get this number)

Port Cargo Handling Equipment:

- ~100 yard trucks; 1 rubber tire load and empty container lift at the Memphis port

Tools to Inform Beneficiary Mitigation Plan

TDEC will also utilize a variety of tools to inform its beneficiary mitigation planning process. A few examples of some of the tools that will be useful include:

- **EJSCREEN –** Environmental justice screening and mapping tool that combines environmental and demographic indicators in maps and reports.
- **Alternative Fuel Life-Cycle Environment and Economic Transportation (AFLEET) Tool** – Can provide estimates of fuel use, GHG emissions, NOx reductions achieved by switching to alternative fuel or from replacing older diesel engine with a new diesel engine, and cost of ownership (for on-road vehicle categories only).
- **Diesel Emissions Quantifier (DEQ) –** An EPA tool that specializes in estimating emissions from medium- and heavy-duty diesel engines (both on-road and non-road applications). The tool is designed to estimate baseline emissions, emissions reductions, cost-effectiveness, and health benefits from the reduction of particulate matter and is frequently used to estimate diesel emissions reductions for DERA projects.
- **Atlas Policy EV Charging Financial Analysis Tool** – Originally developed for the Washington State Legislature's Joint Transportation Committee to identify business models for financially sustainable, private-sector funded charging networks. The tool is able to calculate emissions benefits based on station use and an emissions factor.

Additional Resources

- **NASEO & NACAA VW Settlement Clearinghouse and Working Group –** The National Association of State Energy Officials (NASEO) and the National Association of Clean Air Agencies (NACAA) have created a VW Settlement Working Group to enable state-to-state communication on the VW settlement's Environmental Mitigation Trust. The VW Working Group facilitates monthly calls with State Energy Offices, Air Agencies, and other state leads to address pressing questions related to the settlement, allow peer-to-peer networking and information sharing, and explore potential multi-state activities under the Environmental Mitigation Trust. OEP Assistant Commissioner serves as a State Advisor to this Working Group.
  - A corresponding "Clearinghouse" website provides foundational information on the settlement, as well as tools and resources that states may use to learn more about eligible projects and to develop investment strategies that support the alternative fuels market, reduce mobile source emissions, and further state economic development, environmental, and energy efficiency goals.
- **Atlas Policy EV Hub –** This is an online platform to equip stakeholders with actionable information on the EV market. It contains information on vehicle sales, infrastructure deployment, public policy, and media coverage. The site also aggregates this information in easy-to-use dashboards to compare actions and activity across states.

Contact Us!

Molly Cripps, Assistant Commissioner

Molly.cripps@tn.gov

Or

Alexa Voytek, Energy Consultant / Senior Program Manager

Alexa.voytek@tn.gov

Office of Energy Programs

312 Rosa L Parks Ave.

Nashville, TN

615-741-2994

https://www.tn.gov/environment/VWSettlement