

Independent tests validate BMW Hydrogen 7 emissions well-below SULEV

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The BMW Hydrogen 7 Mono-Fuel demonstration vehicle, a near-zero emissions car, undergoes testing at Argonne's Advanced Powertrain Research Facility (APRF), the principal U.S. Department of Energy facility for assessing advanced hybrid electric vehicle technologies. APRF is a unique facility in North America because it is able to detect trace levels of emissions.

Independent tests conducted by engineers at the U.S. Department of Energy's (DOE) Argonne National Laboratory on a BMW Hydrogen 7 Mono-Fuel demonstration vehicle have found that the car's hydrogen-powered engine surpasses the super-ultra low-emission vehicle (SULEV) level, the most stringent emissions performance standard to date.

"The BMW Hydrogen 7's emissions were only a fraction of SULEV level, making it one of the lowest emitting combustion engine vehicles

that have been manufactured," said Thomas Wallner, a mechanical engineer who leads Argonne's hydrogen vehicle testing activities. "Moreover, the car's engine actively cleans the air. Argonne's testing shows that the Hydrogen 7's 12-cylinder engine actually shows emissions levels that, for certain components, are cleaner than the ambient air that comes into the car's engine."

It was not an easy task to measure the Hydrogen 7's emissions. "A gross polluter is easy to measure, but the cleaner the car the harder it is to test," said Don Hillebrand, director of Argonne's Center for Transportation Research. "Most labs test at the SULEV level. Argonne's vehicle testing facilities are unique in that they are able to detect even trace levels of emissions. In this case, it was near-zero emissions."

After an extensive evaluation by BMW, "Argonne's Advanced Powertrain Research Facility was found to be the only public test facility in North America capable of testing hydrogen vehicles at these low emissions levels," said BMW's Wolfgang Thiel, manager, operating support emissions analysis. "Zero is a very small precise number – we are pushing the boundaries of emissions testing."

Technical and program information about the Hydrogen 7 tests will be presented by Wallner and BMW North America's Jason P. Perron Wednesday, April 2 during the National Hydrogen Association Annual Hydrogen Conference, March 30-April 3, in Sacramento, Calif. Argonne will join BMW's Christoph Huss, senior vice president, science, traffic and vehicles regulations, in a press conference to present the test results during the Society of Automotive Engineers 2008 World Congress, April 14-17, in Detroit.

BMW has put the hydrogen model into limited series production. Although the vehicle is not yet available for sale to the general public, it is being made available to "influential public figures," whose use

demonstrate a new era in clean energy, BMW has said. In the meantime, the greatest challenge to widespread use of hydrogen cars is the limited number of hydrogen refueling stations.

Argonne has conducted cutting-edge transportation research for more than 30 years and employs a multidisciplinary staff of engineers and scientists involved in engine, battery, fuel cell, vehicle systems and applied materials research.

Argonne's transportation research program and facilities are primarily funded by DOE's Office of Energy Efficiency and Renewable Energy, which supports the development of vehicle technologies and alternative fuels to reduce greenhouse gas emissions and dependence on foreign oil, and enables the U.S. transportation industry to sustain a strong, competitive position in domestic and world markets.

Source: Argonne National Laboratory

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