

Next-Generation Diesel Vehicles Use New, Clean Fuels to Reduce Exhaust Emissions

Did you know...

Newer diesel engines are 99 percent cleaner, emit about 90 percent less soot, and produce about 70 percent lower nitrogen oxide (NO_x) emissions, thanks to regulations put in place by the U.S. Environmental Protection Agency (EPA) for January 2007 implementation.

Opportunity

The U.S. EPA established low-sulfur diesel requirements in 2006 to help improve air quality. To meet these standards, advanced technology diesel engine vehicles are being developed that run on new, clean diesel fuels. New fuels also must be developed and evaluated to ensure that the engines run as cleanly as possible.

Argonne's Solution

Argonne researchers are developing alternative clean diesel fuels using natural gas, coal, and renewable energy sources such as wood for raw material. The new fuels are being tested in new diesel cars at Argonne to ensure that the U.S. EPA regulations for particulate and other emissions are met, and that engine efficiency does not suffer.

Potential Benefits

With today's new diesel vehicles and fuels you don't see any smoke, you won't smell exhaust fumes, and you won't hear diesel engine noise. Diesel vehicles will be on an "oil-free diet", saving imported petroleum for more critical uses and increasing national energy security. These state-of-the-art diesel vehicles can have a fuel economy of more than 50 miles per gallon.

Industry Partnerships

Argonne partnered with CHOREN Industries GmbH, a renewable energy company, in testing diesel derived from wood chips. Argonne scientists are now working with Sasol, an integrated energy and chemicals company, to develop diesel fuel derived from natural gas and coal.

Visit www.transportation.anl.gov to learn more!



Henry Ng, principal investigator for the clean fuels project, demonstrates the clarity of a new crystal-clear Sun diesel fuel that comes from wood, a renewable natural resource.



Steve McConnell prepares to mix clean diesel fuels for testing.



Argonne fuels researchers (from left) Steve McConnell, Henry Ng, Forrest Jehlik, Geoff Amman and Mike Kern are shown with samples of ultra-low sulfur diesel fuel, a cleaner-burning diesel fuel used in the Opel Astra. The VW Jetta TDI runs on a clean diesel fuel derived from coal.



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