

## Hi, I'm Diesel, Have We Been Introduced?

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SCCA Pro Racing Volkswagen Jetta TDI Cup racing series "Will certainly dispel the myths about diesel being slow and smoky."

Will high fuel prices and new fuel economy legislation ensure success for a number of so-called "clean diesel" models heading to the U.S. market in the fall? Several international brands – especially luxury brands – are betting on it, and analysts are calling it a sure thing. Some market research, however, suggests a need for stepped-up marketing to sell the concept to consumers.

Equipped with new technology to meet the same emissions regulations as gasoline vehicles (Tier 2 / Bin 5), Acura, Audi, BMW, Mercedes-Benz and Volkswagen will introduce 50-state clean diesels for 2009.

(Mercedes currently offers four diesel models that can be sold in 42 states.) Nissan will introduce a diesel Maxima for 2010. Toyota is

working on a diesel for its Tundra full-size pickup truck, an area where the Detroit Three are focusing their diesel entries for now.

There are optimistic projections for diesel. Bosch, a major supplier of fuel system components with a vested interest in diesel's success, predicts a 15-percent share of the U.S. light vehicle market in 10 years; J.D. Power and Associates projects that diesels will zoom from three percent of light vehicle registrations in 2007 to 14 percent within 10 years. (The light vehicle category includes SUVs and pickup trucks.)

"We're bullish on diesel technology," said Doug Schuster, executive director, global forecasting, J.D. Power & Associates. "We expect to see a tremendous amount of growth over the next five years."

### What is a "Clean Diesel?"

Carmakers use the term "clean diesel" to contrast new, high-tech diesels that meet 50-state emissions regulations from the negative image many people still hold for diesels. While known for high fuel efficiency, diesels in the past fostered a reputation for being noisy, smelly, slow and smoky.

Clean diesels eliminate those drawbacks, thanks to a combination of new fuel-management, catalyst and filter technology and the federally mandated ultra-low sulfur diesel fuel they require to function. Several diesel emission-control technologies are on the way, and technology adds cost. Many of the German diesel models will use a urea injection system in the exhaust to neutralize oxides of nitrogen emissions. Such systems require an onboard storage tank that must be replenished at regular intervals. Honda, meanwhile, is introducing a proprietary technology that produces the needed catalytic reaction without requiring urea.

Also, in contrast to their slow forbears, today's diesels perform on par with their gasoline counterparts. And with their higher torque, some diesels can *feel* quicker to drive.

### Courting A Positive Image

In its second annual Alternative Powertrain Study, J.D. Power and Associates said the number of drivers ready to consider a diesel increased from 12 to 23 percent last year. The study's participants expressed a willingness to pay a \$1,500 premium for a diesel engine, but also expected a 15-mpg gain in fuel economy. Real world cost premiums over gasoline models will likely be higher, however, and fuel economy gains much less dramatic than that.

Meanwhile, only six percent of about 300 active car shoppers surveyed on the Kelley Blue Book web site this past January said they thought diesel would likely succeed in becoming a mainstream vehicle powertrain. In comparison, 40 percent said hybrids were the way to go, 20 percent indicated hydrogen fuel cell and 17 percent cited flexible-fuel systems. Nearly half of shoppers in the KBB.com study described diesels as "dirty" and "noisy." Surprisingly, KBB.com said shoppers increasingly believe that diesel-powered vehicles get poorer, not better, fuel economy than gasoline engines.

"Clearly, many Americans still think of the dirty diesels of the past and are not aware of the benefits of new clean-diesel technology," said Jack R. Nerad, executive editorial director and executive market analyst for Kelley Blue Book and kbb.com. He cited Volkswagen's "Diesolution Tour" marketing campaign as a good example of promoting the clean diesel message. Schuster expressed similar caution. "There is still a perception issue to overcome, so those bringing the products in will have to educate the public," he said.

Cheri Fleming, owner of Valencia Acura in Santa Clara Valley, Calif., welcomed news of the new diesel, calling it a "great fit" for the brand. "Acura has great technology, but we've been asking for an alternate fuel-type of vehicle. I think this one will be well received." She acknowledged the need to educate consumers, whom she feels are acutely aware of older diesels' downsides.

### **Better Economy, Higher Price**

Diesels return about 25-30 percent better fuel economy than gasoline engines of comparable performance, but economic advantages are blunted somewhat by the price premium for diesel engines and diesel fuel. On average, diesel costs 10 cents more per gallon than premium-grade gasoline and nearly 40 cents more per gallon than regular (AAA national fuel price survey, February 1, 2008). Schuster speculated that an increased market could drive up demand and possibly lower the cost of diesel fuel.

In addition, diesel can be less convenient to use than gasoline, since it is available at only about 42 percent of the nation's 170,000 filling stations, according to petroleum industry estimates. Better economy can mean fewer fill-ups, of course, and consumers can find diesel-location tools and maps on the Internet.

Here's a rundown of upcoming diesel passenger cars and SUVs for 2009.

### **Acura**

Although Acura would not yet name its first diesel model, *Automotive News* (January 21) reported that it would be the next-generation TSX coming for 2009. Spokesperson Chris Naughton called the new Acura clean diesel an "environmental and technological advantage" for the brand and confirmed that Honda-branded diesel vehicles would follow. "Our diesel will offer power, fuel economy and clean emissions with no urea," he said. "Not requiring urea is a big differentiator, as our diesel will be a 50-state car with no need for consumer maintenance to keep an after-treatment tank properly filled."

### **Audi**

Audi's first 50-state diesel engine will be offered in the Q7 SUV in the fall. Spokesperson Christian Bokich confirmed that the new Q7 diesel would produce about 230 hp and 375 lb.-ft. of torque. "As a rule, we say that this engine has 15 percent more torque than our traditional gasoline V8 engines, while achieving 15-percent better fuel economy than our traditional gasoline V6 engines," he said. Although Bokich could not confirm potential diesel offerings beyond the Q7, he pointed out that in Europe, the engine is available for the A4, A5, A6 and A8 passenger cars.

### **BMW**

Diesel models account for 67 percent BMW's European sales, and its engines are highly regarded. The brand offered a turbo-diesel in the U.S. in the 1980s and also supplied the engine to Ford for use in some Lincoln models. This fall, BMW is offering a new 265-hp twin-turbo 3.0-liter diesel engine in the 335d sedan and the X5 xDrive35d SUV models. BMW estimates 23 mpg city/33 mpg highway fuel economy for the 335d, vs. 17/26 mpg for the gasoline 335i. The diesel engine makes about 10 percent less horsepower, but a whopping 40 percent greater torque, than the 335i's gasoline engine, giving it a musclecar feel. Economy for the diesel X5 model is estimated at 19/25 vs. 15/21 for the gasoline X5 3.0si.

### **Mercedes-Benz**

Mercedes-Benz pioneered diesel passenger cars and was a major purveyor of them in the early days of CAFE (and consequently a very visible source for diesels' perceived negatives). Today, the company offers the only diesel passenger vehicles in the market, in the E-Class sedan and the ML, GL and R-Class SUV lines. They're quiet, clean diesels, but not yet clean enough for states with California emissions regulations.

That changes this fall, when the ML, GL and R-Class will offer a 50-state diesel V6, which will also be used in the next-generation E-Class arriving later for the 2010 model year. The upcoming GLK compact SUV, shown in "concept" form at the NAIAS with a 4-cylinder diesel, will *not* have a diesel when it launches this fall. "A diesel is being strongly considered, and if approved, would likely come for the second year," said spokesperson Rob Moran.



VW Diesolution Tour is spreading the word on clean diesel technology and other alternative fuels.

### Volkswagen

Volkswagen's first 50-state diesel, a Jetta TDI, arrives in late summer. "We have sold as many as 30,000 Jetta TDI's in a full year of production in the recent past, so we would expect to sell at least that many or more in an upcoming full model year," said VW spokesperson Clark Campbell.

Campbell acknowledged the need for focused marketing to ensure clean diesel's success. In addition to its "Diesolution" tour, VW is launching the first all-diesel touring car racing series in North America, the 2008 SCCA Pro Racing Volkswagen Jetta TDI Cup. "This new racing series will certainly dispel the myths about diesel being slow and smoky," he said.

### More in the Wings?

Not every company sees diesel as a sure-fire hit. Volvo, which sold diesels here in the 1980s, has introduced new diesels for Europe but is taking a wait-and-see approach for the U.S., according to spokesperson Geno Effler. "We definitely see the technological benefit of diesel, but can't yet see the financial benefit in this market. As diesel penetration increases, the likelihood increases of Volvo bringing diesel-powered vehicles to the U.S.," he said.

The Mitsubishi Concept-RA sport coupe concept that is touring this year's auto shows showcases a 201-hp clean diesel, and spokesperson Janis Little said that a diesel is "under study" for the U.S. market. Subaru is introducing its first-ever diesel in Europe and is studying it for the U.S.

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