NATURAL GAS

TRANSIT USERS GROUP

FreedomCAR & Fuel Partnership

Assisting Transit Agencies with Natural Gas Bus Technologies

PROJECT IMPACT

Transit buses are a key niche market for natural gas vehicles. Increasingly, transit agencies have been choosing natural gas buses as a way to cut air pollution and boost energy security. The Natural Gas Transit Users Group provides information and assistance to transit agencies that are operating or considering acquisition of natural gas transit buses. It is anticipated that this will lead to increased use of natural gas buses, resulting in reduced U.S. petroleum consumption.

PROJECT GOALS

Natural gas is a domestically available resource. The U.S. Department of Energy (DOE) supports natural gas vehicle and infrastructure research, development, and deployment through its FreedomCAR and Vehicle Technologies Program to help the United States reduce its dependence on imported petroleum and to pave the way to a future transportation network based on hydrogen. Natural gas vehicles can also reduce emissions of regulated pollutants compared with vehicles powered by conventional fuels such as gasoline and diesel. The goal of the Natural Gas Transit Users Group (TUG) is to facilitate the deployment of natural gas vehicle and infrastructure technology in transit fleets.

Figure 1. Liquefied Natural Gas Bus Operated by Arizona's Valley Metro
NREL/PIX 12534

NATURAL GAS TRANSIT BUSES

Transit buses are a key niche market for natural gas vehicles (Figure 1). Transit buses typically operate in heavily populated areas where pollution is a problem and residents are supportive of clean vehicle solutions. Transit vehicles are ideally suited to natural gas use for many reasons:

- Centrally located, fueled, and maintained
- Serviced by a team of technicians who can be trained consistently
- High fuel use, creating favorable economies of scale
- Fixed routes with fixed schedules
- Federally subsidized capital costs
- High visibility and high impact.

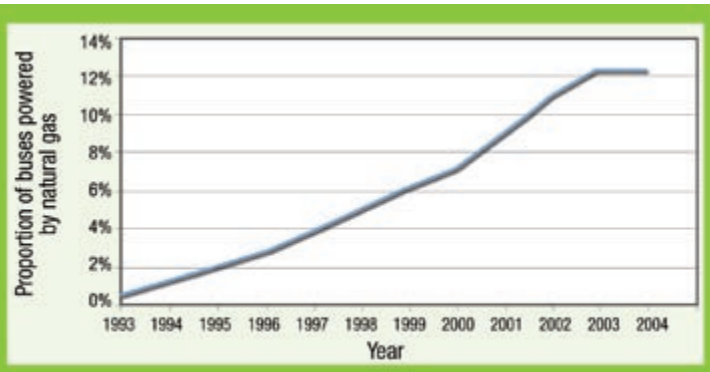

Figure 2. Proportion of U.S. Transit Buses Powered by Natural Gas
Source: American Public Transportation Association

According to the American Public Transit Association (APTA), approximately 12% of transit buses were powered by natural gas as of 2004 (Figure 2). This proportion is expected to grow as more transit agencies switch to natural gas in response to air quality and energy security concerns. Approximately 25% of bus orders in 2004 were for natural gas vehicles, according to APTA.

THE NATURAL GAS TRANSIT USERS GROUP

The TUG provides information and technical assistance to help transit agencies deploy and operate natural gas buses and infrastructure. Participation is intended for transit agency

maintenance and operations staff, government agencies, and technology experts who provide specialized natural gas vehicle and infrastructure technical assistance. The TUG is led by DOE's FreedomCAR and Vehicle Technologies Program, the National Renewable Energy Laboratory, and the Clean Vehicle Education Foundation.

The TUG typically meets once per year. The most recent meeting took place in November 2004 in Anaheim, California in conjunction with APTA's Bus Equipment & Maintenance/ Procurement & Materials Management Workshop. Presentations covered the following topics:

- New Flyer natural gas transit buses
- FAB Industries natural gas bus fuel systems
- Bus idling practices
- Compressed natural gas cylinder inspection requirements
- Pressure relief device training tool
- Natural gas bus incidents
- Fuel supply in time of disaster
- Cummins Westport natural gas bus engines
- John Deere natural gas bus engines.

By design, vendors and suppliers to the transit industry are admitted by special invitation only, during times when their technology or service is addressed by the group. There are no fees to attend TUG meetings (members pay their own travel expenses), and meeting proceedings are sent to members free of charge.

Figure 3. Tiger Teams Have Assisted the Washington Metropolitan Area Transit Authority with Natural Gas Bus and Infrastructure Challenges

NREL/PIX 12293

SPECIALIZED SUPPORT

TUG members can enlist the help of DOE's Clean Cities Technical Assistance Teams (Tiger Teams) to solve specific problems (Figure 3). Handpicked by DOE and the National Renewable Energy Laboratory, this group of experts provides assistance related to the following problems:

- Vehicle operations: vehicle performance or drivability, safety, maintenance, driver acceptance, specialized training needs, and implementation of alternative fuel vehicles at specific sites.
- Infrastructure operations: fueling station design, interaction with alternative fuel providers and fire safety code officials, fueling station performance and maintenance requirements, and operator training.

Before asking for specialized help, requesting agencies typically must demonstrate that all appropriate efforts have been made at the local or regional level to solve the problems. DOE is especially interested in problems that suggest patterns of equipment failures or chronic service issues, because these may indicate industry-wide problems. For more information on Tiger Teams, visit *www.eere.energy.gov/cleancities/technical_assistance.html.* Agencies requesting Tiger Team assistance must complete the same process identified for Clean Cities coordinators on this website.

CONTACTS AND RELATED WEBSITES

To join the TUG, or for more information, contact Hank Seiff at the Clean Vehicle Education Foundation, *hseiff@cleanvehicle.org.* TUG members receive e-mail updates and newsletters as well as access to TUG meeting proceedings. Also see the Clean Vehicle Education Foundation website at *www.cleanvehicle.org.* The TUG is affiliated with DOE's Natural Gas Vehicle Technology Forum. For more information, visit *www.nrel.gov/vehiclesandfuels/ngvtf.*

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