

# DOE News Release

FOR IMMEDIATE RELEASE

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## DOE Completes Hydrogen/CNG Blended Fuels Performance and Emissions Vehicle Testing

The U.S. Department of Energy, through its Advanced Vehicle Testing Activity, has recently completed performance and emissions testing of an internal combustion engine equipped Ford F-150 pickup operating on 100% compressed natural gas (CNG) and two blends of hydrogen and CNG (HCNG). The two blended HCNG fuels were 15% hydrogen and 85% CNG (15% HCNG), as well as 30% hydrogen and 70% CNG (30% HCNG).

The testing was conducted to quantify the acceleration, range, and exhaust emissions results when using various levels of blended hydrogen fuels and CNG.

The acceleration times (seconds) to go from zero to 60 mph increased and the vehicle range decreased when the amount of hydrogen in the fuel was increased. Carbon monoxide reductions were achieved with higher percentage blends of hydrogen. The complete testing report, including gasoline, CNG, and HCNG performance and emissions testing results can be found at <http://avt.inel.gov/hydrogen.html>

The F-150 is equipped with a factory CNG internal combustion engine and 3,600 psi carbon steel tanks. The F-150 was modified by NRG Technologies to operate on blended HCNG fuels up to 30% hydrogen. The modifications included supercharging, ignition alterations, and exhaust gas recirculation.

The F-150 test vehicle is one of 20 hydrogen- and HCNG-fueled internal combustion engine vehicles being tested by the Idaho National Engineering and Environmental Laboratory, which manages these activities for the Department of Energy's Advanced Vehicle Testing Activity, and its testing partners Electric Transportation Applications and Arizona Public Service.

The 20 hydrogen and HCNG vehicles are fueled at the Arizona Public Service Alternative Fuel Pilot Plant, which produces hydrogen through electrolysis by operating a fuel cell in reverse. The Pilot Plant compresses the hydrogen to 6,100 psi.

DOE, through its Advanced Vehicle Testing Activity, conducts Baseline Performance, Accelerated Reliability and Fleet testing on advanced technology vehicles. The Advanced Vehicle Testing Activity is a component of DOE's Office of FreedomCAR and Vehicle Technologies Program.

These Advanced Vehicle Testing Activity light-duty vehicle evaluations are managed for the DOE Office of Energy Efficiency and Renewable Energy from the Idaho National Engineering and Environmental Laboratory in Idaho Falls, Idaho. For more information on this and other testing activities, visit the Advanced Vehicle Testing Activity Web page at <http://avt.inel.gov> or contact Jim Francfort ([francfje@inel.gov](mailto:francfje@inel.gov), 208-526-6787).

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