

FTA

FEDERAL TRANSIT ADMINISTRATION

Research Program Status

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Federal Transit Administration

Research Updates

- National Fuel Cell Bus
- Domestic Streetcars
- Proposed Demonstration and Deployment Activities
- Strategic Planning

National Fuel Cell Bus Program

- FTA continues in its role in helping to accelerate the adoption of electric drive technologies--battery electric, hybrid electric, and hydrogen fuel cell buses.
- The NFCBP is moving fuel cell buses closer to market readiness through technical advances such as smaller better performing fuel cells, batteries and control technologies, and by helping to build a domestic industry for fuel cell buses and components.
- FTA recently awarded \$13.6 million for eight projects in the final round of the National Fuel Cell Bus Program.

National Fuel Cell Bus Program

Outcomes

- The first Buy-America compliant fuel cell bus, the American Fuel Cell Bus, currently operating in SunLine Transit in Thousand Palms, CA, was created under a NFCBP project. Similar fuel cell buses will also be delivered to Greater Cleveland Regional Transit Authority in Cleveland, OH, Tompkins Consolidated Transit Authority in Ithaca, NY, Connecticut Transit in Hartford, CT, and MTA in Chicago, IL.
- Over the period of the program, fuel cell life-times (in transit operations) have more than doubled, while costs have declined by 50 percent.
- Fuel cell power systems now last over 12,000 hours and counting, a threefold improvement over similar systems in 2006.
- Fuel cell powered buses are two times more fuel efficient than a conventional diesel.

National Fuel Cell Bus Program

Moving Forward

- FY 2012 was the last year of funding for the NFCBP. Current project efforts will be completed under existing funds.
- Several obstacles remain to full commercialization of fuel cell buses that can hinder further deployment including costs, access to hydrogen fueling infrastructure, and conventional bus procurement practices that can push burdensome risks to manufacturers of new technologies.
- Costs are expected to decrease with larger manufacturing volumes and access to hydrogen fueling can also improve with larger fleet deployments.
- Procurement practices can be refined, to ensure risks are better balanced between manufacturers of advanced technology buses and transit agencies investing in these buses using Federal funds.
- Fuel cell buses will be eligible under the new Low or No Emissions Vehicle Deployment Program.

Domestic Streetcar Update

- FTA has continued to support the development of a domestic streetcar in Portland for the City of Portland through Tri-Met (Oregon Ironworks/United Streetcar).
- United Streetcar has delivered three of five streetcars to Portland. Tucson has ordered eight modern streetcars and Washington, DC has ordered three streetcars.
- Domestic demand over the next 10-20 years is likely to be in the area of 120 to 180 streetcars for the 26 planned systems.
- FTA has recently entered into a interagency agreement with US Department of Commerce's National Institute of Standards and Technologies make it easier for manufacturers and transit agencies to identify domestically made products, such as rolling stock and other steel and iron components that comply with FTA's "Buy America" rules.

FTA Demonstration Activities

- FTA considering a dedicated research demonstration program for public transportation projects in the areas of:
 - Operational safety
 - Infrastructure resiliency
 - All-hazards emergency response and recovery
- Focused on the demonstration of innovative technologies, methods, practices and techniques
- Projects will develop and showcase critical projects primarily in areas of safety and state of good repair.
- Broad focus would allow a diverse spectrum of projects.

FTA Technology Deployment Activities

- Program to support deployment of low or No Emissions buses and related facilities as authorized by MAP-21.
- Will deploy the next generation of U.S.-made low and no emission transit buses that have been proven in testing and demonstrations but are not yet widely deployed in transit fleets.
- Program will focus primarily on deployment of fuel cell and battery electric buses.

Other Major Activities

- Recent Demonstration activities
 - NOFA on Bus Body Thermal Performance Improvements
 - NOFA on Evaluation and Demonstration of Electrified Accessories
- Standards
 - Focus primarily on safety area to support MAP-21
- Transit Cooperative Research Program

Future Research Directions

- FTA plans to align its research program towards quantitative outcomes that yield benefits for the transit industry in the near-term.
- Program will be industry responsive and provide relevance and value to transit operations.
- Efforts will move research ideas from proof of concept to demonstration to deployment.



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