

Commonwealth of Pennsylvania



pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

Driving PA Forward
Interim Report

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TABLE OF CONTENTS

I.	Driving PA Forward: Overview	3
II.	Funding Program Progress Updates.....	4
	A. Truck and Bus Fleet Grants.....	4
	B. Onroad Rebates–Trucks and Buses.....	5
	C. Electric Cargo Handling Grants.....	5
	D. Marine and Rail Freight Movers Grants	6
	E. PA State Clean Diesel Grants	6
	F. DC Fast Charging and Hydrogen Fueling Grants.....	7
	G. Level 2 Charging Rebates.....	7
	H. Oceangoing Vessel Shorepower Grants.....	8
	I. Total Emissions Reductions.....	8
III.	Program Evaluation.....	9
IV.	Conclusion.....	10

I. Driving PA Forward: Overview

Reducing emissions from diesel engines is a significant air quality challenge facing the Commonwealth of Pennsylvania.

To help Pennsylvania meet its diesel emissions reduction goals, the Wolf Administration in 2018 launched Driving PA Forward, a complement of grant and rebate programs to improve air quality in Pennsylvania and drive transformation from older, polluting diesel engines to clean technologies. New engine technologies, including electric, compressed natural gas, propane, and clean diesel, significantly reduce pollutants from freight and delivery trucks, transit and school buses, cargo handling equipment, oceangoing vessels in port, forklifts, tugs, and freight switchers that rely on older diesel technology.

The Driving PA Forward program has issued 79 grants and 995 rebates, awarding over \$70.9 million, as of the end of the 2021 fiscal year on June 30, 2022. Funded projects have reduced the emission of air pollutants across Pennsylvania and catalyzed additional air pollution reduction projects as well as the development and operation of clean energy infrastructure. This progress will continue as the approximately \$47.9 million in remaining funds is spent.

Background

In 2016 and 2017, the federal government and California pursued litigation against Volkswagen and its affiliates regarding certain vehicles that violated vehicle emissions standards in the case called *In Re: Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation*, 15-MD-2672-CRB (JSC). This legal action resulted in the United States District Court for the Northern District of California’s approval of two Consent Decrees, which established a \$2.9 billion Environmental Mitigation Trust Agreement (Mitigation Trust). Participating state beneficiaries, including Pennsylvania, were tasked with administering these funds by providing programs to reduce oxides of nitrogen (NOx) emissions from eligible categories of mobile diesel sources to mitigate the unlawful emissions.

NOx are precursors in the formation of ground-level ozone and fine particulate matter (PM_{2.5}). At elevated levels, ground-level ozone and PM_{2.5} can adversely affect both the environment and human health. Mobile sources of NOx also emit hydrocarbons, which react with NOx in the presence of sunlight to form ground-level ozone. Fossil fuel combustion also produces carbon dioxide, a greenhouse gas that contributes to climate change.

Pennsylvania’s allocation of \$118.54 million from the Mitigation Trust was based on the percentage of unlawful Volkswagen vehicles registered in the commonwealth compared to the number registered nationally. The Pennsylvania Department of Environmental Protection (DEP) was designated as the official or “lead” agency to receive and distribute these funds in the commonwealth. DEP’s [Beneficiary Mitigation Plan](#) (Mitigation Plan), finalized in May 2018, summarizes DEP’s planned use of the allocated funds. See 48 Pa.B. 2892; May 12, 2018.

Eligible Projects

Projects eligible for funding include repowering diesel vehicles, engines, or equipment with new engines or replacing older diesel vehicles, engines, or equipment with new vehicles, engines, or equipment. Additionally, oceangoing vessel shorepower applications and light-duty zero emission vehicle supply equipment projects are also eligible for funding under the settlement. The following vehicles and equipment are eligible for funding as listed in Appendix D-2 of the Mitigation Plan:

On-Road Fleet Projects:

- Class 8 Local Freight Trucks and Port Drayage Trucks;
- Class 4-8 School Buses, Shuttle Buses, or Transit Buses; and
- Class 4-7 Local Freight Trucks.

Non-Road/Off-Road Fleet Projects:

- Freight Switchers; Ferries/Tugs;
- Ocean Going Vessels Shorepower;
- Airport Ground Support Equipment; and
- Forklifts and Port Cargo Handling Equipment.

Diesel Emission Reduction Act (DERA) Fleet Projects:

- Settlement funds are used to match federal DERA funds and to increase the financial incentives for the Pennsylvania State Clean Diesel Grant Program.

Light-Duty Zero Emission Vehicle Supply Equipment:

- Projects are related to light-duty zero emission vehicle supply equipment, including public and private electric vehicle charging equipment and hydrogen fuel cell refueling equipment.

II. Funding Program Progress Updates

This section provides updates on the status of the Driving PA Forward funding programs, including the initial budget, investments to date (through June 30, 2022), estimated administrative costs, amount of funding remaining, and estimated annual emissions reductions in oxides of nitrogen (NO_x), fine particulate matter (PM_{2.5}), hydrocarbons (HC), and carbon dioxide (CO₂) the investments have achieved. Investments represent the sum of the awards, commitments, and expenditures for approved projects.

A. Truck and Bus Fleet Grant Program

Provides competitive grants to replace or repower fleets of six or more Class 4-8 trucks, port drayage trucks, school buses, shuttle buses, and/or transit buses.

Initial budget:	\$16.1 million
Investments to date:	\$12.4 million
Estimated administrative costs:	\$150,987.35
Budgeted funds remaining:	\$3.7 million

Estimated annual emissions reductions from investments:

NOx:	95.45 tons
PM _{2.5} :	8.23 tons
HC:	7.67 tons
CO ₂ :	5,696 tons

B. Onroad Rebate Program – Trucks and Buses

Provides rebates for projects that replace or repower single vehicles or fleets of five or fewer vehicles that are Class 4-8 trucks, port drayage trucks, school buses, shuttle buses, and/or transit buses.

Initial budget:	\$29.9 million
Investments to-date:	\$25.1 million
Estimated administrative costs:	\$603,949.42
Budget funds remaining:	\$4.8 million

Estimated annual emissions reductions from investments:

NOx:	45.97 tons
PM _{2.5} :	3.69 tons
HC:	6.51 tons
CO ₂ :	2,475 tons

C. Electric Cargo Handling Grant Program

Provides competitive grants for electrifying forklifts, airport ground support equipment, and port cargo handling equipment.

Initial budget:	\$5.9 million
Investments to-date:	\$435,000
Estimated administrative costs:	\$40,052.04

Budgeted funds remaining:		\$5.5 million
Estimated annual emissions reductions from investments:		
	NOx:	8.27 tons
	PM _{2.5} :	2.72 tons
	HC:	0.88 tons
	CO ₂ :	583 tons

D. Marine and Rail Freight Movers Grant Program

Provides competitive grants for the repower of ferries and tugboats and the repower or replacement of freight switcher locomotives.

Initial budget:		\$34.1 million
Investments to-date:		\$10.0 million
Estimated administrative costs:		\$50,098.04
Budgeted funds remaining:		\$24.1 million
Estimated annual emissions reductions from investments:		
	NOx:	38.14 tons
	PM _{2.5} :	1.03 tons
	HC:	2.83 tons
	CO ₂ :	898 tons

E. PA State Clean Diesel Grant Program

Provides competitive grants for a wide variety of diesel emission reduction projects. Emission reduction technologies may include exhaust controls, engine upgrades, engine and vehicle replacement, idle reduction technologies, and aerodynamic technologies.

Initial budget:		\$8.9 million
Investments to-date:		\$7.0 million
Estimated administrative costs:		\$144,076.55
Budgeted funds remaining:		\$1.9 million
Estimated annual emissions reductions from investments:		
	NOx:	81.20 tons

PM _{2.5} :	6.83 tons
HC:	4.98 tons
CO ₂ :	4,701 tons

F. DC Fast Charging and Hydrogen Fueling Grant Program

Provides competitive grants for the acquisition, installation, operation, and maintenance of electric vehicle (EV) fast charging equipment and hydrogen fuel cell vehicle supply equipment.

Initial budget:	\$8.5 million
Investments to-date:	\$8.5 million
Estimated administrative costs:	\$52,765.06
Budgeted funds remaining:	\$0.00
Estimated annual emissions reductions from investments:	
	NO _x : 2.21 tons
	PM _{2.5} : 0.08 tons
	HC: 1.0 tons
	CO ₂ : 1,112 tons

G. Level 2 EV Charging Rebate Program

Provides rebates for the installation of Level 2 EV charging equipment for public use at government and non-government owned property and non-public use at workplaces and multi-unit dwellings.

Initial budget:	\$9.2 million
Investments to-date:	\$7.5 million
Estimated administrative costs:	\$211,060.25
Budgeted funds remaining:	\$1.7 million
Estimated annual emissions reductions from investments:	
	NO _x : 13.09 tons
	PM _{2.5} : 0.53 tons

HC:	8.63 tons
CO ₂ :	14,881 tons

H. Oceangoing Vessel Shorepower Grant Program

Provides competitive grants for reducing emissions from oceangoing vessels.

Initial budget:	\$5.9 million
Investments to-date:	\$0.00
Estimated administrative costs:	\$0.00
Budgeted funds remaining:	\$5.9 million
Estimated annual emissions reductions from investments:	
NOx:	0 tons
PM _{2.5} :	0 tons
HC:	0 tons
CO ₂ :	0 tons

I. Total Emissions Reductions

Total budget:	\$118.5 million
Investments to-date:	\$70.9 million
Estimated administrative costs:	\$1.25 million
Budgeted funds remaining:	\$47.9 million*
Estimated annual emissions reductions from investments:	
NOx:	284.33 tons
PM _{2.5} :	23.1 tons
HC:	32.5 tons
CO ₂ :	30,346 tons

*The sum of the Investments to-date and the Funds remaining does not equal the Total budget exactly due to rounding.

III. Program Evaluation

Driving PA Forward funding programs evaluate numerous project criteria and prioritize funding projects that are the most cost-effective and yield the largest amounts of oxides of nitrogen (NOx) emission reductions. DEP periodically evaluates the implementation and results of the programs within the Mitigation Plan to ensure that these overall goals are met as effectively and efficiently as possible. This analysis is then used to determine whether any revisions to the Mitigation Plan, including individual program funding levels, are appropriate or necessary.

Based on DEP's recent analysis, the Oceangoing Vessel Shorepower Grant Program (Shorepower Grant Program) has not received any grant applications to date after multiple grant proposal solicitations and is therefore being discontinued. The lack of interest in this program was primarily due to the ownership structures of the ports and a lack of any regulatory or financial drivers for shorepower projects. The \$5.9 million initially budgeted for the Shorepower Grant Program will be redistributed.

Additionally, Pennsylvania's settlement funds have earned approximately \$5.2 million of interest since the establishment of the Mitigation Trust. Furthermore, the refundable court fees held by the Clerk of Courts for the United States District Court for the Northern District of California will provide Pennsylvania with an additional \$1.6 million.

In total, approximately \$12.7 million is currently available from the Driving PA Forward program for redistribution from these three sources.

Based on the success of the existing Truck and Bus Fleet Grant Program and changes in the truck and bus fleet inventory since the inception of the grant program, DEP developed a Medium- and Heavy-Duty Zero Emission Vehicle (MHD-ZEV) Fleet Pilot Grant Program and will be accepting grant applications through March 1, 2023.

DEP believes that this MHD-ZEV initiative will be transformative, demonstrate proof of concept, and serve as a roadmap for future projects. This program will provide funding for Class 4-8 commercial and municipal fleet replacement projects to demonstrate and verify MHD-ZEVs' performances in real-world fleet applications.

The \$12.7 million of funding eligible for Driving PA Forward programs will allow DEP to offer the MHD-ZEV Fleet Pilot Grant Program while continuing to make awards for non-ZEV vehicle types under the existing Truck and Bus Fleet Grant Program. This program will prioritize driving diesel emissions reductions from MHD fleets operating in Environmental Justice areas. Proposed projects must include the replacement of either 20 percent of the applicant's fleet or at least five diesel-powered, on-road MHD trucks with ZEVs and be submitted to DEP in accordance with section 5.2 of the Mitigation Trust.

IV. Conclusion

Driving PA Forward has been successful in reducing emissions from diesel engines by driving transformation from older, polluting diesel engines to cleaner technologies. Collectively, the Driving PA Forward grant programs have resulted in an estimated annual emissions reduction of nearly 285 tons of oxides of nitrogen (Nox), along with significant emissions reductions of several other co-pollutants (see table on page 8). DEP expects that Driving PA Forward will further its positive impacts and maximize cost-effective NOx reductions by redistributing funding from the Shorepower Grant Program to the MHD-ZEV Fleet Pilot Grant Program.