

**APPENDIX A**  
**INSTRUCTIONS FOR DETERMINING**  
**THE MAXIMUM REBATE GRANT AMOUNT**

Instructions are provided below for using the tables provided in Appendix C (5 years) and Appendix D (7 years) for on-road vehicle projects and Appendix E and F for non-road equipment projects to determine the maximum rebate grant amount available for a proposed project.

**1. On-Road Vehicles (Appendix C and D)**

**Step 1. Determine the Gross-Vehicle Weight Rating (GVWR) of the Vehicle**

The GVWR is the total allowable or recommended vehicle weight, including the loaded weight of the vehicle, driver, passengers, and cargo. The rated weight is usually found on a label affixed to the inside of the door or other area of the vehicle and may also be listed on the vehicle title and registration documents.

If the vehicle is normally operated in combination with a trailer, such as an 18-wheel semi-tractor and trailer rig, then use the Gross Combined Weight Rating (GCWR) of both the vehicle and the trailer. However, if a trailer is only attached occasionally, use the GVWR for the vehicle only. Check with TCEQ staff if you are unsure as to what GVWR to use. Further information regarding the GVWR can be found in Appendix K.

**Step 2. Select either a 5-year or 7-year activity life**

The grant recipient must agree to monitor the use of grant-funded vehicle or equipment for the designated Activity Life. For this program, an applicant must choose in the application form an Activity Life of either 5 or 7 years. The maximum rebate grant amount table corresponding to the Activity Life chosen must be used to determine the grant amount. The Activity Life is the period of time (in years) used to calculate the amount of NO<sub>x</sub> emissions reductions that will be achieved through the use of the grant-funded vehicle or equipment.

**Step 3. Find the Rebate Grant Table for the GVWR and Activity Life**

The tables in Appendix C correspond to an Activity Life of 5 years, while Appendix D includes the tables corresponding to a 7-year Activity Life. Tables are provided showing the maximum funding amounts for use in the eligible counties. The applicant must use the table applicable to the weight category of the vehicle and activity life chosen. Note that you may not replace a vehicle from one weight category with a vehicle from another weight category.

**Step 4. Determine the Model Year of the Vehicle and Engine Being Purchased**

You must know the model year of your current vehicle and engine. If the original engine was replaced with a later model year engine, use the model year of the engine and not the year of the vehicle itself.

On-road heavy duty engines are certified by the U.S. Environmental Protection Agency (EPA) to meet federal nitrogen oxides (NO<sub>x</sub>) emission standards established by year. The standards are usually expressed in grams per brake horsepower hour (g/bhp-hr) of NO<sub>x</sub>. Normally, an engine will be certified to meet the emission standard applicable to the year in which the engine was manufactured. However, there are exceptions to this approach as listed below.

- a. Beginning in 2007, manufacturers of on-road heavy duty diesel engines were required to begin a phase-in period for compliance with a new federal NO<sub>x</sub> emission standard of 0.2 g/bhp-hr. From 2007 through 2009, manufacturers must have averaged 1.2 g/bhp-hr across the range of engines sold. The standard for engines manufactured in 2010 is 0.2 g/bhp-hr, although not all 2010 engines will meet this standard.
- b. The maximum rebate grant tables list different NO<sub>x</sub> emissions options for 2007 and beyond on-road engine certifications. Use the rebate grant amount corresponding to the range of emission rates applicable to the certified emissions rate of that engine.
- c. If the replacement on-road vehicle/engine is powered by electricity, use the lowest emission rate range shown on the table.

#### **Step 5. Determine the Maximum Rebate Grant Amount**

Once you have selected the table from either Appendix C or D applicable to the weight category of your vehicle and the activity life, find the column that applies to the year of the vehicle and/or engine being replaced. Go down that column to the line corresponding to the year and emissions rate of the vehicle and/or engine being purchased.

Note the maximum rebate grant amount listed for that combination of old and replacement vehicle and/or engine.

## **2. Non-Road Equipment (Appendix E and F)**

### **Step 1. Select either a 5-year or 7-year activity life.**

The grant recipient must agree to monitor the use of grant-funded vehicle or equipment for the designated activity life. For this program, an applicant must choose in the application form an activity life of either 5 or 7 years. The maximum rebate grant amount table corresponding to the activity life chosen must be used to determine the grant amount. The Activity Life is the period of time (in years) used to calculate the amount of NO<sub>x</sub> emissions reductions that will be achieved through the use of the grant-funded vehicle or equipment.

**Step 2. Find the Rebate Grant Table for the Equipment Type and Activity Life**

The tables in Appendix D correspond to an Activity Life of 5 years, while Appendix E includes the tables corresponding to a 7-year Activity Life. A different table is provided for each type of equipment eligible for funding under this program. Find the table corresponding to the selected Activity Life and your equipment type. Note that you may not replace one type of equipment with another type. The types of equipment eligible for a rebate grant are listed below

SCC Code	Description
2270002036	excavators
2270002045	cranes
2270002048	graders
2270002051	off-highway trucks
2270002054	crushing processing equipment
2270002057	rough terrain forklifts
2270002060	rubber tire loaders
2270002066	tractors / loaders / backhoes
2270002069	crawler tractors
2270002072	skid steer loaders
2270002075	off-highway tractors
2270003020	forklifts
2270003070	terminal tractors
2270005015	agricultural tractors
2270005020	combines

**Step 3. Determine the Horsepower of the Equipment**

You must know the horsepower of your current equipment engine and the horsepower of the replacement equipment engine. The horsepower should be the manufacturer's rated horsepower of that engine in that type of equipment.

**Step 4. Determine the Model Year of the Equipment and Engine**

You must know the model year of your current engine. If the original engine was replaced with a later model year engine, use the model year of the engine and not the year of the equipment itself.

**Step 5. Determine the Certified Emissions Rate and Model Year of the Equipment and Engine Being Purchased**

Non-road heavy duty diesel engines are certified by the U.S. Environmental Protection Agency (EPA) to meet federal nitrogen oxides (NO<sub>x</sub>) emission standards established by year. The standards are usually expressed in grams per brake horsepower hour (g/bhp-hr). Normally, an engine will be certified to the emission standard applicable to the year

in which the engine was manufactured. However, there are exceptions to this approach. Some manufacturers (and in particular, Caterpillar, Inc.) may have non-road engines manufactured specifically for repowers that only meet a Tier 1 emission standard, even though the Tier 2 or 3 standard would normally apply for engines manufactured in that year. These engines may be used only to repower older equipment and not for installation in a new piece of equipment. Be sure to check with the engine supplier for all repower projects and particularly repower projects involving engines manufactured by Caterpillar, Inc. If the engine identified for purchase is certified to only a Tier 1 standard, even though the new engine emission standard for the year of manufacture is Tier 2 or above, use the Tier 1 emission level to determine the rebate grant amount. See Appendix B for a list of emission standards and tier levels by year.

Beginning in 2011, manufacturers of non-road heavy duty diesel engines were required to begin a phase-in period for compliance with a new federal NO<sub>x</sub> emissions standard. The manufacturer's engine production must meet these standards during each year of the phase-in. Therefore, it is not guaranteed that a Tier 4 (Phase-In) equipment and/or engine meet the lower standard. If an applicant proposes to purchase a Tier 4 (Phase-In) equipment and/or engine, the applicant must certify in the application the emission level that the new equipment and/or engine will meet. Copies of the form certifying the engine family to the lower emission standard must be provided.

#### **Step 6. Determine the Maximum Rebate Grant Amount**

Once you have selected the table for your type of equipment, find the column applicable to the horsepower range and model year of the current engine. Find the line corresponding to the model year and certified emissions rate of the replacement engine. Find the maximum rebate grant amount listed for that combination of old and replacement equipment and/or engine.

Note that you may replace a piece of equipment and/or engine from one horsepower category with one from a lower horsepower category, but you may not replace a piece of equipment and/or engine from one horsepower category with one from a higher horsepower category. Use the rebate grant amount for the higher horsepower category in your rebate grant application.