MISSOURI DEPARTMENT OF NATURAL RESOURCES

Volkswagen Trust
Be Part of the Solution

Fiscal Year 2020 Implementation Guidelines:
Nongovernment Trucks

Diesel Truck engine replacements (repowers) and vehicle replacements (replacements) will help achieve several goals of the Missouri Beneficiary Mitigation Plan (BMP). The main goal of this program is to maximize nitrogen oxide (NO_x) emissions reduction by replacing diesel trucks that operate on a regular basis with newer, more efficient trucks which will reduce diesel-related pollution. Owners of eligible vehicles may submit an application to request funds for repower and replacement projects. The air program will award Volkswagen Trust (VW) funds to projects with the most cost-efficient method of reducing NO_x emissions (i.e. projects with the lowest price per pound of NO_x reduction). The purpose of these guidelines is to provide information for applicants in developing a competitive project.

Eligible Trucks:

In order to be eligible for this award category, a project must meet <u>all</u> of the following criteria:

- Vehicle is owned by a private entity
- Vehicle is class 4-8 with a Gross Vehicle Weight Rating (GVWR) of 14,000 lbs or more
- Vehicle spends a minimum of 50% of its operating time in Missouri
- Engine is diesel-powered and is a model year between 1992 and 2009
- Project's price per pound of NO_x reduction must be less than $20 per pound

Projects are ineligible for funding if:

- Project receives funding from another source such as other states' shares of the VW Trust, Diesel Emissions Reduction Act (DERA) grant, or Congestion Mitigation and Air Quality (CMAQ) grant, without prior approval from the air program
- Project application is missing any of the following pieces of information necessary to quantify a project's price per pound:

o Funding Requested
o Vehicle GVWR
o Vehicle Type
o Old and New Truck Fuel Type
o Old and New Truck Engine Model Year
o Usage data: Annual Fuel Use in Gallons, Annual Miles Driven, and Annual Idle Hours
o NO_x Certification Rating (in grams/braking horsepower-hour) for non-diesel engines

The new replacement vehicle or engine must also meet the following requirements:

- Must be powered by Diesel, Biodiesel, Compressed Natural Gas (CNG), Liquid Natural Gas (LNG), Propane, a Diesel-Electric Hybrid engine, or an All-Electric motor
  o Per the federal consent decree the new replacement vehicle or engine cannot be powered by gasoline, and such vehicles will not be considered
- Must be the same vehicle class as the old vehicle, or a lower class

Applicants may request several trucks to be replaced or repowered, and may request up to $1,000,000 in total across their applied-for projects. Individual projects on an application may request up to 40% of the cost to repower a vehicle with a new diesel or alternate-fueled engine, 25% of the cost to replace a vehicle with a new diesel or alternate-fueled vehicle, or 50% of the cost to repower or replace a vehicle with a new all-electric engine.

Ranking Process:

This award category is competitive, and projects will be ranked by their price per pound as determined by the air program, from the lowest price per pound to the highest. Projects will be considered individually, and those with the lowest price per pound will be awarded funds. A project's price per pound is measured in dollars per pound ($/lb) and is calculated as follows:

$$Price\ Per\ Pound = \frac{Amount\ of\ Funding\ Requested}{Lifetime\ pounds\ of\ NO_x\ Reduced\ by\ Project}$$

Price per pound is the amount of money the VW Trust pays for each pound of NO_x reduced by a project. In order to maximize the efficiency of the program, the air program is looking for projects with the lowest cost to reduce NO_x emissions. Only projects with a price per pound below $20 per pound will be considered, and these projects will be ranked by their price per pound to determine which are funded. The air program set $20 per pound as the threshold based on stakeholder feedback and interest in achieving NO_x reduction goals as set out in the BMP. This threshold achieves the specific goals for this award category with the allocated funding from Missouri's share of the VW Trust Fund.

In order to compare projects in a uniform way, the air program has set the eligible diesel truck's useful lifetime to 25 years based on stakeholder feedback; and vehicles in use for the year prior

to application are assumed to have at minimum 2 years of useful lifetime remaining. The remaining lifetime is used to determine a project's lifetime emissions reduction, and can be found below listed for the eligible model years.
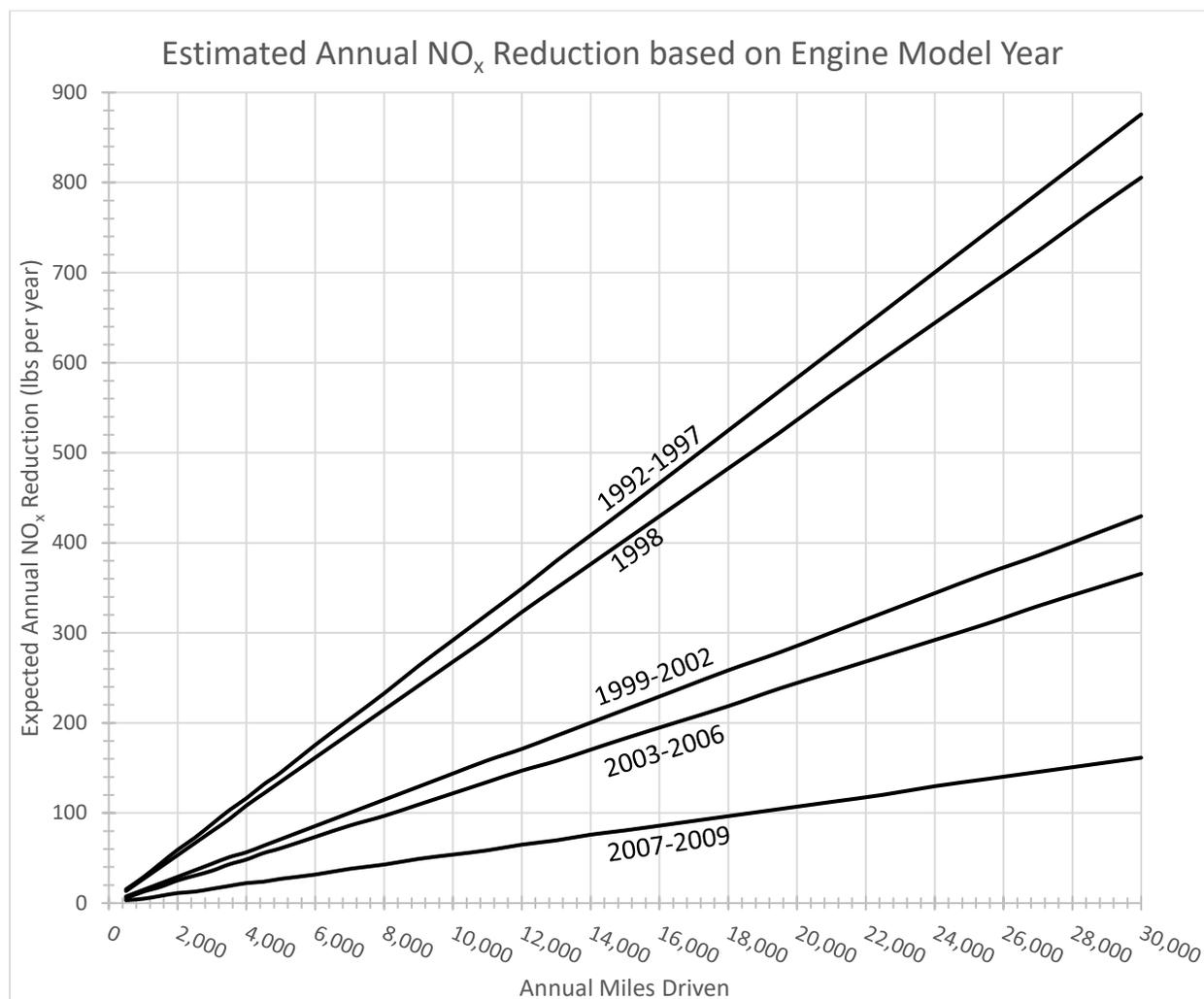
Table: Remaining Lifetime by Model Year

Model Year	Remaining Lifetime	Model Year	Remaining Lifetime	Model Year	Remaining Lifetime
1992	2 Years	1998	3 Years	2004	9 Years
1993	2 Years	1999	4 Years	2005	10 Years
1994	2 Years	2000	5 Years	2006	11 Years
1995	2 Years	2001	6 Years	2007	12 Years
1996	2 Years	2002	7 Years	2008	13 Years
1997	2 Years	2003	8 Years	2009	14 Years

Based on stakeholder input, the air program will use EPA's Diesel Emissions Quantifier (DEQ) to calculate a project's emissions reduction. This is a publicly-available tool which applicants are highly encouraged to use to quantify their own projects before submission to ensure completeness and to determine the competitiveness of their project. Applicants can find EPA's DEQ at https://cfpub.epa.gov/quantifier/.

EPA's DEQ requires specific project information to determine actual emissions reductions. In order to provide general information to help applicants evaluate their projects, the air program has developed the following graph to illustrate the estimated annual NO_x reduction of a project based on a vehicle's annual miles driven and engine model year. This graph only provides an estimate of a project's emission reduction potential and may not accurately reflect every project. Results from this graph are estimates and do not entitle any project to be funded by the program without approval. The air program will use EPA's DEQ with specifics from the project application to calculate the emission reductions of a project when ranking applications. Applicants are encouraged to use the tool to determine the emissions reductions from their specific project prior to submitting an application.

Chart: Estimated Annual NO_x Reduction

Estimated Annual NO_x Reduction based on Engine Model Year

[Chart with X-axis "Annual Miles Driven" from 0 to 30,000 and Y-axis "Expected Annual NO_x Reduction (lbs per year)" from 0 to 900, showing lines labeled: 1992-1997, 1998, 1999-2002, 2003-2006, 2007-2009]

To use this graph, find the intersection of the project's annual miles driven and model year. The left axis at that intersection will give an estimation of the annual NO_x emissions reduction. To get the estimated lifetime emissions reduction, multiply this number by the vehicle's remaining lifetime. A project's price per pound can then be calculated by dividing the requested funding by the lifetime emissions reduction.

Although the graph will help applicants determine an estimated price per pound, the air program highly recommends using EPA's DEQ to determine the actual emissions reductions from your project. The air program will use EPA's DEQ when selecting projects.

Area-specific Ranking of Projects:

As outlined in the BMP, the air program plans to target specific areas of the state which bear a disproportionate amount of NO_x-related environmental burden. The air program will lower a

project's calculated price per pound based on a project's area of operation to make it more competitive as detailed below:

- For every 10% operating time spent in the boundaries of the City of St. Louis or St. Louis County, the program will reduce a project's price per pound by $0.10
- For every 10% operating time spent in the boundaries of Jackson or St. Charles counties, the program will reduce a project's price per pound by $0.08
- For every 10% operating time spent in the boundaries of Jefferson or Franklin counties, the program will reduce a project's price per pound by $0.06
- For every 10% operating time spent in the boundaries of Clay or Platte counties, the program will reduce a project's price per pound by $0.04
- For every 10% operating time spent in the boundaries of Boone or Greene counties, the program will reduce a project's price per pound by $0.02

Additionally, every 10% operating time spent outside the State of Missouri will <u>increase</u> a project's price per pound by $0.10 in order to give advantage to projects which spend the most time in the state.

Award Category Funding Details:

The BMP has dedicated a maximum of $6 million to this award category to be distributed to nongovernment truck projects across the state. As determined through stakeholder input, the air program is first focusing on three specific areas of the state. The air program will set aside $3 million for three funding pools that target the St. Louis area, Kansas City area, and the remaining areas of the state. This will allocate the funds to these areas while identifying the lowest cost options. The air program will open several application periods to award each pool's allotted funding, as long as funding for this category and public interest remain. The set-aside funding and funding pool requirements are listed below.

Table: Funding Pool Details

Funding Pool	Vehicle Must Operate At Least 50% in These Counties	Approximate Funding Available
St. Louis	City of St. Louis, St. Louis, St. Charles, Jefferson, and/or Franklin	50% (~$1,500,000)
Kansas City	Clay, Platte, and/or Jackson	20% (~$600,000)
Outside Both St. Louis and Kansas City	Any Missouri County not listed under St. Louis or Kansas City Funding Pools	30% (~$900,000)

Once all the targeted funds have been awarded, the air program will take applications for the remaining funds. Projects competing for the remaining funding will be ranked on a statewide basis with no restriction based on a specific area of the state. Should any funds still remain after the statewide application periods, funds from this category will be moved to another category of Missouri's VW Trust NO_x emissions reduction program as outlined in the BMP.