

Texas Natural Gas Vehicle Grant Program (TNGVGP)

Determining the Emission Standard for the Diesel or Gasoline Vehicle or Engine to be Replaced or Repowered

To determine the applicable NO_x emissions factor for the vehicle or engine being replaced or repowered (i.e. the old vehicle or engine), applicants should look on the vehicle or engine emissions label to determine the emissions model year and the standards to which the vehicle or engine was certified. The standards for medium-duty passenger vehicles (MDPV) and heavy-duty engines are listed in the tables below.

A twelve-digit vehicle test group number (medium-duty passenger vehicle) or engine family code (heavy-duty engine) is assigned to the vehicle or engine. The vehicle test group or engine family is printed on the engine emissions label. This number is assigned by the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) when testing and certifying the emission of a vehicle model or heavy-duty engine family. The test group or engine family code should be entered into the application.

Applicants may also use this number to look up the information at the EPA and/or CARB engine certification web sites to confirm the emissions certification and whether the vehicles or engines were certified to an alternative FEL:

- EPA - www.epa.gov/otaq/hwy.htm
- CARB - www.arb.ca.gov/msprog/onroad/cert/cert.php

Emission Standards Tables

1. Table 1 shows the NO_x emissions in grams per mile (g/mile) for each bin category. For MDPV's, the bin to which the vehicle is certified should be listed on the emissions label. For pre-2004 MDPVs, the emission standard corresponding to the model year of the vehicle should be used.
2. Table 2 shows the NO_x emissions in grams per brake horsepower hour (g/bhp-hr) for heavy-duty diesel engines by model year.
3. Table 3 shows the NO_x emissions in grams per brake horsepower hour (g/bhp-hr) for heavy-duty gasoline engines by model year.

Note: For heavy-duty vehicles that are chassis certified in grams per mile (g/mile), the emissions standard should be listed on the emissions label. If it is not, you may contact the program for assistance in determining that value.

The NO_x emission standard for heavy-duty diesel engines was reduced to 0.20 g/bhp-hr under a phase-in approach between 2007 and 2010. Manufacturers were allowed to phase in their compliance with this new standard over a three-year period. If the vehicle being replaced has an engine model year of 2007-2009, you must verify the engine family name/code and the emissions standard to which it was certified.

The NO_x emission standard for spark-ignition engines was reduced to 0.20 g/bhp-hr under a phase-in approach between 2008 and 2009. Manufacturers were allowed to phase in their compliance with this new standard. If the vehicle being replaced has a gasoline engine with a model year of 2008, you must verify the engine family name/code and the emissions standard to which it was certified.

Some vehicles or engines may be certified to a different emissions rate than the standard applicable to the model year of the vehicle or engine. Those vehicles or engines will be assigned a Family Emissions Limit (FEL). The certified FEL emissions level may be listed on the emissions label. If the vehicle or engine is FEL'd to a different emissions rate than the standard applicable to that model year, that rate should be entered on the application.

Table 1: EPA Tier 2 (Bin 1-11) Emission Standards

Emission Standard Category	Model Year	NO_x (g/mile)
Bin 1	2004+	0.00
Bin 2	2004+	0.02
Bin 3	2004+	0.03
Bin 4	2004+	0.04
Bin 5	2004+	0.07
Bin 6	2004+	0.10
Bin 7	2004+	0.15
Bin 8a	2004+	0.20
Bin 8b	2004-2008	0.20
Bin 9a	2004-2006	0.30
Bin 9b	2004-2006	0.30
Bin 9c	2004-2008	0.30
Bin 10a	2004-2006	0.60
Bin 10b	2004-2008	0.60
Bin 10c	2004-2008	0.60
Bin 11	2004-2008	0.90

Table 2: EPA Heavy-Duty Diesel Engine NO_x Emission Standards by Model Year

Year of Manufacture	NO_x (g/bhp-hr)
1989 and earlier	10.7
1990	6.0
1991-1997	5.0
1998-2001	4.0
2002	4.0
2003*	4.0
2004 -2006	2.375
2007-2009**	2.375 - 0.2
2010+	0.2

*Some manufacturers were producing 2003 engines that met the more stringent 2.375 g/bhp-hr standard, as a result of a consent decree with the EPA.

**The NO_x emission standard for heavy-duty diesel engines was reduced to 0.20 g/bhp-hr under a phase-in approach between 2007 and 2010. Manufacturers were allowed to phase in their compliance with this new standard over a three-year period.

Table 3: EPA Heavy-Duty Highway Spark-Ignition Engines NO_x Emission Standards (g/bhp-hr)

Year of Manufacture	NO_x (g/bhp-hr)
1984 and earlier	10.6
1985-1987	10.6
1988-1990	10.6
1991-1997	5.0
1998-2004	4.0
2005-2007	0.8
2008	0.8 - 0.2

*The NO_x emission standard for spark-ignition engines was reduced to 0.20 g/bhp-hr under a phase-in approach between 2008 and 2009. Manufacturers were allowed to phase in their compliance with this new standard.