

Question & Answer  
Railroad Emissions Reduction for Bibb County

**October 14, 2016, Request for Applications (RFA) Q&A:**

**Question:** If there are several possible conversion options, would it be acceptable to submit the application with “TBD” serving as the “old” locomotive identification?

**Answer:** Yes, “TBD” may be used - provided a sample list of the potential “old” locomotives operating in Bibb County meeting the eligibility requirements in the RFA is listed in the narrative. However, applicants must be extremely careful when entering the NO<sub>x</sub> and PM<sub>2.5</sub> emission factors from the “old” locomotive and selecting “TIER 0” or “nonregulated in order to assure that the emission benefits are not overstated. The process is competitive, and project(s) will be selected based on cost effectiveness for reducing NO<sub>x</sub> as well as PM<sub>2.5</sub>. Typically, converting a nonregulated locomotive will offer greater emission reductions than converting a TIER 0 locomotive. The key is assuring the “actual” emission benefit and cost effectiveness will be equivalent to or better than the original proposal.

**Question:** Is there a problem if I receive an error message in some of the cells on the “Application Cover Page” when filling out the excel application form? If so, how do I fix it?

**Answer:** Yes, a persistent error message is a problem. If all the cells are properly filled in according to the instructions, the error message should no longer appear. The excel application form uses interconnected formulas. If there is an error message, then critical information still needs to be entered, and/or information may not have been properly entered according to the instructions. The “Project,” “Schedule & Budget,” and “BSFC Data” are excel sheets/pages within the excel workbook (excel application form) that are critical for the calculations to work properly. If a persistent error message continues to appear after taking the steps described above, please email [Richard.mcdonald@dnr.ga.gov](mailto:Richard.mcdonald@dnr.ga.gov).

**Question:** Are units critical when entering the brake specific fuel consumption (BSFC) data into the excel application form (“BSFC Data” page)? If so, what are the units?

**Answer:** Yes, the BSFC numbers must be entered using the correct units or the emission calculations and cost effectiveness will be incorrect. The data entered for BSFC must be entered in units of bhp-hr/gal (brake horsepower hour per gallon).

**Question:** What emission factors are used by the excel application form when calculating the emissions from the “old locomotive,” and what emission factors are used when projecting emissions from the “new” locomotive?

**Answer:** The “old locomotive” emission factors are determined by the applicant and entered into the excel application form in units of g/bhp-hr (grams per brake horse power hour). There is a check to make sure that the number entered does not violate the TIER 0 standard if applicable. If the “old locomotive” is non-regulated, the excel application form will do a simple check and flag only if emission levels appear unusually high. The “new locomotive” emission factors are automatically entered by the spread sheet application form consistent with the applicant’s selection of the TIER level. The TIER level for the locomotive must be consistent with the “switcher” duty, because a key part of the project goal is to reduce emissions from rail yards performing switcher duty.

**August 31, 2016, Conference Call Q&A:**

**Question:** What is meant by the term “traditional?” Does this term or any other verbiage constrain the type of switcher eligible for funding based on horsepower specifications?

**Answer:** EPD identified the Fire Station #8 fine particulate matter (PM<sub>2.5</sub>) monitor in Atlanta and the Macon-Allied PM<sub>2.5</sub> monitor located in Bibb County as two monitors with a history of exhibiting higher PM<sub>2.5</sub> concentrations compared to other monitors in the state. These two monitors are located near rail yards operating locomotives performing switcher duty.

EPD’s active effort to reduce emissions from locomotives performing switcher duty started around 2008. Class I railroads were initially identified as the primary concern. Genset locomotives were an emerging technology in 2008, and regulators at that time believed the genset technology would become an industry mainstay. However, genset locomotives were later found to be inadequate for the Class I railroads because of work demands and respective reliability issues. Genset locomotives may be better suited for lighter-duty applications at this point. With design improvements, the genset locomotive may eventually meet the reliability needs for Class I switching.

The term “traditional” appears to have been initially introduced as a way of contrasting an old single diesel engine locomotive with a new multiple diesel engine locomotive genset design. Hence, the term “traditional” continues to mean the old single diesel engine locomotive (Unregulated or TIER 0). CMAQ funding does not require railroad conversion to gensets. The funding does require that the unregulated or TIER 0 locomotive performing switcher duty be converted to a clean locomotive meeting a minimum TIER 2 switcher duty standard, and larger line haul locomotives must also meet the TIER 3 line haul standards.

The current selection criteria for Bibb County funding focus on achieving the most cost effective emission reductions. There is no explicit horsepower constraint related to this funding. EPD’s intent is to reduce emissions from locomotive switching activity. The United States Environmental Protection Agency (EPA) identifies switchers as having horsepower less than 2,300. However, EPA also requires line haul locomotives above 2,300 horsepower to comply with both line haul standards and switcher duty standards. EPA understands that the larger locomotives (example: 3,000 horsepower) can operate as either a line haul or switcher. EPD’s intent has always been to improve air quality measured by ambient monitors located near rail yards by reducing emissions from locomotive switching activities. In conclusion, a locomotive that is legally providing switch duty service is considered a switcher for the purposes of this funding.