

# *TUG Tidbits*



*Newsletter of the Natural Gas Transit Users Group*

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June, 2005

- ◆ How Much are People Paying for NG Fuel (Part 3)?
  - ◆ NG Bus Engines to Meet/Beat New EPA 2007-2010 Emissions Rules
  - ◆ Sacramento RTD's CNG Bus Program
  - ◆ San Diego Adds NG Buses
  - ◆ Next TUG Meeting October 26-28
  - ◆ Government TUG Fact Sheet
  - ◆ Silicone "Plug" in PRD Vent Line?
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## **How Much are People Paying for NG Fuel (Part 3)?**

Fuel prices have moderated somewhat as "TUG Tidbits" goes to press. The spot price of petroleum dropped below \$50/barrel a few weeks ago and natural gas was at \$6.50/mmbtu (See <http://www.wtrg.com/daily/oilandgasspot.html> for up-to-date spot market prices).

DOE's Alternative Fuel Price Report keeps track of retail fuel prices (See [http://www.eere.energy.gov/afdc/resources/pricereport/pdfs/afpr\\_03\\_28\\_05.pdf](http://www.eere.energy.gov/afdc/resources/pricereport/pdfs/afpr_03_28_05.pdf) for the March edition). Following is their price per dge (diesel gallon equivalent\*)

<u>Date</u>	<u>Diesel</u>	<u>CNG</u>
6-04	\$1.71	\$1.56
11-04	\$2.13	\$1.74
3-05	\$2.24	\$1.74

\*corrected from gasoline gallon equivalent prices given by DOE

The DOE report also shows that natural gas is the least expensive vehicle fuel of those listed – substantially cheaper than gasoline, propane, E85, diesel or B20.

“TUG Tidbits” has conducted its own survey of transit agencies from the east to the west coast. The same 10 transit agencies reported their natural gas and diesel costs (per dge) in November 2004 and April 2005 as:

<u>Date</u>	<u>Diesel</u>	<u>NG</u>
11/04	\$1.76	\$1.41
4/05	\$1.92	\$1.42

Although transit agency prices for both fuels are lower than retail (because of bulk buying practices and tax exclusions), with today’s higher prices diesel is now running about fifty cents more per gallon (or gallon equivalent) than natural gas. In addition, looking back over the DOE’s quarterly pricing reports for the past several years reveals that the price of NG has been more stable (lower standard deviation) than both gasoline and diesel fuel over the same period of time.

### **NG Bus Engines to Meet/Beat New EPA 2007-2010 Emissions Rules**

Those who attended the Nov ’04 Anaheim TUG meeting heard both Cummins and John Deere discuss their plans to have 2007-2010 emissions compliant natural gas powered engines on the market in advance of the EPA deadlines. These plans have been finalized and were shared with the public at the May 2005 Clean Cities Conference in Palm Springs, California. Press releases indicate that they will not only meet the new EPA 2007-2010 emissions rules, but they expect to be even cleaner than required and/or they plan to offer those engines well in advance of the imposed EPA deadlines. In general, they plan to begin offering 2007 compliant NG bus engines during this calendar year (2005) and will offer 2010 compliant engines as early as 2007.

### **Sacramento RTD’s CNG Bus Program**

In 1991 Sacramento RTD decided that diesel was no longer an option and chose to go with CNG buses. Cam Beach, RTD’s CEO, says it was a “good decision for us when we made it” and we “will continue to purchase CNG buses in the future.” CNG now powers 262 of RTD’s 279-bus fleet, with CNG buses operating over nine million miles per year. They average 2.6 miles per therm of gas (3.3 miles/dge) and cost \$0.10 per mile less than diesel buses to operate (based on comparison when RTD operated substantial numbers of both types of buses).

In his presentation to the Clean Heavy Duty Vehicle Conference earlier this year, Mr. Beach made the following conclusions on RTD’s experience with their CNG fleet:

### Conclusions concerning the bus:

- Buses and technology are reliable with an engine life of 500,000 miles between major overhauls.
- Problems are no more severe than those experienced with the old diesel fleet.
- CNG buses are more expensive to purchase – about \$30,000 over a comparable diesel bus.

### Conclusions concerning fueling and maintenance facilities:

- Qualified and experienced engineering support and the purchase of quality equipment are required.
- The facility is more expensive and complex than a diesel facility and requires a higher level of maintenance.



For a copy of Mr. Beach's presentation, contact Hank Seiff (see contact information on the last page).

### **San Diego Adds NG Buses**

The first of 47 new buses for San Diego's Metropolitan Transit System hit the road early in June, with the rest scheduled to roll out by the end of the month. "It's the dawn of a transit system for the 21st century," said MTS chief Paul Jablonski at a dedication ceremony near Petco Park. The 40-foot CNG buses replace diesel vehicles that were up to 14 years old, two years beyond the federal definition of a useful life span for an urban bus. The new buses were purchased from New Flyer of Winnipeg, Manitoba, with assembly at a plant in Crookston, Minn. The cost of about \$350,000 each came from a mix of local, state and federal funds. For more information, contact Rich Kolodziej at 202/824-7366 or [rkolodziej@ngvc.org](mailto:rkolodziej@ngvc.org).

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### **Next TUG Meeting October 26-28**

The next Natural Gas Transit Users Group (TUG) meeting, scheduled for October 26-28, will be hosted by the Gwinnett County DOT in Lawrenceville, GA (northeast of Atlanta). The program will have a special focus on medium and smaller sized agencies that have introduced NG buses to their fleets and will include:

- Training of fire, police, and first responders on CNG bus systems,
- Tour of Gwinnett's CNG time-fill bus fueling and maintenance facility,

- Tour of Cobb Community Transit’s low cost CNG refueling facility,
- Demonstration of new PRD training tool developed for TUG,
- Discussions of Montgomery County (MD)’s wet gas issues and SCAT’s gas interruption caused by mud slides, and
- Presentations by compressor manufacturers.

There is **NO CHARGE** for attending TUG meetings. If you received this newsletter you will receive a full agenda and details about the upcoming TUG meeting in a few months.

To suggest other agenda items for the October TUG meeting or for further information, contact Hank Seiff (see contact information on the last page).

### **Government TUG Fact Sheet**

The Department of Energy’s National Renewable Energy Laboratory (NREL) recently published a fact sheet on TUG, the Natural Gas Transit Users Group, providing information and assistance to transit agencies operating or considering acquisition of natural gas transit buses. The fact sheet, called “Assisting Transit Agencies with Natural Gas Bus Technologies,” can be found at <http://www.eere.energy.gov/afdc/pdfs/37921.pdf>.

### **Silicone “Plug” in PRD Vent Line?**

A few months ago Barry Goldman of WMATA (Washington, DC Metro) wrote us that their present fleet of New Flyer CNG buses came with silicone sealer or similar caulking in conjunction with the rubber caps on the PRD (pressure relief device) vent lines. This was done to prevent moisture from entering the lines and finding it's way to the PRD, possibly causing the PRD to prematurely fail if the moisture froze and displaced the disk in the PRD. Some fleets have had a problem with the rubber caps coming off with regular use or after numerous trips through the bus wash, leaving the system open to the elements. WMATA’s “new” fleet of Orion buses has caps over the PRD vent lines, but no silicone or sealer. He wondered if it was “standard practice” to put silicone sealer at the end of the vent tubes as an extra precaution to prevent moisture from entering the tubes – especially if a cap was damaged or missing.

Garth Ruttig of New Flyer provided us with the following manufacturer’s recommendations:

“New Flyer's standard practice has been to attach a rubber cap over the PRD outlets using a small amount of caulking to retain it. We do not, or should not, be filling the tube with the caulking. It is only there to help

the cap survive daily use. NFPA 52, 2002 edition, page 52-10, section 5.4.5 requests the vent opening be protected from the elements but also not restrict the flow. If a PRD vents on our bus, the cap must be replaced as outlined in our Service Manual.”

We would like to hear from other TUG members on this matter to find out what’s actually working in the field. Are some rubber PRD vent caps on newer buses doing a better job than others of staying attached? Is the New Flyer “belt & suspenders” factory practice of installing the cap along with a small amount of sealer helping?

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Please send all questions, comments, requests for information, etc. to Hank Seiff at 703-534-6151 or [hseiff@cleanvehicle.org](mailto:hseiff@cleanvehicle.org).

Photos of a Sacramento RTD CNG bus in the heading and the RTD CNG fuel island were taken from Sacramento RTD’s “CNG Bus Program” presentation described above.