



U.S. Department of Transportation
Federal Transit Administration



Transit Investments for Greenhouse Gas and Energy Reduction Program: Second Assessment Report Addendum

Background

In 2009, the U.S. Department of Transportation's Federal Transit Administration (FTA) implemented a new program to promote energy savings and sustainable technologies to the transit industry. The Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) Program made funds available for capital investments over a three-year period from 2009 through 2011 that would reduce greenhouse gas (GHG) emissions or lower the energy use of public transportation systems.

Over the next few years, data will be collected, compiled, and analyzed on each project to determine the overall impacts and assess how each project has contributed toward meeting overall program goals. To aid in the analysis, FTA entered into an interagency agreement with the National Renewable Energy Laboratory (NREL) to provide a third-party assessment. NREL is working with the TIGGER project partners to gather the data and information needed for the assessment.

Objectives

This report serves as an addendum to the second assessment for the TIGGER Program and describes the impacts of the completed projects toward meeting overall program goals using data collected through December 2014.

Findings and Conclusions

Annual cost savings for reduced fuel and electricity use by the reporting projects totaled nearly \$3.4 million, and overall cost savings for agencies providing data was \$1.04 per TIGGER dollar awarded.

Under the TIGGER program, nearly \$225 million in total grants have been awarded to 88 competitively-selected projects implementing a wide variety of technologies including building efficiency improvements, solar installations, wind technology, wayside energy storage for rail, and purchase of technologically innovative energy efficient buses. The awarded projects are geographically diverse, covering 35 states and 68 different transit agencies in both urban and rural settings.

To date, the completed projects represent a combined annual energy savings of 109,781 million British thermal units (MBtu), or 24.6 million kilowatt-hours (kWh), and a reduction in GHG emissions (carbon dioxide equivalent, CO₂^e) of 31,028 tons. The data provided represent 42% of the total projects; this report summarizes the results through December 2014. Based on reported annual savings attributed to the technologies used, the program has resulted in the following:

Bus efficiency projects have reported savings totaling more than 16,921 MBtu and 1,525 fewer tons CO₂^e emissions.

- Rail projects completed to date have resulted in an energy reduction of 16,887 MBtu.
- Facility efficiency projects have shown the most promise in reducing energy use, resulting in a combined reduction in annual energy use of 73,923 MBtu and 29,270 fewer tons CO₂^e emissions.
- Solar projects reported an annual energy savings of 17,230 MBtu.
- Wind projects reported an annual energy reduction of 507 MBtu.
- Geothermal projects reported a 97-ton decrease in CO₂^e emissions.

Benefits

The annual cost savings for reduced fuel and electricity use by the reporting projects totals nearly \$3.4 million using the average cost of fuel and electricity in 2011 provided by the Energy Information Agency. The calculations for the per-TIGGER-dollar savings use the expected lifetime of the technology, the annual cost savings and the TIGGER award amount. The overall cost savings for the agencies that have provided data is \$1.04 per TIGGER dollar awarded. Some of these projects provided a partial data set; however, the total TIGGER award to the agency was used to calculate this amount. Once complete data sets are submitted, this number should increase.

NREL quantified GHG emission reductions (CO₂^e) using the Social Cost of Carbon (SCC) estimates published by the Environmental Protection Agency. These costs were used in this report to quantify the social benefits, or avoided costs, of GHG emissions reductions achieved by the TIGGER projects.

Project Information

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