

TRANSIT AND SHUTTLE BUS GRANT PROGRAM VEHICLE INFORMATION CHECKLIST

OVERVIEW

Note: All terms that are both bolded and italicized are defined in Appendix D-2 of the Environmental Mitigation Trust Agreement for State Beneficiaries.¹

Applicants should use this checklist to verify whether they have compiled and submitted all requested information for each Transit or Shuttle Bus they are requesting funds to replace or **Repower**. Consult the Transit and Shuttle Bus Grant Program Application Manual for more information. Questions regarding these requirements should be sent to TDEC.OEP@tn.gov.

VEHICLES TO BE REPLACED

- 1.** Applicant has supplied all information requested for the **EXISTING VEHICLE**, including:
 - Vehicle Type (Shuttle or Transit)
 - For purposes of this solicitation, "Transit Buses" shall include all vehicles that provide public transportation, which shall mean regular and continuing shared-ride surface transportation services that are open to the general public. "Shuttle Buses" shall include vehicles that provide transportation services for one or more specific entities, intra-terminal or intra-facility transportation services, or mobility-on-demand services.
 - Vehicle Make and Model
 - Vehicle Model Year
 - Vehicle Identification Number (VIN)
 - Gross Vehicle Weight Rating (GVWR)**
 - Vehicles eligible for replacement are limited to ***Class 4-8 Transit and Shuttle Buses*** only, which shall mean vehicles with a GVWR greater than 14,001 lbs. used for transporting people.
 - "***Gross Vehicle Weight Rating (GVWR)***" shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR includes total vehicle weight plus fluids, passengers, and cargo.
 - Engine Make and Model
 - Engine Horsepower
 - Engine Model Year
 - Vehicles eligible for replacement include 2009 engine model year or older ***Transit and Shuttle Buses***.
 - Engine Serial Number
 - EPA Engine Family Name
 - The EPA engine family name is a 12 character code that identifies all parts of that particular engine. The first character of this code identifies the engine model year. For more information on EPA engine family names, please refer to this link: <https://www.epa.gov/vehicle-and-engine-certification/information-about-family-naming-conventions-vehicles-and-engines>. For more information on how to locate the EPA engine family name on the engine's emission control label, please refer to Appendix B of the Transit and Shuttle Bus Grant Program Application Manual.
 - Annual Average Miles
 - Passenger Capacity
 - Fuel Type
- 2.** Applicant has supplied all information requested for the **NEW VEHICLE**, including:

¹ Environmental Mitigation Trust Agreement for State Beneficiaries, https://www.tn.gov/content/dam/tn/environment/energy/documents/vw-resources/Modified_Environmental_Mitigation_Trust_Agreement_for_State_Beneficiaries_Effective_April_12_2019.pdf.

- Vehicle Type (Shuttle or Transit)
- Vehicle Make and Model
- Vehicle Model Year
- GVWR
- Engine Make and Model
- Engine Horsepower
- New Vehicle Purchase Price
 - The “New Vehicle Purchase Price” of eligible **Transit and Shuttle Buses** may include required costs to acquire the vehicle(s), such as taxes and delivery fees. Costs not integral to **Transit and Shuttle Bus** function (e.g., idle reduction technologies, etc.) cannot be considered eligible for reimbursement and so should not be included in the “New Vehicle Purchase Price” total.
- Expected Annual Average Miles
- Passenger Capacity
- Fuel Type
 - Replacement of eligible **Shuttle and Transit Buses** with a new diesel vehicle shall not be considered eligible.
 - Bi-fuel vehicles will be considered on a case-by-case basis for **Government** Owned Shuttle Buses only. “Bi-fuel” shall mean an engine or motor vehicle that is capable of operating on gasoline or diesel fuel in addition to another type of fuel, such as natural gas or propane. Both fuels are stored on board and the driver can switch between the fuels. The vehicle is equipped with fuel tanks, fuel injection systems, and fuel lines for both fuels.
- 3.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** VIN.
- 4.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** EPA Engine Family Name.
 - If an applicant cannot provide a legible photo of the EPA Engine Family Name due to emissions control label wear or destruction, applicants can instead provide the engine manufacturer’s written confirmation of the **EXISTING VEHICLE** EPA Engine Family Name and engine model year.
- 5.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** Engine Serial Number.
- 6.** Applicant has supplied expected lifetime NOx emissions reduction estimate for the vehicle replacement, calculated using the Argonne National Laboratory Heavy-Duty Vehicle Emissions Calculator (accessible at <https://afleet-web.es.anl.gov/hdv-emissions-calculator/>).

When utilizing the Heavy-Duty Vehicle Emissions Calculator, applicants should take the following steps:

- For “Project Type,” select “Environmental Mitigation with Scrappage.”
- For “State,” select “Tennessee.”
- To calculate emissions for a **Transit Bus** replacement, select “Transit Bus” in the “Vehicle Type” dropdown. To calculate emissions for a **Shuttle Bus** replacement, select “School Bus” in the “Vehicle Type” dropdown.
- For “Number of Vehicles,” insert “1.”
- For “Model Year of Scrapped Vehicle,” insert the **engine model year** of the vehicle to be replaced.
 - Note: The engine model year may differ from the vehicle model year. The first character of the engine’s EPA engine family name identifies the engine model year. For more information on EPA engine family names, please refer to this link: <https://www.epa.gov/vehicle-and-engine-certification/information-about-family-naming-conventions-vehicles-and-engines>. For more information on how to locate the EPA engine family name on the engine’s emission control label, please refer to Appendix B - Locating the EPA Engine Family Name.
- For “Estimate Years for Early Retirement of Scrapped Vehicle,” assume that the useful life of a Shuttle Bus is 12 years and the useful life of a Transit Bus is 15 years, calculated based on vehicle model year (i.e., If a vehicle model year 2007 Transit Bus is to be **Scrapped** and retired in 2020, the Transit Bus will be retired 2 years early).
 - If an applicant believes that the useful life remaining for the vehicle to be replaced is greater than the prescribed useful life of 12 years for Shuttle Buses and 15 years for Transit Buses, the applicant can enter an assumed useful life remaining for the vehicle to

be replaced. Applicants pursuing this option will be required to provide supporting documentation to justify such assumptions, including vehicle operations and maintenance records as well as a signed letter from a mechanic to corroborate that the applicant's reported useful life remaining is realistic given the vehicle's current operational and maintenance status.

- For "Lifetime of New Vehicle," insert "12" if the proposed replacement is a Shuttle Bus and "15" if the proposed replacement is a Transit Bus.
 - As noted above, if an applicant believes that the lifetime of the new vehicle will be greater than the prescribed useful life of 12 years for Shuttle Buses and 15 years for Transit Buses, the applicant can enter an assumed new vehicle lifetime. Applicants pursuing this option will be required to provide supporting documentation to justify such assumptions, including vehicle operations and maintenance records to demonstrate that comparable vehicles are maintained within the fleet for the proposed new lifetime, as estimated by the applicant.
- For "Annual Miles of Scrapped Vehicle," insert the average annual mileage of the vehicle to be replaced.
- For "Annual Miles of New Vehicle," insert an appropriate estimate for the annual miles of the new vehicle, based on previous annual mileage of the vehicle to be replaced.
- **Do not** select the option for the "Diesel In-Use Multiplier."
- Only select and fill in the option for "Custom Fuel Economy" if proposing to replace a diesel **Transit or Shuttle Bus** with a **Hybrid**. After selecting the "Custom Fuel Economy" checkbox, insert the average fuel economy for the **Hybrid Transit or Shuttle Bus** as provided by the OEM within the "New Diesel (MPDGE)" field.
- Only select the option for "Low NOx Engines" if proposing to purchase a new **Transit or Shuttle Bus** with this type of engine.
- For "Funding Options," insert only the amount of grant funding requested under the appropriate fuel type for the **Transit or Shuttle Bus** replacement, based on the applicant entity type and geographic location.
- For "Natural Gas Feedstock Source," select "North American NG," unless the proposed project is to utilize natural gas from landfill gas, anaerobic digester (AD) gas of animal waste, AD gas of wastewater sludge, or AD gas of municipal solid waste.
- If proposing to purchase an **All-Electric Transit or Shuttle Bus**, for "Source of Electricity," select "Custom Mix." Within the Custom Mix section, insert the following:

Heavy Duty Vehicle Emissions Calculator Power Source Inputs	Percent Share (in 2018)*
Residual Oil	0.2%
Natural Gas	15.3%
Coal	25.8%
Nuclear	45.9%
Biomass	0.1%
Renewable (e.g., wind, solar)	12.7%
Total must add up to 100%	

*Data collected by the U.S. Energy Information Administration, net generation for electric power in Tennessee, 2018.

- Select "Calculate Results," and then "Export Results." Save the file and provide it as an attachment to the application where directed.
- Repeat this process for each proposed **Transit or Shuttle Bus** replacement.

7. (Only required if the applicant has chosen to utilize a custom vehicle useful life when calculating NOx emissions reductions): Applicant has supplied a letter from a mechanic to corroborate that the applicant's reported useful life remaining is realistic, given the existing vehicle's current operational and maintenance status as

well as a copy of vehicle operations and maintenance records to demonstrate that comparable vehicles are maintained within the fleet for the proposed new lifetime, as estimated by the applicant.

VEHICLES TO BE **REPOWERED**

- 1.** Applicant has supplied all information requested for the **EXISTING VEHICLE**, including:
 - Vehicle Type (Shuttle or Transit)
 - Vehicle Make and Model
 - Vehicle Model Year
 - Vehicle Identification Number (VIN)
 - Gross Vehicle Weight Rating (GVWR)**
 - Vehicles eligible for **Repower** are limited to **Class 4-8 Transit and Shuttle Buses only**, which shall mean vehicles with a GVWR greater than 14,001 lbs. used for transporting people.
 - **"Gross Vehicle Weight Rating (GVWR)"** shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR includes total vehicle weight plus fluids, passengers, and cargo.
 - Engine Make and Model
 - Engine Horsepower
 - Engine Model Year
 - Vehicles eligible for **Repower** include 2009 engine model year or older **Transit and Shuttle Buses**.
 - Engine Serial Number
 - EPA Engine Family Name
 - The EPA engine family name is a 12 character code that identifies all parts of that particular engine. The first character of this code identifies the engine model year. For more information on EPA engine family names, please refer to this link: <https://www.epa.gov/vehicle-and-engine-certification/information-about-family-naming-conventions-vehicles-and-engines>. For more information on how to locate the EPA engine family name on the engine's emission control label, please refer to this link: <https://efc.umd.edu/assets/nameplatephotos.pdf>.
 - Annual Average Miles
 - Passenger Capacity
 - Fuel Type
- 2.** Applicant has supplied all information requested for the **REPOWERED VEHICLE**, including:
 - Vehicle Type (Shuttle or Transit)
 - Engine Make and Model
 - Engine Horsepower
 - Engine Model Year
 - Eligible **Repower** Cost(s) (Note: Non-engine equipment costs associated with the **Repower** of a vehicle to a certain **All-Electric** technology (e.g., the cost of battery packs) shall be considered eligible for reimbursement.)
 - Expected Annual Average Miles
 - Fuel Type
- 3.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** VIN.
- 4.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** EPA Engine Family Name.
 - If an applicant cannot provide a legible photo of the EPA Engine Family Name due to emissions control label wear or destruction, applicants can instead provide the engine manufacturer's written confirmation of the **EXISTING VEHICLE** EPA Engine Family Name and engine model year.
- 5.** Applicant has uploaded clear, legible photo of **EXISTING VEHICLE** Engine Serial Number.
- 6.** Applicant has supplied expected lifetime NOx emissions reduction estimate for the vehicle **Repower**, calculated using the Argonne National Laboratory Heavy-Duty Vehicle Emissions Calculator (accessible at <https://afleet-web.es.anl.gov/hdv-emissions-calculator/>).

When utilizing the Heavy-Duty Vehicle Emissions Calculator, applicants should take the following steps:

- For "Project Type," select "Environmental Mitigation with Repower."
- For "State," select "Tennessee."

- To calculate emissions for a **Transit Bus Repower**, select “Transit Bus” in the “Vehicle Type” dropdown. To calculate emissions for a **Shuttle Bus Repower**, select “School Bus” in the “Vehicle Type” dropdown.
- For “Number of Vehicles,” insert “1.”
- For “Model Year of Repowered Vehicle,” insert the **engine model year** of the vehicle to be **Repowered**.
 - Note: The engine model year may differ from the vehicle model year. The first character of the engine’s EPA engine family name identifies the engine model year. For more information on EPA engine family names, please refer to this link: <https://www.epa.gov/vehicle-and-engine-certification/information-about-family-naming-conventions-vehicles-and-engines>. For more information on how to locate the EPA engine family name on the engine’s emission control label, please refer to Appendix B - Locating the EPA Engine Family Name.
- For “Lifetime of New Vehicle,” insert “12” if the proposed **Repowered** vehicle will be a Shuttle Bus and “15” if the proposed **Repowered** vehicle will be a Transit Bus.
 - If an applicant believes that the lifetime of the new vehicle will be greater than the prescribed useful life of 12 years for Shuttle Buses and 15 years for Transit Buses, the applicant can enter an assumed new vehicle lifetime. Applicants pursuing this option will be required to provide supporting documentation to justify such assumptions, including vehicle operations and maintenance records to demonstrate that comparable vehicles are maintained within the fleet for the proposed new lifetime, as estimated by the applicant.
- For “Annual Miles of New Vehicle,” insert an appropriate estimate for the annual miles of the **Repowered** vehicle, based on that vehicle’s previous annual mileage.
- **Do not** select the option for the “Diesel In-Use Multiplier.”
- For “Funding Options,” insert only the amount of grant funding requested under the appropriate fuel type for the **Transit or Shuttle Bus Repower**, based on the applicant entity type and geographic location.
- For “Source of Electricity,” select “Custom Mix.” Within the Custom Mix section, insert the following:

Heavy Duty Vehicle Emissions Calculator Power Source Inputs	Percent Share (in 2018)*
Residual Oil	0.2%
Natural Gas	15.3%
Coal	25.8%
Nuclear	45.9%
Biomass	0.1%
Renewable (e.g., wind, solar)	12.7%
Total must add up to 100%	

*Data collected by the U.S. Energy Information Administration, net generation for electric power in Tennessee, 2018.

- Select “Calculate Results,” and then “Export Results.” Save the file and provide it as an attachment to the application where directed.
- Repeat this process for each proposed **Transit or Shuttle Bus Repower**.

7. (Only required if the applicant has chosen to utilize a custom vehicle useful life when calculating NOx emissions reductions): Applicant has supplied a letter from a mechanic to corroborate that the applicant’s reported useful life remaining is realistic, given the existing vehicle’s current operational and maintenance status as well as a copy of vehicle operations and maintenance records to demonstrate that comparable vehicles are maintained within the fleet for the proposed new lifetime, as estimated by the applicant.