

TUG Tidbits



Newsletter of the Natural Gas Transit Users Group

May, 2004

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What is *TUG Tidbits*?

The Department of Energy, the National Renewable Energy Laboratory (NREL) and the Clean Vehicle Education Foundation sponsor Transit Users Group (TUG) meetings to allow transit agencies to facilitate communication, share technical information, identify and solve problems, and stay up-to-date on new natural gas transit bus information. Starting with this edition, we will also publish periodic electronic newsletters to provide information to those on the TUG mailing list. We solicit your comments, "letters to the editor," suggested articles and other information you choose to provide.

TUG Meeting at Pierce Transit, June 7-8

A meeting of the Natural Gas Transit Users Group (TUG) will be hosted by Pierce Transit in Tacoma, WA, June 7-8, 2004. The 1½ day meeting starts at 1 p.m. on June 7 and ends at 5 p.m. on the 8th. Agenda items include invited presentations by the three major manufacturers of full-size natural gas transit buses, New Flyer, Orion and NABI. Other topics include bus idling, inspection of CNG cylinders, demonstration of a new PRD training tool, fueling station options and fuel supply in time of disaster. There will be a tour of Pierce's natural gas bus and support vehicles' maintenance and fueling facilities and plenty of time for open discussion. There is no cost to attend TUG meetings. For more information and registration, contact Hank Seiff at hseiff@cleanvehicle.org.

Natural Gas Buses May be Less Expensive than You Think

Cummins Westport, a major supplier of natural gas transit bus engines, reports that “natural gas narrows the price gap” between the capital cost of 40-foot natural gas and diesel buses. Based on a study by the DOE’s National Renewable Energy Laboratory, natural gas 40-foot buses cost 17% more than diesel in 2000. In 2003 there was only a 2.3% difference for 175 low floor CNG buses with CWI’s C Gas Plus engines quoted for Boston’s MBTA.

	<u>Diesel Bus</u>	<u>NG Bus</u>	<u>\$ Difference</u>	<u>% Difference</u>
2000 Average Price	\$271,700	\$317,400	\$45,700	17%
2003 Boston Price	\$304,752	\$311,626	\$6,874	2.3%

But different bids show different results, so you may get higher or lower bids for diesel and NG buses. *TUG Tidbits* wants to do its own survey of natural gas vs. diesel vehicle and fuel costs. Please provide us with any recent comparable diesel vs. natural gas bus price quotations or actual purchase prices. Let us have as much information as you are comfortable in making public.

Also let us know what you are paying for natural gas and diesel fuel, and tell us whether you have a long-term contract, whether the prices are with or without tax and any other information you think will be of value. We plan to use the information in future editions of *TUG Tidbits* or at future TUG meetings.

Half the Nation’s Population Lives in Counties with High Smog Levels

Right on the heels of EPA’s recent implementation of its new National Ambient Air Quality Standards, the American Lung Association has just released a report that concludes that more than half the nation’s population lives in counties with hazardous smog levels. The annual report concludes that about 159 million Americans -- or 55 percent of the country -- live in 441 counties threatened by ozone or particle matter. Southern California ranked worst in ozone pollution while the Houston area was fifth. State-by-state details from the report are available online at:

<http://lungaction.org/reports/stateoftheair2004.html>.

(This article is reprinted with permission from “NGVCommunications,” the newsletter of the Natural Gas Vehicle Coalition)

Study Points Way to Cleaner NGVs

Preliminary results from new research suggest that manufacturers may be able to cut natural gas engine emissions dramatically—to undetectable levels for some pollutants—using currently available aftertreatment technologies tailored to the performance and emissions characteristics of particular engines.

The research, sponsored by the South Coast Air Quality Management District and Southern California Gas, tested the potential emissions performance of a natural gas engine equipped with a catalyzed particulate filter along with the now-standard oxidation catalyst. Mridul Gautam, a professor in the Department of Mechanical and Aerospace Engineering at West Virginia University and co-director of the National Research Center for Alternative Fuels, Engines and Emissions, conducted the study with a team of researchers from WVU, Environment Canada, Lubrizol-ECS, and Booz Allen Hamilton.

Gautam outfitted a SunLine Transit bus powered by a 280-horsepower, 8.3-liter Cummins Westport C Gas Plus engine with an aftertreatment system customized for the engine. A key element was the positioning of the filter. On diesel engines, an oxidation catalyst sits upstream from the particulate filter so it can start oxidizing the hydrocarbons in the exhaust and bring them to the higher temperature required for the filter to function properly. Natural gas engines run much hotter than diesel engines, however, so Gautam placed the oxidation catalyst downstream from the filter.

The results analyzed so far are impressive: the aftertreatment system reduced total particulate matter emissions from 0.015 grams per mile with the oxidation catalyst alone to 0.0007 grams per mile. Ultrafine particles (nanoparticles)—which are getting increasing attention as a potentially serious health hazard—were reduced to background levels. Metals were undetectable, and methane emissions fell significantly.

Gautam presented the research at a Coordinating Research Council workshop in late March, but he notes that not all the data are in and the research has not yet been peer-reviewed. Still, he says, “I’ve always maintained that we can reduce nanoparticle emissions from natural gas engines, and this demonstrates that we can. It shows tremendous potential to reduce emissions overall.”

(This article is reprinted with permission from “CalNGV News,” the newsletter of the California Natural Gas Vehicle Coalition.)

Contest for Better Newsletter Title

Don't like the title of this new newsletter? Well, we think it's pretty "hokey" ourselves. Suggest a better title and, if we use it, we'll buy you dinner at the next TUG meeting you attend.

Natural Gas Vehicle Technology Forum Presentations Available

The Department of Energy's Natural Gas Vehicle Technology Forum (NGVTF), managed by the NREL Gaseous Fuels Team, brings together the many light-, medium-, and heavy-duty natural gas vehicle efforts underway today with a focus on the future. The forum addresses the near-term obstacles to widespread NGV use as well as the long-term solutions to reducing the nation's reliance on imported oil and bridging the gap to a clean energy future. At the NGVTF meeting in Sacramento, CA in April, there were a number of presentations of interest to transit bus users, including: Next Generation Natural Gas Vehicle Research; NG Truck and Bus Technology and Market Challenges; Small Scale LNG Production; CA and TX Emissions Reductions Activities; and NG Engine Market Analysis. These presentations, as well presentations from past NGVTF meetings and other natural gas vehicle information can be found on the web at <http://www.ott.doe.gov/ngvtf/events.html>.

Please send all questions, comments, suggestions for new newsletter names, requests for information, etc. to Hank Seiff at hseiff@cleanvehicle.org.

The photo of a CNG bus in the heading was provided by and used with permission of Pierce Transit