

TECHNOLOGY DEVELOPMENT PROJECT FACT SHEET

FF004: H-CNG VEHICLES – FORD F150 100% H2 TRUCK

The model year 2001 Ford F150 was originally equipped with a factory gasoline engine, but was modified by NRG Technologies of Reno, NV to operate on a blend of hydrogen and CNG. The vehicle arrived at APS in January 2002 operating on a 30/70% blend, and was modified five months later to accommodate up to a 50/50% blend. The vehicle is a super-low-emission vehicle (SULEV), and because of the low emissions level, the vehicle exhaust can be cleaner than the ambient air. The vehicle was a competitor in the 2001 Michelin Challenge, receiving an “A” in vehicle emissions.



Three prototype tanks were manufactured by Quantum Technologies and have an inner polymer lining and a carbon fiber reinforced shell. The tanks have a maximum working pressure of 4,400 psi and a service pressure of 3,600 psi. The three tanks combined hold approximately 15 gge for a range of 300 miles. The F150 was fueled using a FuelMaker dispenser that uses a fuel mixer to receive natural gas at 30 psig and hydrogen at 30+ psig. The FuelMaker compresses the fuel blend to 3,600 psig and dispenses at a rate of 1.9 scfm. The vehicle was tested at Argonne National Labs for vehicle emissions using 30% and 50% hydrogen blends.



| Factory Specifications | |
|------------------------|------------|
| Engine | 5.4L V8 |
| Factory HP | 260 hp |
| Curb Weight | 5,600 lbs. |
| GVWR | 6,300 lbs. |

| Emissions Results – 30% HCNG | | | | | | |
|------------------------------|--------|-------|-------|-----------------|-----------------------------------|-------------------------------|
| Test | NMHC | CO | NOX | CO ₂ | Non-CO ₂ /CO Emissions | CO ₂ /CO Emissions |
| FTP | 0.0014 | 0.879 | 0.005 | 518.1 | 0.0064 | 518.979 |