

New Competitors for Diesel

BI-FUEL TRUCKS USE BOTH NATURAL GAS AND GASOLINE FOR GREATER RANGE

By Sean Kilcarr



Two industry trends have suddenly dovetailed nicely to place natural gas-powered pickup trucks in a whole new light.

The first centers on the higher cost of diesel engines with the new selective catalytic reduction (SCR) emission control systems that meet stringent federal exhaust emission rules for diesel-powered trucks. Now, the cost of a diesel-powered truck is close to natural gas models without any government subsidies.

The other is better range. Earlier this year, OEMs added a whole new twist to the natural gas picture – rolling out bio-fuel pickups capable of running on both compressed natural gas (CNG) and gasoline, thereby eliminating long-standing concerns over range.

For example, GM introduced a 2013 model in April of its Chevrolet Silverado 2500 HD and GMC Sierra 2500 HD with a factory-installed CNG/gasoline propulsion system offering 17 gasoline gallon equivalent (GGE) worth of CNG storage – storage that occupies 25 percent of the usable space in the pickup bed – coupled to a 36 gallon gasoline tank.

“The bi-fuel truck provides [customers] with added re-fueling flexibility and eases consumer range concerns that typically come with CNG – all while reducing emissions and controlling costs,” says Joyce Mattman, director of GM’s commercial product and specialty vehicles division.

GGEs are calculated as having the same energy equivalent as one gallon of gasoline, she notes, with CNG sold at filling stations in the U.S. priced in dollars per GGE. A gasoline gallon equivalent of CNG is approximately 14.5 liters at 3600 psi.

At current prices, which are generally \$1.25 less than the gallon equivalent of gasoline, CNG promises significant cost savings over the life of the truck, GM says.

GM also notes that its bi-fuel pickup models are priced \$11,000 above gasoline-only versions but cautions that there is a 12 percent falloff in horsepower when the vehicle shifts from gasoline to CNG power. Yet that big up-charge for a bi-fuel truck – which varies depending on the OEM and model selected – isn’t too far off from the diesel option.

CONVERTING TO BI-FUEL

Canada’s Westport Innovations is one of six qualified vehicle modifiers providing a bi-fuel CNG/gasoline package for Ford’s F-250 and F-350 SuperDuty models called the “WiNG” system.

Westport’s LD (light duty) division notes that the up-charge for equipping either of those Ford Super Duty models with the “WiNG” bi-fuel system is \$9,750, with an extra \$1,200 added if buyers want to add a 24 GGE CNG storage tank versus the standard 18.4 GGE package – a cost in line with the \$8,000 to \$10,000 extra required to power such models with diesel engines, said Brian Raithsburg, Ford’s F-Series Super Duty marketing manager.

“It gives pickup operators a strategic opportunity, especially for small fleets,” he says. “For those operating for example in Texas, Oklahoma, and Pennsylvania where numbers of public CNG filling stations exist, they can achieve savings from the lower cost of natural gas over time. That clearly factors into the TCO [total cost of ownership] decisions they’re making.”

However, all of the bi-fuel CNG/gasoline pickups hitting the market are still in their infancy, with orders only beginning to trickle in – orders that, surprisingly, are not just coming from state and municipal fleets that may try to take advantage of the MOU signed last November that’s been broadened to involved 22 states, up from the four original signers.

Indeed, Bob Hegbloom, director of the Chrysler’s Ram truck division, says the demand for the company’s new bi-fuel 2500 HD pickups unveiled in March quickly shifted unexpectedly. “We originally laid it out as a big fleet play; a truck that large fleets operating 50 to 100 vehicles or more would be the most capable of utilizing as they had more resources to address CNG refueling infrastructure needs,” he says.

“But right away, we started getting calls from our dealers for a ‘retail’ option so they could sell these bi-fuel trucks to small fleets operating say five vehicles as well as individual buyers,” Hegbloom says. “It was just surprising how fast demand for such alternative fuel options spread.”

Ram's bi-fuel 2500 HD pickup will be sold in a crew cab configuration with either a long or short bed for \$47,000, the company says. Powered by a 5.7-liter Hemi V8 engine linked to a 6-speed automatic, the bi-fuel Ram 2500 HD comes equipped with two CNG tanks providing 18.2 GGE worth of storage secured in the pickup's bed to its frame. The truck also comes with an eight-gallon gasoline tank.

The reason for the interest in such a bi-fuel platform is pretty simple, Hegbloom says: cost. With diesel engines and mandated emission control systems adding in some cases \$10,000 to the base sticker price of a heavy-duty pickup, Hegbloom says fleets and individual buyers are strongly exploring a move to alternative fuels.

"CNG is a widely accepted fuel in the U.S., Europe and Asia," says Robert Lee, VP and head of engine and electrified propulsion engineering for Chrysler. In addition, he says that CNG reduces smog-producing pollutants between 70 and 90 percent and significantly reduces greenhouse gas emissions. He adds that the CNG-only range for the Ram is estimated to be 255 miles, while the backup supply of gasoline extends the range to 367 total miles

STATES MOVE TO SPUR NGVS

In November 2011, Gov. Mary Fallin of Oklahoma, Gov. John Hickenlooper of Colorado, Gov. Tom Corbet of Pennsylvania, and Gov. Matthew Mead of Wyoming signed a memorandum of understanding (MOU) to forge what they dubbed a "coordinated, multi-state" effort to encourage U.S. automobile manufacturers to develop a functional and affordable natural gas vehicle (NGV) fleet.

Since then, 18 other states have signed on to the MOU to save taxpayer dollars by "encouraging the use of a domestic energy resource to fuel our nation's transportation needs."

The MOU calls for the joint solicitation of multi-state requests for proposal (a joint-RFP) to aggregate annual state fleet vehicle procurements to provide sufficient demand.

The MOU calls on state governments to coordinate with local agencies, municipalities and companies to determine the number of NGVs each state can commit to purchase and the required specifications necessary to meet fleet needs.

The Joint-RFP also requires that the ultimate cost of an OEM-built NGV should be comparably priced to an equivalent gasoline powered model, ensuring that warranty and reliability concerns are not compromised.

Simultaneously, the states understand the need for continued development and expansion of CNG fueling infrastructure and encourage private investment to meet projected demand.

The states intend to transition new fleet vehicle acquisitions in committed volumes and encourage purchases from local businesses using life-cycle costs as the criteria. ◀

SEAN KILCARR is senior editor of *Fleet Owner*, a *Government Procurement* sister publication.

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