

## Cleaner Air Starts with Cleaner Trucks.

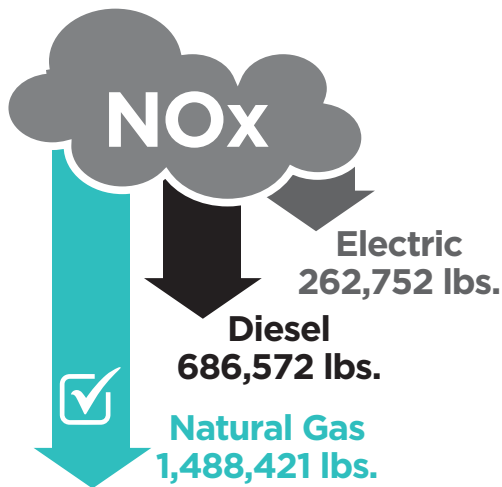
From small fixed-route haulers and port drayage companies to major parcel deliverers and national freight carriers, heavy-duty (HD) natural gas trucks are providing fleets of all sizes with considerable fuel savings and environmental benefits.

Ultra Low-NOx Natural Gas Trucks provide the proven and commercially-ready-right-now power, performance, and range required for reliable goods movement.



# Make a Difference with Natural Gas Heavy-Duty Trucks

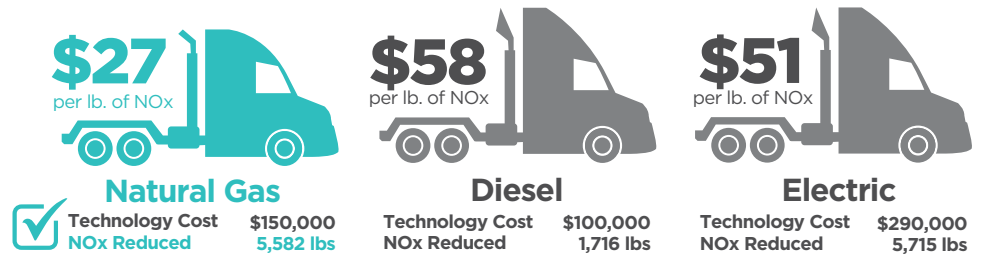
### Lifetime Pounds of NOx Reduced



Figures above represent the lifetime emission reduction benefits of using \$10 million to replace older diesel vehicles with new, cleaner trucks. For purposes of the calculations here, it is assumed that VW Settlement Funds are used to offset 25% of the cost of each new natural gas and diesel HD truck and 75% of the cost of a new electric HD truck, as allowed by the Trust.

### Road Ready & Ready to Deploy... Every Class. Every Application

The VW Settlement's Environmental Mitigation Trust (EMT) Fund provides millions in funding for states to replace older diesel vehicles with new cleaner trucks and buses that reduce NOx emissions. Other federal and state programs provide varying levels of incentives to encourage fleets to purchase new, cleaner trucks. New natural gas trucks deliver the greatest amount of emission reductions for the dollars spent (cost-effectiveness based on full cost of each technology).



### Natural Gas Achieves the Most Cost-Effective NOx Emissions Reductions

When comparing the cost of NOx reduction, natural gas HD trucks are **53 percent** more cost effective than diesel alternatives and **47 percent** more cost effective than electric options.

*\*Emission comparisons are based on results using Argonne National Laboratory's HDVEC tool (<https://afleet-web.ex.anl.gov/hdv-emissions-calculator/>) and include modeling of new low-NOx natural gas engines and the diesel in-use emission option.*



Find out more about championing reduced truck emissions and realizing real fuel savings for your fleet at [www.ngvamerica.org](http://www.ngvamerica.org).

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Natural Gas Vehicles for America

## The Fastest Way to Combat On-Road Carbon and Achieve Zero Emissions Now

The cleanest HD truck engine in the world runs on natural gas. The Ultra-Low NOx natural gas engine — made in America — is 90 percent cleaner than the EPA's current NOx standard. It is certified by both the EPA and the California Air Resources Board to a 0.02 gram per brake horsepower hour (g/bhp-hr) standard, making it zero-emission equivalent (ZEE) or cleaner when considering power generation on a life-cycle basis.

When renewable natural gas (biomethane) captured from landfills, wastewater, and food and agricultural waste is used to fuel it, unsurpassed CO2 and GHG emissions reductions are achieved, helping to clean our cities and improve the environment. With renewable natural gas, the product becomes carbon neutral or even negative.

Sources: U.S. Environmental Protection Agency and the California Air Resources Board

## Heavy-Duty = Big Impact

Replacing one traditional diesel-burning heavy-duty truck with one, new Ultra Low-NOx natural gas heavy-duty truck is the emissions equivalent of removing 119 traditional combustion engine cars from our roadways.

Figures compiled using:  
[https://greet.es.anl.gov/afleet\\_tool](https://greet.es.anl.gov/afleet_tool).



## Lower Fuel and Maintenance Costs

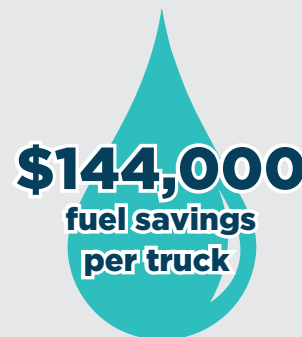
Natural gas trucks are easier to maintain than diesel counterparts:

- No diesel particulate matter filter regeneration or waste
- No selective catalytic reduction • No diesel emissions fluid

## Clearing the Air Doesn't Have to Break the Bank

Natural gas trucks offer a fast return-on-investment (ROI) due to low fuel and maintenance costs.

With today's oil prices, natural gas prices can be \$.75 to \$1.50 or more lower than diesel at the pump. This price differential quickly translates into substantial fuel savings for HD fleets.



(for anticipated 12 year vehicle life)

## Calculate Natural Gas Emissions Benefits Yourself

Compare emissions of commercially-available alternative fuel medium- and heavy-duty vehicles with the Heavy-Duty Vehicle Emissions Calculator (HDVEC) tool.

Developed by the U.S. Department of Energy's Argonne National Laboratory using its AFLEET Tool 2017, this online

Accessible online at:  
<http://afleet-web.es.anl.gov/hdv-emissions-calculator/>  
or <http://www.ngvamerica.org/vwactioncenter/>.

resource aids school bus fleet managers and decision makers in comparing vehicle emission reduction options to assist in maximizing their new vehicle funding investment.



HEAVY-DUTY VEHICLE  
EMISSIONS CALCULATOR



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