Transit Investments for Greenhouse Gas and Energy Reduction

Assessment & Validation Program
June 28, 2011

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History

• FY09 TIGGER Program Initiated within the American Recovery & Reinvestment Act (ARRA) of 2009.

• FY10 TIGGER Program continued through the Transportation, Housing and Urban Development, and Related Agencies Appropriations Act 2010 (Pub. L. 111-68).

• FY11 TIGGER Program continued through The Department of Defense and Full-Year Continuing Appropriations Act, 2011 (Pub. L. 112-10).
TIGGER Program Objectives

- Reduce GHG & Energy Consumption
- FTA Sustainability Program
- Focus Innovation & National Applicability
- Align & Leverage Existing DOT/FTA Strategic Initiatives
- Identify of Research Gaps
- Add to Existing Body of Knowledge
**TIGGER Program Facts**

- **Number of States Represented**: 31
- **Number of Agencies**: 58
- **Number of projects**: 70
  - Round 1: 43
  - Round 2: 27
Breakdown of technology types:

<table>
<thead>
<tr>
<th>Technology Type</th>
<th>Number of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Efficiency Improvements</td>
<td>16</td>
</tr>
<tr>
<td>Bus Efficiency Projects</td>
<td>31</td>
</tr>
<tr>
<td>Rail Technology Projects</td>
<td>7</td>
</tr>
<tr>
<td>Renewable Power</td>
<td>23</td>
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</tbody>
</table>
Special TIGGER Reporting Requirements

Recipients of All TIGGER funds must report on annual basis:

- Actual annual energy consumed within the project scope attributable to the investment for energy consumption reduction projects; and/or

- Actual greenhouse gas emissions within the project scope attributable to the investment for greenhouse gas reduction projects; and/or

- Actual annual reductions or increases in operating costs attributable to the investment for each TIGGER project.
Third Party Assessment

- Inter-agency Agreement with NREL
- History of technology validation
  - Heavy-Vehicle Technology
  - National Fuel Cell Bus Program
- Document program progress
- Demonstrate Government Transparency
- Follow up on Program Objectives
Assessment Goals

• Determine the success of the TIGGER Program and report the results to Congress
• Maximize the experience of grantees by documenting and sharing implementation lessons with the transit industry
• Explore which technologies have the most potential to reduce energy and GHGs
• Consider National Applicability and the possibility of expanding to more agencies
• Ensure maximum benefit from federal funding

Participation from each project sponsor is essential to make this a successful effort!
Data Collection for TIGGER Assessment and Validation Program

Leslie Eudy
Team members:
Rob Burgess
John Lewis

TIGGER Webinar
June 28, 2011
Overview

• FTA Reporting Requirements
• Summary of NREL Role
• Project Fact Sheets & Data Needs
• Annual Assessment Reports & Data Needs
• Case Studies
• NREL Contacts
FTA Reporting Requirements

Three required measures:

• Energy Reduction – amount of energy savings attributed to project

• Greenhouse Gas (GHG) Reduction – amount of GHG emission savings attributable to project

• Operating costs – total cost to operate project (positive or negative)
Summary of NREL Role

The National Renewable Energy Laboratory is a Department of Energy Laboratory focused on renewable energy and energy efficiency.

NREL will provide third-party assessment and validation of TIGGER Program

• Project Fact Sheets – High-level informative overview of each project
• Annual Assessment Reports – document status and progress of projects and analyze impacts to the program
• Case Studies – detailed assessment of a selection of projects
Project Fact Sheets

- High-level informative overview of project
  - Description of TIGGER program
  - Details on the project
  - Description of the technologies implemented
  - Expected GHG and/or energy savings
  - Description of transit agency

- Two-page consistent format

- Available as a download on the TIGGER website

- TIGGER Round 1 projects will be completed by the end of July

- TIGGER Round 2 projects will be completed by the end of October (provided grants are in place)
Data Needs for Fact Sheets:

• Name of contact person for each project
• Review draft project details for accuracy
  – Project description
  – Technology details
  – Expected GHG or energy savings
  – Transit agency description
• Provide corrections/additional info as needed
• Provide pictures (with photo release)
• Review of final Fact Sheet in lay-out form
  – Will need a quick turn-around on this review
Annual Assessment Reports

- Description of projects and technologies
- Assessment of GHG and energy savings
- Status of project accomplishments and progress
- Impacts of program and each project’s contribution to meeting goals
- National applicability of projects
- First report scheduled for November 2011
Data Needs for Annual Assessment Reports

- Energy reduction projects: power/fuel consumption data will be used to determine savings
- GHG reduction projects: power/fuel consumption data also shows reductions in emissions
- Operating costs: data include cost for fuel, electricity, and maintenance of new technology
- Must have before and after data for at least one year
Data Needs for Annual Assessment Reports

Specific data depends on the type of technology

• Bus projects (new purchases or technology retrofits)
  – Fueling records (to determine fuel economy)
  – Fuel cost
  – Maintenance cost for the new technology
  – Baseline bus data to determine fuel/energy savings

• Building efficiency projects
  – Power consumption – either by metering or utility bills
  – Maintenance costs for new technology

• Renewable power projects (solar, wind, fuel cell)
  – Power production
  – Power consumption – either by metering or utility bills
  – Maintenance costs for new technology
Case Studies

• Detailed assessment of a selection of projects or specific technology
  – Case studies will include various technology and project types

• NREL has provided FTA a list of recommended projects for case studies

• Once FTA has agreed to the selection, NREL will work with the selected project teams to discuss additional data needs

• A separate project report will be produced that includes additional information and data analysis
NREL Contacts

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TIGGER Questions?

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