NGI Daily Gas Price Index

NGV Ignition Technology Program to Challenge Diesel Market

Richard Nemec December 15, 2015

Natural gas vehicle (NGV) engine technology provider Vancouver, BC-based Westport Innovations Inc. and Des Plaines, IL-based Gas Technology Institute (GTI) have received a total of $900,000 from two California sources to pursue advances in Westport's enhanced spark ignited (ESI) natural gas engine.

The California Energy Commission (CEC) and Sempra Energy's Southern California Gas Co. (SoCalGas) provided grants of $750,000 and $150,000, respectively, and Westport is kicking in $250,000 on a program to perfect the ESI engine technology while demonstrating an advanced ignition system on an original equipment manufacturer (OEM) partner's engine. The "high frequency corona discharge ignition" will be used in an engine targeted for medium-duty commercial vehicles.

"Westport ESI technology allows for the first time a spark-ignited NGV engine to exceed the performance of a comparable state-of the-art diesel engine," said Brad Douville, Westport vice president for business development. Douville said this should be a preview of the next generation of NGV engines, which he thinks will be "smaller, lighter, lower cost and have even higher performance than modern diesel engines."

Douville said Westport and its partners should be able to exploit the advantages of natural gas as a high-performance fuel with naturally lower emissions challenges.

"The new program builds on our ESI foundation by integrating corona discharge ignition technology," said Douville, adding that this opens up the potential for even higher engine performance, efficiency and reliability at lower maintenance costs, compared to current spark ignition hardware. The advanced product could be commercially available in four years.

From California's perspective, CEC Chairman Robert Weisenmiller said the program fits the state's push for advanced transportation technologies using alternative and renewable fuels, helping in the push to drastically cut the state's carbon footprint over the next decades.

And for SoCalGas, it is another step in attempting to accelerate commercialization of NGVs to help the Southern California regional air quality regulators meet increasingly stringent standards.

Separately, CEC has approved a contract with the South Coast Air Quality Management District (SCAQMD) for employing new technology to measure tailpipe emissions of NGV school buses and refuse trucks. This is supposed to help calculate how much pollution is eliminated by the use of NGVs when compared with diesel vehicles.

The five-member CEC also approved grants to expand or install equipment to support NGV fueling in Kern County, Kings Canyon Unified School District and the Las Gallinas Valley Sanitation District in San Rafael, CA.

Out of Detroit, Ford Motor Co. said it is bringing back a natural gas fuel option on its F-150 full-size pickup trucks in 2016 after not providing the option on its 2015 models that were an all-new version of its light-duty pickups. Production of the 2016 F-150 models that can run on compressed natural gas (CNG) has begun at Ford's Kansas City assembly plant in Claycomo, MO.

Ford had offered F-150 pickups that could run on CNG or propane in its 2014 models, making an adjustment to a 3.7-liter V6 engine, but dropped the option on this year's models. Ford has brought back the option, but this time with a larger engine, a 5-liter V8. It can be equipped with a bi-fuel CNG/propane package offering a range of more than 750 miles on combined gasoline and CNG tanks.

Fiat Chrysler Automobiles (FCA) said it will spend $40 million to convert 179 tractors to CNG in its private fleet operation hauling parts to its Detroit assembly plants. The fleet is operated by FCA's North American division, which has already spent $1.8 million to upgrade its 36,000-square-foot maintenance facility for the CNG fleet.

FCA also has spent $5 million for its own onsite CNG fueling station, designed and built by TruStar Energy. FCA officials said they expect a 35% reduction in fuel costs from the shift to CNG. Most recently the company has used nearly 2.6 million gallons of diesel fuel and driven 16 million miles annually to deliver parts from its suppliers.

In a similar move, American Honda Motor Co. has modified its car-hauling tractor-trailer trucks to run on CNG. Mainstay Fuel Technologies and Virginia Transportation Corp. have combined to modify 30 Peterbilt 365 daycab trucks for the American Honda fleet that transports cars from Honda's Lincoln, AL, plant.

Mainstay engineered the fuel systems using a dual side-mounted alignment with two Type IV cylinders made by Nebraska-based Hexagon Lincoln, allowing 69 diesel gallon equivalents (DGE) of CNG storage on each truck.

Last Friday, the city of San Mateo, CA, south of San Francisco, broke ground for a new biomethane-fed CNG fueling facility at the city's wastewater treatment plant. BioCNG equipment will be provided by Iowa-based Unison Solutions.