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Volvo Ready to Launch Diesel PHEV; EU Electricity Becoming 'Greener'

Volvo announced October 17 that it will launch retail sales of its "V60" diesel plug-in hybrid electric vehicle (PHEV) in 2012 in Europe, in cooperation with Swedish electricity supplier Vattenfall.

Volvo and Vattenfall jointly financed the PHEV development scheme for a car that can claim carbon-dioxide (CO₂) emissions below 50 grams per kilometer (grams/km) – far lower than conventional hybrid cars with internal combustion engines.

"Now the project is on the threshold of introducing the market's first diesel plug-in hybrid," according to Volvo. "It's an attractive car type that gives the user access to the very best properties of both an electric car and a diesel-powered vehicle: very low fuel consumption and CO₂ levels, combined with long range and high performance."



'V60' Diesel PHEV / Source: Volvo

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When powered solely by electricity, the V60 has a range of up to 50 kilometers (km), but the car's total operating range is up to 1,200 km when operating with the diesel engine, according to Volvo.

Carbon-dioxide emissions will be an average of 49 grams/km as measured on the standard New European Drive Cycle and fuel consumption is rated at 1.9 liters per 100 km, according to the company.

"The cost of the battery pack means the plug-in hybrid will be more expensive to buy than a Volvo V60 with a conventional combustion engine," according to Volvo. "On the other hand, fuel costs will be one-third compared with a conventional combustion engine. The cost of running on electricity in Sweden has been calculated at about 25 kronor [US\$3.75] per 100 km. The exact cost will vary from one market to another."

The car batteries can be recharged "via a regular household electricity socket at home or when parked somewhere else. Charging time is about five hours if the car is recharged at home," according to Volvo.

EU Electric Power CO₂ Ceiling

"An electric motor is almost four times as efficient as a regular combustion engine. This means that an electrically powered car consumes less energy and thus produces lower emissions, even if it is powered by a blend of electricity sources that include fossil fuels."

"European electricity production has an emission ceiling. This means that even if all vehicles were to run on electricity,

electricity production itself is not allowed to produce more carbon dioxide. This emission ceiling will be gradually lowered over a period of time," according to Volvo.

"Electricity is an excellent source of energy. It does not risk running out, and it can be produced virtually without any CO₂ emissions. For instance, Vattenfall is working towards halving the company's emissions by 2030 and becoming climate-neutral by 2050.

"Emissions from millions of exhaust tailpipes are transferred to a small number of production facilities, which are easier to control and which will operate on the basis of the EU's trade in emission rights, something that does not apply to the transport sector at present.

"Electric vehicles use relatively little electricity and the increase in consumption will be more than covered by ambitious expansion plans for renewable energy sources throughout Europe. A single wind-power station, for instance, produces sufficient renewable energy to power 3,000 electric cars. Vattenfall will offer buyers of the Volvo V60 plug-in hybrid a contract including electricity from renewable sources.

"Wind-power is being commercially introduced on a large scale and is continuing to expand, biofuels will replace fossil fuels on a broad front, wave-power is expected to enter commercial operation within ten years, and new technology to clean CO₂ emissions from coal-fired power stations is currently under development." – [Jack Peckham](#)

REGULATION & LEGISLATION

Petroleum Marketers Fret over CFTC Energy Futures Rules; CME Sees Flaws

The New England Fuel Institute (NEFI) and the Petroleum Marketers Association of America (PMAA) expressed "guarded optimism" over two new commodity trading rules issued October 18 by the U.S. Commodity Futures Trading Commission (CFTC).

NEFI President and CEO Michael Trunzo said the 1,200 NEFI and 8,000 PMAA members, which include gasoline marketers and home heating oil dealers, are "hopeful" that the new CFTC energy futures trading rules "will result in more transparent, stable and competitive energy trading markets the regulatory measures."

The new rules would establish speculative position limits on futures and swaps, and clarify rules for derivative clearing organizations.

"We believe the position limits rule is the most significant rule yet to be taken up by the Commission under last year's Wall Street reform bill," Trunzo said. "However, the delay in the rule implementation for the spot-month contracts concerns us greatly, as there is no timeframe in place."

The CFTC announced that spot-month limits would not be imposed until 60 days after the term "swap" is defined, at a date that has yet to be determined.

"Further, we are fearful the limit levels themselves may be insufficient to adequately address excessive volatility and speculation. Only time will tell," Trunzo said.

On the other hand, NEFI and PMAA are "pleased that the rule mandates regular review of limits, especially as

other rules are implemented and new data becomes available,” according to a joint press statement from the groups.

They also announced that they’re “pleased with the rule’s narrowing of exemptions from these limits afforded bona-fide hedgers, which [petroleum marketers] have long argued necessary to avoid exploitation by financial speculators.

“PMAA, NEFI and their allies have called for responsive energy derivatives markets that are designed to serve hedgers, ensure stability and minimize price swings, along with effectively communicating a price for energy based on real world supply and demand. “

While the groups “praised the CFTC for moving forward with a final rule to establish a new position limits regime,” they also “criticized the speculative limits as being too high, and continue to urge aggregate limits on all speculation, which was not included in the final rule.”

“Our members want to have confidence that the price per gallon of gasoline or heating oil as set by these markets is reflective of market fundamentals, not the cash flows of financial investors,” Trunzo said.

CME Group Reaction

Meanwhile, CME – owner of the NYMEX exchange that hosts the bulk of U.S. energy futures and options trading – announced October 19 that it supports various parts of the new rules, but not the portion of rules covering natural gas trading.

“We appreciate the Commission’s recognition of the need to establish equivalent position limits in the important spot month for physically-settled futures and those cash-settled

futures and swaps which are based on the daily and final settlement prices of the primary physically-delivered price discovery contracts,” CME said.

“With the lone exception of natural gas, the CFTC’s interim final rule will appropriately limit opportunities for inter-market manipulation and abuse in the spot month where the risk of misconduct and artificial prices is most acute.

“The Commission’s decision also rectifies for almost all physical commodities the inherent flaws in its original proposal, which would have allowed a single market participant to control in the spot month cash-settled positions equal to 125% of the deliverable supply in a covered commodity.

“We remain concerned that various provisions of the final rule relating to net portfolio and anticipatory hedging strategies will constrain legitimate risk management activities by commercial participants.

“We intend to work with the CFTC as soon as possible to ensure that deliverable supply is properly defined and calculated and that existing spot month position limits are adjusted to reflect current market conditions.

“This is critical given that existing limits in some products are more than 10 years old.

“We also remain concerned that the Commission has not yet explained its reasons for concluding that its adopted limits especially in non-spot months are necessary or appropriate and that the rules will encourage market participants to seek hedging and risk management alternatives outside of the United States.” – **Jack Peckham**

CARB Adopts Pioneering GHG Cap-and-Trade Regulation

The pioneering California Air Resources Board (CARB) on October 20 voted to adopt a final greenhouse-gas (GHG) cap-and-trade regulation, once again running far ahead of the U.S. government on carbon legislation or regulation.

“The cap-and-trade program will now join a suite of other major measures including standards for ultra-clean cars, low-carbon fuels and renewable electricity,” according to CARB. “The program also complements and supports California’s existing efforts to reduce smog-forming and toxic air pollutants and improve energy efficiency in homes and businesses.”

“Cap-and-trade is another important building block in California’s effort to create a clean and vibrant economy,” CARB Chairman Mary Nichols said. “It sends the right policy signal to the market, and guarantees that California will continue to attract the lion’s share of investment in clean technology.

“When the [U.S. government] addresses the growing danger of climate change, as I believe it must and will, California’s climate plan will serve as the model for a national program.”

The regulation sets a statewide limit on sources responsible for 85% of California’s GHG emissions and “establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy,” according to CARB.

“The program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions,” according to the agency.

The regulation will cover 360 businesses representing 600 facilities and is divided into two phases: the first, beginning in 2013, will include all major industrial sources along with

electricity utilities; the second, starting in 2015, brings in distributors of transportation fuels, natural gas and other fuels, according to CARB.

“Companies are not given a specific limit on their greenhouse gas emissions but must supply a sufficient number of allowances (each the equivalent of one ton of carbon dioxide) to cover their annual emissions,” according to the agency.

“As the cap declines each year, the total number of allowances issued in the state drops, requiring companies to find the most cost-effective and efficient approaches to reducing their emissions. The first compliance year when covered sources will have to turn in allowances is 2013.

“By 2020, the state will reach the equivalent of the 1990-level of greenhouse emissions, as required under AB 32, California’s climate change legislation. This is a 15% reduction compared to what the emissions would be in 2020 without any programs in place – the so-called ‘business-as-usual’ level.

“To ensure a gradual transition, CARB will provide the majority of allowances to all industrial sources during the initial period (2013-2014), using a calculation that rewards the most efficient companies. Those that need additional allowances to cover their emissions can purchase them at regular quarterly auctions CARB will conduct, or buy them on the market. The first auctions of allowances (for 2013 allowances) are slated for August and November 2012.

“Electric utilities will also be given allowances to be sold at auction for the benefit of their ratepayers and to help achieve AB 32 goals.

NRDC, Neighbors Sue UP, BNSF over Locomotive Diesel Pollution

The Natural Resources Defense Council, (NRDC), East Yard Communities for Environmental Justice and the Center for Community Action and Environmental Justice (CCA EJ) announced October 19 that they are suing the Union Pacific (UP) and BNSF railroad companies, claiming that locomotive diesel exhaust is a “hazardous waste” harming residents near rail yards.

The groups publicly threatened that they would file suit earlier this year (see [Diesel Fuel News](#) on 06/27/2011). Since then, “no progress has been made or any good faith effort on behalf of UP or BNSF to address the pollutants,” according to a joint press statement from the groups.

The plaintiffs claim to represent “hundreds of thousands of Californians, many of which live near rail yard facilities throughout California.”

“Eight percent of a company’s emissions can be covered using credits from CARB-certified offset projects, promoting the development of beneficial environmental projects in uncapped sectors such as forestry and agriculture. Included in the regulation are four protocols, or systems of rules for quantifying offset credits: in forestry management; urban forestry; dairy methane digesters; and, the destruction of existing stores of ozone-depleting substances in the U.S. (mostly in the form of refrigerants in older refrigeration and air-conditioning equipment).

“The regulation includes rigorous oversight and enforcement provisions, and is designed so that California may link up with programs in other states or provinces within the Western Climate Initiative, including British Columbia, Ontario and Quebec.”

The regulation has been in development for the past three years. “CARB staff held dozens of public workshops on every aspect of the cap-and-trade program design, and hundreds of meetings with stakeholders,” according to the agency.

“CARB staff also benefited from the analysis of a blue ribbon committee of economic advisers, consultation with world-renowned institutions that specialize in climate issues, and advice from experts with experience from other cap-and-trade programs elsewhere in the world,” according to the agency.

“People living near rail yards in San Bernardino should have the same quality of air as people living in Beverly Hills,” said David Pettit, NRDC senior attorney.

“When we reach a point where we have children as young as three years old, reliant on their air machines just to breathe, we have reached a public health crisis that demands drastic measures,” said Penny Newman, executive director for CCA EJ. “No company should be allowed to operate with total disregard for the harm they are causing.”

Spokesmen for UP and BNSF flatly contradicted the lawsuit claims.

UP told *Diesel Fuel News* that “we are in compliance with [California and U.S. Environmental Protection Agency, EPA] environmental requirements. Union Pacific has voluntarily worked with state and federal regulators for more than

a decade to substantially reduce locomotive and other emissions in and around California rail yards.”

Similarly, BNSF stated that it has “entered voluntary emissions reduction agreements with the California Air Resources Board more than a decade ago, which have been commended by the U.S. EPA.

“The California Air Resources Board has also stated the agreement will provide locomotive fleet benefits in

EPA Grants US\$50 Million for Diesel-Emissions Cleanups

The U.S. Environmental Protection Agency (EPA) announced October 20 that it has awarded US\$50 million for clean-diesel projects throughout the U.S.

The complete list of awards is available [here](#).

The latest grants will result in replacing, retrofitting or repowering “more than 8,000 older school buses, trucks, locomotives, vessels, and other diesel powered machines,” according to the EPA.

“While EPA’s [diesel engine] standards significantly reduce emissions from newly manufactured engines, clean diesel projects funded through these grants will work to address the more than 11 million older diesel engines that continue to emit higher levels of harmful pollution,” according to the agency.

“From 2008 to 2010, EPA has awarded nearly \$470 million to more than 350 grantees across the nation under the

Southern California 20 years earlier than the rest of the country. These voluntary efforts have improved rail’s environmental advantages over the highway by using the cleanest fleet of locomotives in the nation, using ultra-low emission diesel fuel and reducing diesel particulate emissions from rail yards by at least 50%, on average, since 2005.”

diesel emissions reduction program (also known as DERA). The grant-supported clean diesel projects have cleaned or replaced more than 50,000 vehicles and equipment nationwide.

“Grants under DERA, in addition to the clean diesel program grants, include National Funding Assistance Program grants; Emerging Technologies grants; ‘SmartWay’ Finance Program grants and direct state allocations,” according to the agency.

Every U.S. state will receive funding for clean diesel projects through direct state allocations.

“Additionally, EPA plans to award more than 50 grants across the nation. This year, for the first time, the following territories can now receive direct state allocation funds: Puerto Rico, Guam, the U.S. Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands,” according to the agency.

CARB’s Final Low-Carbon Fuel Standard Advisory Group Meets October 27

The California Air Resources Board (CARB) announced October 19 that its fifth and final low-carbon fuel standard (LCFS) advisory panel [meeting](#) will be Thursday, Oct. 27, at Cal-EPA headquarters in Sacramento.

“During this meeting, we will discuss the draft final version of the regulation review report to the [CARB] Board. The report includes all of the chapters and topics previously discussed by the Panel in previous meetings,” according to CARB.

“This will be the culminating meeting of the Panel prior to the report to the Board in December. There will also be time allotted for public comments and open discussion.”

U.K. Slaps Shell over Gasoline, Diesel Fuel Economy Claims

The U.K. Advertising Standards Authority (ASA) on October 19 ordered Royal Dutch Shell plc to stop using “misleading” claims of “up to 10%” fuel economy gains for its “FuelSave” unleaded gasoline and diesel fuels.

CARB is web-casting the meeting for those who can’t attend in-person and want to monitor the proceedings. Registration for the webinar is available [here](#). If prompted, the webinar ID number is: 560-381-737.

For those that want to speak at the meeting but can’t attend in person, CARB is also offering a teleconference line (1-800-475-0542 if calling from the U.S.; or 1-210-234-0965 if calling from outside the U.S.). Such callers must give the participant code (8782851) and leader name (Floyd Vergara).

“You may also type your questions to us using a chat box that will be available to you during the webinar,” according to CARB.

According to the ASA [decision](#), the regulatory agency “acknowledged that, where advertisers made ‘up- to’ savings claims, CAP [U.K. Committee of Advertising Practice] and the ASA generally expected that they should be able to

demonstrate that 10% of consumers would be able to attain the maximum savings claimed.

“We therefore considered that the claim should be substantiated by evidence showing that at least 10% of vehicles in the U.K. would save one liter of fuel in every 50 liters fill-up.

“We understood from Shell that it was generally recognized that Friction Modifiers and Combustion Improvers could reduce friction in petrol engines and reduce ignition delay in diesel engines. However, we considered that specific advertising claims about Shell’s fuels with added Friction Modifiers and Combustion Improvers must be substantiated with evidence relating to those particular fuel formulations.

“We considered the test data provided by Shell. We noted that, although five cars were tested using the unleaded fuel, one of the models was not available in the U.K.

“We noted Shell’s view that those results would be indicative of the fuel’s performance in other car models of the same make within the same vehicle ‘segment’ because they used the same engine, but we noted we had not seen evidence demonstrating that that was the case.

“We therefore only considered the substantiation provided with regard to the four models available in the U.K. We noted that tests were carried out nine times on each car, and that the results showed that only two cars achieved average fuel savings of at least 2%.

“We noted that the diesel fuel was tested on four cars, and five tests were carried out on each model, the results of which were that only one car achieved an average fuel saving of at least 2%.

“We noted Shell considered that because other organizations had used similar numbers of cars for tests relating to research on environmental issues, their own test methodology was consistent with best practice across the industry.

“However, we considered that in order to substantiate their advertising claim, Shell must provide evidence which demonstrated that at least 10% of vehicles in the U.K. would save one liter of fuel in every 50 liters fill-up when using Shell FuelSave fuels, and we therefore considered the test results for eight cars, only three of which achieved the claimed fuel savings, did not constitute an adequate level of evidence for the claim.” – **Jack Peckham**

TECHNOLOGY

‘Bisabolane’ Could Emerge as Bio-Based Diesel Blendstock - U.S. DOE Researchers

Researchers at the U.S Department of Energy (DOE)’s Joint BioEnergy Institute (JBEI) announced late last month that they’ve identified a potential advanced bio-based diesel fuel called “bisabolane,” which would involve enzymatic processing of sugars.

“Using the tools of synthetic biology, a JBEI research team engineered strains of two microbes, a bacteria and a yeast, to produce a precursor to bisabolane, a member of the terpene class of chemical compounds that are found in plants and used in fragrances and flavorings,” according to a JBEI press release.

“Preliminary tests by the team showed that bisabolane’s properties make it a promising biosynthetic alternative to [ASTM standard No. 2] diesel fuel,” according to the Institute.

One of the avenues being explored is sesquiterpenes, terpene compounds that contain 15 carbon atoms, according to JBEI. Diesel fuel typically contains 10 to 24 carbon atoms.

“Sesquiterpenes have a high-energy content and physicochemical properties similar to diesel and jet fuels,” JBEI researcher Taek Soon Lee said. “Although plants are the natural source of terpene compounds, engineered microbial platforms would be the most convenient and cost-effective approach for large-scale production of advanced biofuels.”

Lee, director of metabolic engineering at JBEI at the DOE-funded Lawrence Berkeley National Laboratory, told *Diesel Fuel News* more about the proposed scheme in an interview:

Diesel Fuel News: *Do the researchers have any preliminary notion yet about how to mass-produce bisabolane fuel?*

Lee: We are working on strain engineering to prepare robust producing strains that can achieve pilot scale (up to 300 liters) production of bisabolene, the precursor of bisabolane. This work will be a collaboration with the ABPDU (advanced biofuel process demonstration unit), a DOE facility to help research toward mass-production of biofuel.

Diesel Fuel News: *What exactly would be required for feedstock, to produce such fuel? In other words, what would the microbes need to “eat” to produce the final fuel? Heat? Power? Sunlight? Carbon dioxide? Sugar? Water? Something else (in addition to the E. coli-based material)?*

Lee: Microbes (*E. coli* and yeast) need a carbon source such as sugar for growth and biofuel production. Right now, we use glucose as carbon source, but we are also trying to produce bisabolene using saccharified biomass (or biomass hydrolysate).

Diesel Fuel News: *Is there any notion of the potential volume production of such a fuel? Today, diesel fuel is pro-*

duced in massive oil refineries (typically more than 100,000 barrels per day, sometimes up to 1 million barrels per day). These refineries are extremely cost-efficient (compared to all other types of alternative liquid fuels including ethanol and biodiesel) and occupy relatively small spaces of land. But would bisabolane require comparatively vast tracts of land (and water and sunlight), perhaps like the algae ponds proposed for certain types of biofuels?

Lee: No. Microbial fermentation does not need vast tracts of land (or water or sunlight). Fermentation facility is very similar to ethanol fermentation facility. It is still early to mention the potential volume production of this fuel.

Diesel Fuel News: *Is there any notion yet of when you will be able to give a rough cost estimate for producing bisabolane at large, commercial scale? Any notion of what would be a “typical” size for a bisabolane plant?*

Lee: We are not there yet, and it is still too early to give any estimation.

Diesel Fuel News: *Would this scheme involve a 100% replacement of diesel fuel, or could it involve blending bisabolane with conventional diesel fuel, at certain proportions?*

Lee: We expect blending approach would be more useful. Bisabolane has excellent cold weather property and pretty good combustion property, and most of all, since this compound looks very similar to the components of current diesel fuel, it will add a lot of advantages to the existing diesel fuel when it is blended to current diesel fuel.

We have not produced bisabolane to [sufficient] quantity to figure out the fuel properties of different blends with commercial diesel yet. So, it is still too early to say that it can replace diesel fuel 100%, but I believe it can easily be blended to at least 20-30% without any problem.

Research Goals

According to JBEI, once the researchers have completed studies on all the fuel properties of hydrogenated biosynthetic bisabolene, then they'll be prepared to carry-out an economic analysis that “takes into consideration production variables such as the cost and type of feedstock, biomass depolymerization method, and the microbial yield of biofuel.”

“We will also be able to estimate the impact of byproducts present in the hydrogenated commercial bisabolene, such as farnesane and aromatized bisabolene,” according to Lee.

Ultimately, the researchers “would like to replace the chemical processing step of bisabolene hydrogenation with an alkene reductase enzyme engineered into the E.coli and yeast so that all of the chemistry is performed within the microbes,” according to JBEI.

“Enzymatic hydrogenation of this type of molecule is a very challenging project and will be a long-term goal,” Lee says. “Our near-term goal is to develop strains of E.coli and yeast for use in commercial-scale fermenters. Also, we will be investigating the use of sugars from biomass as a source of carbon for producing bisabolene.” – **Jack Peckham**

Virgin, LanzaTech Ink Novel ‘Low-Carbon,’ Low-Cost Jet Fuel Deal

Virgin Atlantic airlines announced October 11 that it signed a development deal with LanzaTech to create a “low carbon” jet fuel that involves converting waste-gas-derived ethanol to all-hydrocarbon jet fuel molecules virtually identical to conventional petroleum jet fuel.

“This is a new route – alcohol to jet (ATJ) – which will be certified next through ASTM [standards group],” LanzaTech CEO Jennifer Holmgren told Hart Energy in an interview.

The finished fuel molecules are “identical or virtually identical to jet fuel, so it’s a ‘drop-in’ fuel, just like hydrotreated lipids. It could be blended into jet fuel at up 50% if no there are no aromatics, or 100% if it has aromatics,” she added.

Following initial test runs, “we are confident that we will have a facility with the capacity to produce fuel for commercial use by 2014,” Holmgren said.

The novel fuel would have “half the carbon footprint of the standard fossil fuel alternative,” according to Virgin.

“The ground-breaking partnership with LanzaTech represents a breakthrough in aviation fuel technology that will see waste gases from industrial steel production being captured, fermented and chemically converted using Swedish Biofuels technology for use as a jet fuel. The revolutionary fuel production process recycles waste gases that would otherwise be burnt into the atmosphere as carbon dioxide.

“Within two to three years, Virgin Atlantic plans flights with the new fuel on its routes from Shanghai and Delhi to London Heathrow as LanzaTech and partners develop facilities in China and India. The technology is currently being piloted in New Zealand, a larger demonstration facility will be commissioned in Shanghai this year, and the first commercial operation will be in place in China by 2014.

“Following successful implementation, a wider roll-out could include operations in the U.K. and the rest of the world,” according to Virgin.

LanzaTech estimates that its process “can apply to 65 % of the world’s steel mills, allowing the fuel to be rolled out for worldwide commercial use . . . this process can also apply to metals processing and chemical industries, growing its potential considerably further.”

Virgin Atlantic president Richard Branson added that “we were the first commercial airline to test a bio-fuel flight and we continue to lead the airline industry as the pioneer of sustainable aviation. This partnership to produce a next generation, low-carbon aviation fuel is a major step towards radically reducing our carbon footprint, and we are excited about the savings that this technology could help us achieve.

“With oil running out, it is important that new fuel solutions are sustainable, and with the steel industry alone able to deliver over 15 billion gallons of jet fuel annually, the potential is very exciting. This new technology is scalable, sustainable and can be commercially produced at a cost comparable to conventional jet fuel.”

Virgin Atlantic “will be the first airline to use this fuel and will work with LanzaTech, Boeing and Swedish Biofuels towards achieving the technical approval required for using new fuel types in commercial aircraft. A ‘demo’ flight with the new fuel is planned in 12 to 18 months,” according to the company. – [Jack Peckham](#)

Uhde Commissions Europe’s Largest Urea Plant; ‘AdBlue’ for Diesels

ThyssenKrupp Uhde announced October 13 what it termed as the successful commissioning of Europe’s biggest urea plant – 3,500 tonnes per day – built for Yara at Sluiskil, Netherlands, at a cost of €400 million (US\$551 million).

“Some of the urea it produces will not be used as fertilizer but as an aqueous urea solution to treat diesel exhaust [nitrogen oxides] fumes,” according to Udhe.

“This technology, which is known as ‘AdBlue,’ is now being sold at [retail fuel] service stations, for example, and is marketed by Yara under the name of ‘Air1.’ It enables the latest models of commercial [diesel] vehicles to achieve the

maximum permissible limit values specified in Euro-5 and in a few years time, Euro-6.

“The required feedstocks are ammonia and carbon dioxide [CO₂], which are both available at the site in Sluiskil. The urea plant will obviate the need to transport the ammonia and the CO₂ that is generated will be used in an environment-friendly manner.”

The technology was licensed by the Dutch company, Stamicarbon. ThyssenKrupp Uhde was responsible for the engineering, supply of all equipment and the construction of the plant on a fixed-price, turnkey basis, according to Uhde.

DISTILLATE MARKETS

IEA Cuts Oil Demand Forecast, Again

The International Energy Agency’s latest *Oil Market Report* (released October 12) once again trims its forecast for global oil demand in 2011 thanks to economic trouble signs and “significant downside risks.”

As a result, global oil demand for 2011 is now seen at 89.2 million barrels/day (b/d in), rising to 90.5 million b/d in 2012, according to IEA.

As for refining, “global crude runs estimates for third quarter (3Q) 2011 and 4Q 2011 are revised down by 50,000 b/d and 75,000 b/d respectively versus last month. Lower-than-expected Asian throughputs are partly offset by continued robust U.S. runs. Global [refinery] throughputs now average 75.5 million b/d in 3Q 2011 and 75.3 million b/d in 4Q 2011. Meanwhile, OECD [Organization for Economic Cooperation

and Development] refinery rationalization continues,” according to IEA.

By region, here is what IEA found in the latest oil demand trends:

North America: Demand fell 0.7% year-on-year in August, following a 2.7% decline in July. Gasoline (-2.5%) led the fall.

On the other hand, North American diesel and jet fuel/kerosene posted gains of 7.1% and 2.8%, respectively, “continuing a trend of relative middle distillate demand durability,” according to IEA.

International Monetary Fund (IMF) recently trimmed its GDP outlook for North America to 1.8% for 2011 and 2.0% for 2012, “but this represents a revision of only 0.1%

and 0.2%, respectively, to our [economic growth] assumptions,” according to IEA.

North American oil demand is revised downward by 30,000 b/d in 2011, to 23.5 million b/d in 2011, while 2012 demand is seen falling by 20,000 b/d, to 23.4 million b/d, according to IEA.

Europe: Demand increased 0.3% year-on-year in August, led by gains in LPG (+4.3%), diesel (+2.9%) and heating oil (+1.9%), according to IEA.

Those gains “more than offset declines in gasoline (-2.5%) and naphtha (-2.0%),” according to IEA.

The pick-up in European demand growth followed two months of declines averaging 2.6% year-on-year. S

The latest improvement in demand “may simply be due to accelerated seasonal filling of heating oil tanks at the consumer level, though it may also indicate a somewhat more supportive demand picture, particularly in France, Germany and Poland, as economies continue to expand,” according to IEA.

“We now see European demand declining by 190,000 b/d (-1.3%), to 14.4 million b/d in 2011, and falling 130,000 b/d (-0.9%), to 14.3 million b/d in 2012.”

Pacific: Demand grew by 2.7% year-on-year in August, led by residual fuel oil and naphtha. “The economic outlook has been revised up for 2011, with a stronger Japanese recovery, but revised down for 2012,” according to IEA. “GDP growth expectations are now 0.8% in 2011 and 2.9% in 2012.

“Oil demand continues to be buoyed by oil-fired power generation in Japan and, to a lesser degree, by petrochemical activity in Korea. These factors may diminish from second half 2012, though our forecast is revised up marginally by 10,000 b/d for both 2011 and 2012. We now see regional demand increasing 80,000 b/d (+1.0%), to 7.9 million b/d in 2011, and holding steady for 2012,” according to IEA.

AUGUST 2011	OECD Demand based on Adjusted Preliminary Submissions (million barrels per day / percent change per annum)							
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil	
	mmb/d	%pa	mmb/d	%pa	mmb/d	%pa	mmb/d	%pa
OECD N. America	10.60	-2.50	1.76	2.80	4.29	7.10	0.72	-15.60
USA	8.97	-3.10	1.56	4.50	3.69	7.30	0.22	-43.00
Canada	0.77	-0.80	0.10	-13.70	0.22	-1.50	0.33	5.60
Mexico	0.79	2.40	0.06	-5.90	0.33	5.60	0.09	1.40
OECD Europe	2.26	-2.50	1.36	0.60	4.37	2.90	1.63	1.90
Germany	0.49	3.10	0.20	-2.00	0.71	5.20	0.44	-0.20
UK	0.32	-9.30	0.33	1.40	0.45	-0.60	0.13	-5.30
France	0.21	3.60	0.16	0.60	0.69	4.30	0.29	18.20
Italy	0.24	-2.00	0.11	-2.10	0.46	5.00	0.10	3.80
Spain	0.14	-3.40	0.14	2.60	0.46	-1.70	0.13	-5.30
OECD Pacific	1.70	-1.30	0.60	-6.40	1.09	2.20	0.45	-6.80
Japan	1.10	-2.10	0.31	-10.80	0.39	-3.60	0.34	-8.00
Korea	0.21	-0.30	0.15	-6.20	0.30	3.50	0.10	-2.70
Australia	0.33	0.60	0.12	3.70	0.36	7.80	0.00	0.02
OECD Total	14.56	-2.40	3.73	0.40	9.75	4.60	2.80	-4.60

OECD Demand by Region / Source: IEA

Non-OECD: Oil demand grew by 2.7% year-on-year (+1.2 million b/d) in August, down from 3.6% growth in July. “Much of the slow-down stemmed from relatively weaker demand growth in China and Saudi Arabia,” according to IEA.

“Total August demand is estimated at 43.5 million b/d, while July levels have been revised down by 50,000 b/d, to 43.8 million b/d (+1.5 million b/d year-on-year),” according to IEA. Non-OECD Demand by Product/Source: IEA

“Gasoil, LPG and gasoline led product growth in August. At the regional level, growth in the FSU remained robust due to surging Russian demand while Asian growth moderated and the Middle East witnessed a rare monthly decline in year-on-year demand growth,” according to IEA.

China: Demand rose by 5.8% year-on-year in August as slower refinery runs outweighed higher product imports, according to IEA.

“Apparent demand in July was revised up by 50,000 b/d, putting growth for that month at 6.6%. August demand was led by year-on-year increases in gasoil (+6.5%), residual fuel oil (+10.6%), jet fuel/kerosene (+9.5%) and gasoline (+5.2%),” according to IEA.

“The monthly demand pattern fits with our view of moderating growth rates over the next 18 months as the economy slows. However, with GDP growth and demand growth expected to average 9.0% and 5.0% (+480,000 b/d), respectively, in 2012, the outlook still looks robust.”

Part of the demand growth slowdown “relates to easing auto sales in China,” according to IEA. “August data show car sales up 7.5% year-on-year, amid overall vehicle sales up just 3.3%. While these rates are stronger than previous month readings and long-term prospects for vehicle growth remain robust, they are still far lower than the 30+% growth in 2010.

“The expiry of government tax incentives, reduced availability of vehicle registrations in cities and higher gasoline prices have all contributed to the slowing. The National Development and Reform Commission (NDRC) cut prices for gasoline and diesel by 3% to 4% on October 9, but this was the first adjustment since April 2011.

“The responsiveness of domestic prices may increase as the NDRC has announced plans to shorten its adjustment mechanism for retail product prices from 22 days to 10 days, which would make them more sensitive to international crude prices.”

India: Oil demand rose by 2.7% in August, slightly slower than the 2.9% increase in July. “Growth was stable in gasoil (+6.3%) and gasoline (+4.3%) while LPG growth rose to +9.5%,” according to IEA.

Residual fuel oil, jet fuel/kerosene and naphtha demand all registered declines.

“Indian economic prospects are seen somewhat higher for 2011 and lower for 2012, with growth now expected at 7.8% and 7.5%, respectively,” according to IEA.

“Passenger car sales growth continued to slow from its rapid expansion in the first half of the year. August auto sales fell for the second month in a row, decreasing 10% year-on-year. Rising gasoline prices, which are formally deregulated, may be a contributing factor to the slowdown. Oil marketing companies [refiner-marketers] raised prices by \$0.11/liter in May and instituted a further \$0.07/liter price rise in September,” according to IEA.

Russia: Demand has shown little sign of slowing, growing by 10.4% year-on-year in August. “Gasoil and residual fuel oil demand continued to soar, growing by 20.9% and 30.5% year-on-year, respectively, even as we have cut eco-

NON-OECD: DEMAND BY PRODUCT (Thousand Barrels Per Day)							
	DEMAND			ANNUAL CHG (kb/d)		ANNUAL CHG (%)	
	JUN-11	JUL-11	AUG-11	JUL-11	AUG-11	JUL-11	AUG-11
LPG & Ethane	5,021	4,912	4,955	209	208	4.4	4.4
Naphtha	2,635	2,631	2,616	-19	-11	-0.7	-0.4
Motor Gasoline	8,392	8,455	8,383	285	284	3.5	3.5
Jet Fuel & Kerosene	2,665	2,750	2,772	44	62	1.6	2.3
Gas / Diesel Oil	13,766	13,522	13,451	547	566	4.2	4.4
Residual Fuel Oil	5,485	5,467	5,451	79	43	1.5	0.8
Other Products	5,904	6,037	5,885	388	0	6.9	0.0
Total Products	43,857	43,774	43,514	1,534	1,152	3.6	2.7

Source: IEA

nomical growth prospects on average by 0.4% for 2011 and 2012, to 4.3% and 4.1%,” according to IEA.

“This year’s demand growth has exceeded expectations based on income and may stem from a degree of end-user stock building. By contrast, the 2012 forecast is more in line with longer-term income-demand relationships.”

Saudi Arabia: Demand fell 3.5% in August, led by sharp declines in direct crude burning and resid, both for power generation.

However, “gasoline demand growth (+1.2%) also moderated. The decline may partly stem from reduced activity during Ramadan, which was centered on August this year rather than a more usual straddling of different months,” according to IEA.

“Economic assumptions for Saudi Arabia remain steady, but we have revised our demand outlook there down by 50,000 b/d for both 2011 and 2012. The outlook has also been cut for Syria by an average 40,000 b/d this year and next, based on the IMF’s assessment of negative GDP growth for 2011.”

Brazil: Demand fell by 0.8% year-on-year in July, weighed down by residual fuel oil (-15.6%), gasoline (-3.3%) and LPG (-0.9%). “By contrast, middle distillates posted strong growth, with jet fuel/kerosene and gasoil rising by 10.1% and 2.1%, respectively,” according to IEA.

“Economic prospects have been trimmed, with real GDP growth seen at 3.8% for 2011 and 3.6% for 2012. Nevertheless, demand is expected to grow at a still solid pace, +1.8% (+50,000 b/d) and +2.4% (+70,000 b/d), for the two years.”

Since October 1, Brazil cut the mandated anhydrous ethanol content in gasoline by 5% to a level of 20%, IEA noted.

“On the one hand, with overall ethanol (whose prices are high and set by the market) tightness likely to ease versus gasoline (whose prices are relatively fixed), the move may help revive total gasoline consumption, growth rates for which have fallen steadily. That said, efficiency gains will derive from the higher energy content of a gasoline pool containing less ethanol,” according to IEA.

Siemens, Shenhua Ningxia Team Up on Big CTL Diesel Project in China

San Francisco – Siemens is teaming up with Shenhua Ningxia Coal Group (SNCG) on a large coal-to-liquids (CTL) Fischer-Tropsch (FT) diesel plant in China – assuming that the government’s National Development and Reform Commission (NDRC) gives final approval.

In a presentation to the Gasification Technologies Council 2011 annual meeting here October 10, Siemens Fuel Gasification Technology chief technology officer Frank Hannemann described a project that would require up to 24 Siemens SFG-500 gasifiers, processing 2,056 tons per hour (tons/hour) of coal to make 2.8 million normal cubic meters/hour (Nm³/a) of syngas.

The coal tapped for the project contains 19% moisture, 11% ash, 23% volatiles and 47% fixed carbon, he explained.

According to a chart shown in the presentation, twin FT reactors would convert the shifted and Rectisol-cleaned syngas to about 8,448 tons per day (69,000 barrels per day [b/d]) of FT diesel, about 110 tons/hour (24,650 b/d) of FT naphtha and about 46 tons/hour (12,860 b/d) of liquefied petroleum gas.

The project schedule includes delivery of the process design package by end-2011, followed by gasifier delivery in mid-2013, and then end-2016 to start plant commissioning, he explained.

SNCG Profile

SNCG is 51% owned by Chinese coal giant Shenhua and 49% by the Ningxia government, with registered capital of US\$1.6 billion and total assets listed at in excess of \$9.4 billion by end-2009, he said. The company has more than 50,000 employees, producing more than 60 million tons per annum (t/a) of coal and targeting more than 100 million t/a of coal production.

India State Refiners Lost US\$4.3 Billion in FY 2Q 2011

India’s state-owned refiner-retailers – Indian Oil Corp, Bharat Petroleum Corp. and Hindustan Petroleum Corp. – racked up losses totaling US\$4.36 billion on sales of government price-controlled diesel, kerosene and liquefied

“Petroleum based gasoline requirements may rise by only 30,000 b/d to substitute for the reduced anhydrous ethanol, but this will put pressure on an already strained refining system and necessitate increased imports.” – **Jack Peckham**

In addition to the giant CTL project, other SNCG projects include the “NCPP II” methanol-to-polypropylene (MTP) project, yielding 500,000 t/a of product based on the Lurgi MTP process, and a synthetic natural gas (SNG) project, still in planning stages.

SNCG already operates two coal-to-methanol and dimethyl ether (DME) projects, as well as the “NCPP I” polypropylene plant currently at the pre-commercial production stage. That plant, tapping five Siemens gasifiers, is designed to produce 61 tons per hour (tons/hour) of polypropylene, 23 tons/hour of gasoline and 5 tons/hour of liquefied petroleum gas.

CPI Yinan SNG Project

Elsewhere on the China front, Siemens is participating in the China Power Investment Corp. (CPI) Yinan synthetic natural gas (SNG) project, he said.

For that project, Siemens is supplying eight 500-megawatt gasifiers and burners for a plant that would produce 2 billion normal cubic meters/hour (Nm³/a) of SNG in the first phase, eventually rising to 6 billion Nm³/a capacity in later phases.

The gasifiers are scheduled to be delivered in early 2013, with commissioning scheduled to start in mid-2014, he said.

Yet another potential China gasification project involving Siemens is the proposed 5.4 million-ton-per-annum expansion of the YiTai CTL project, he added.

Adding it all up, Siemens could grab orders for more than 100 new gasifier units in China including the NCPP projects, the SNG projects and CTL projects, he explained.

– **Jack Peckham**

petroleum gas (LPG) in fiscal second-quarter 2011 ended September 30.

According to an October 17 report from *Economic Times* (India), the three refiner-marketers lost Rs 7.06 (US\$0.14)

per liter on diesel, Rs 25.90 (US\$0.53) per liter on kerosene sold through the public distribution system and Rs 270.50 (US\$5.53) per 14.2-kilograms LPG cylinder supplied to domestic households for cooking purposes.

State-owned upstream oil firms including Oil and Natural Gas Corp (ONGC) bore roughly one-third of the loss on

fuel sales. The federal government agreed to give about Rs 15,000 crore (US\$3 billion) as a fuel subsidy and the rest was absorbed by the refiner-retailers, according to the report.

Baard Drops Ohio CTL Project; GTL Emerges in Settlement with Greens

Baard Energy announced October 14 that it will abandon its proposed “Ohio River Clean Fuels” coal/biomass to liquids (CBTL) project, with the result that lead financier Planck Trading Solutions instead will convert the former CBTL project to a much-lower-cost gas-to-liquids (GTL) scheme.

The switch from CBTL to GTL is partly the result of a negotiated lawsuit settlement over CBTL permit issues with Natural Resources Defense Council (NRDC) and the Sierra Club, as well as the emergence of relative cheap natural gas supplies, making GTL the more profitable option, Beard CEO John Beardson told *Gasification News*.

The settlement deal with Beard “likely stands as another nail in the coffin for the expensive and highly polluting [CTL] technology in the United States,” according to the NRDC.

“Coal to liquids technology has always been dirty and expensive,” said NRDC senior attorney Shannon Fisk. “Four years into this mess, the Beard facility has not been able to sort out its pollution permits or financing because making liquid fuel out of coal simply doesn’t work economically or environmentally. The public subsidies its developers sought shouldn’t pay for pollution. We have better choices.”

The Sierra Club and the NRDC mounted several legal challenges to the state of Ohio’s pollution permits issued to the facility. The green groups claimed the proposed plant would have led to “dangerous air pollution, water discharges, and global warming pollution.”

Baard Energy and the state of Ohio settled the permit fight “by agreeing to cease efforts to turn coal into liquid fuels. Beard plans instead to move to natural gas, eliminating more than 75% of the greenhouse gases that would have been associated with the project, as well as smog and mercury pollution that cause asthma, lung disease, heart disease,” according to the NRDC.

“In addition, the change closes what would have been a new market for Ohio’s highly sulfurous coal, some of the dirtiest in the nation. As the first coal-to-liquid refinery awarded pollution permits in the nation, the settlement is also a blow to the broader industry, undercutting any perceptions of economic viability.”

Sierra Club spokesperson Nachy Kanfer added that “while we do not support the new refinery plan and believe it is unnecessary no matter what feedstock it uses, this is a giant blow to coal in Ohio and the nation. We will continue to take on dirty coal plants in the Buckeye state and around the country.”

Ohio EPA was also a party to the settlement, being filed with the Ohio Environmental Review Appeals Commission.

Pursuant to the agreement, the NRDC and Sierra Club are moving to stay their pending legal challenges to the permits for Beard’s proposed coal-to-liquids facility while Beard and Ohio EPA work to modify those permits to remove coal as a feedstock and reflect the resulting emissions reductions.

“Assuming the modified permits reflect the agreement being filed today, NRDC and Sierra Club will then move to dismiss their appeals once the permits are modified,” according to the NRDC.

Baardson Interview

In an October 18 interview with *Gasification News*, Beard Energy’s Beardson told us that the settlement deal not only removes remaining legal obstacles to the project, but also dramatically reduces the project’s capital cost.

In both cases, the Fischer-Tropsch liquids (primarily diesel and jet fuel) plant would be 53,000 barrels/day, but the projected GTL capital cost (about US\$3.5 billion) is about half of the original CBTL cost (more than \$6 billion), he said.

The GTL plant site sits atop the booming Marcellus shale-gas field that stretches from Pennsylvania to West Virginia and part of Ohio. Also nearby is the Antrim shale-gas formation, Beard told us.

Florida-based Planck Trading Solutions is heading up the financing for the GTL project, tapping investors in India, Beard told us. More details on the investment might be made available at an upcoming press conference later this year, likely featuring an appearance by Ohio Gov. John Kasich (R), he suggested.

Crucial to paying-off the capex and ensuring a profit to the investors is a continuation of the unprecedented, historically wide price spreads between natural gas and crude oil in the U.S. market, Beardson explained.

Spot natural gas in the U.S. was being quoted at around \$3.60 per 1,000 cubic feet last week, while spot crude oil was trading at around \$85/barrel – a huge spread that is an historic anomaly in the U.S.

To avoid long-term price risk, the Ohio GTL project will need to lock-in a similarly huge price spread over many years to ensure project profitability, since the primary end-products (diesel and jet fuel) are likely to sell at par with petroleum-based jet and diesel.

Baardson told us that 10-year futures strips on natural gas and crude futures aren't as wide as today's gas-to-oil spot-price spreads, but nevertheless still look attractive, with outer-year markets relatively liquid even on natural gas. The project developers eventually will make a decision at some future date on locking-in those spreads in order to ensure project viability, he explained.

Besides shale-gas drilling potential around the plant site, natural gas pipelines are also within three miles of the GTL plant, he said. So, numerous options are available to lock-in gas supplies for the project, he said.

Showa Shell to Boost Sales of GTL Kerosene in Japan

Showa Shell announced October 18 that it will boost sales of its gas-to-liquids (GTL) kerosene fuel in Japan, touting lower odor emissions than conventional crude-based kerosene.

According to a report by *Nikkei* news service, the GTL kero would cost twice as much as petroleum-based kero, at 4,000 yen (US\$52) per 18-liter can, including delivery fees.

“Last season, the [Shell GTL] fuel was available in Tokyo and 12 other prefectures. But this season, the sales network

Converting the existing Ohio state air and water permits for the old CBTL project to the new GTL project would be relatively straightforward, since the air emissions actually will decline and the water handling won't change, he said. That permit-conversion process is expected to be completed in about four months, he estimated.

So, assuming the permits are finalized and the project financing is put in place, project construction could begin soon, expected to last from 30 to 36 months, he said. In the best case, that would mean the plant could start-up in late 2014 or early 2015, he estimated.

The plant would employ a combination of steam methane reforming and partial oxidation to convert natural gas to syngas, then employ the Syntroleum Fischer-Tropsch (FT) technology to produce the FT liquids, he said.

Besides the initial Ohio River GTL project, three or four other potential GTL projects could emerge, not necessarily in Ohio, he said. Pennsylvania, West Virginia and other areas with large surplus gas supplies would be candidates for potential future GTL projects, he added. – **Jack Peckham**

will be expanded to 37 prefectures next month. The fuel will be made available nationwide through the company's own website and Amazon.com's online shopping site as well,” according to the report.

“Showa Shell sees the market for GTL fuel growing amid rising awareness of energy conservation, particularly among urban households sensitive to kerosene's odor as well as among families with children and the elderly.”

Uhde Inks Mozambique CTL Deal with SGC Energia

ThyssenKrupp Uhde announced October 10 that it signed a license agreement allowing Portugal-based SGC Energia (SGCE) to employ Uhde's “Prenflo PDQ” coal-gasification technology for multiple coal-to-liquids (CTL) projects, starting initially in Mozambique.

SGCE will employ its proprietary “XTLH” Fischer-Tropsch technology to convert syngas to liquid fuels.

Under the deal, the first CTL plant will tap domestic coal from the Moatize mine in Mozambique, producing 9,500 barrels per day of FT liquids, targeted for 2016 start-up, according to Uhde.

“The Mozambique plant is one that will demonstrate the suitability of high-ash coal from these domestic mines as a

source for generation of highly valuable products,” according to Uhde.

SGCE is the investment arm of João Pereira Coutinho, a Portuguese entrepreneur touting the company's “XTLM” technology for producing liquid fuels from relatively low-value carbonaceous feedstocks.

ThyssenKrupp Uhde's “Prenflo” process is based on its proprietary Koppers-Totzek coal gasification process, which has been proven for more than a decade in the world's largest single-train integrated gasification combined-cycle (IGCC) power plant in Puertollano, Spain.

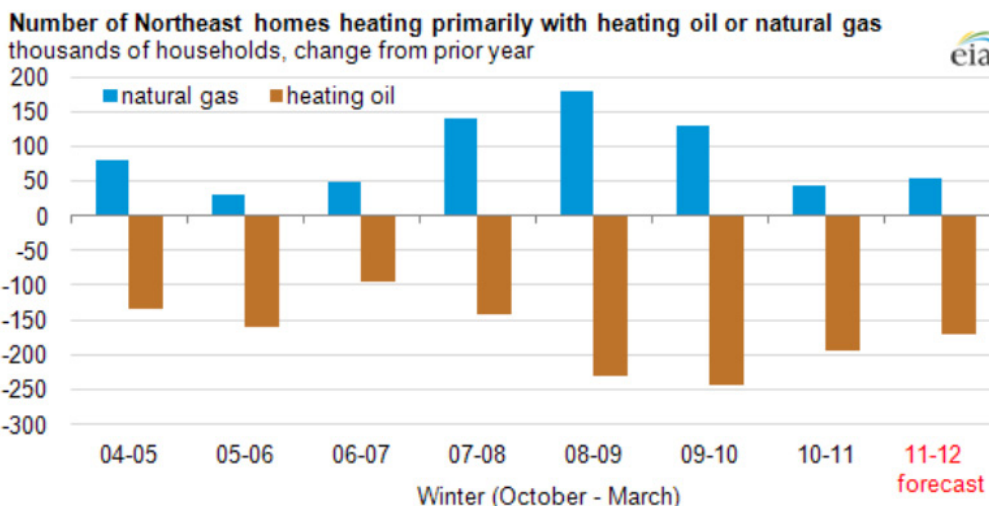
Switch from Heating Oil to Natural Gas Continues in U.S. Northeast

The U.S. Energy Information Administration (EIA) on October 12 released a report showing that homeowners in the U.S. Northeast are accelerating conversions from heating oil (gasoil) to natural gas, thanks to a huge and growing price difference between the two fuels.

According to the [report](#), “EIA projects that the average price paid by households in the Northeast this winter (October through March) for heating oil may be the highest ever, almost US\$27 per million [MM] Btu (\$3.71 per gallon) or more than double the projected average cost of natural gas (\$12.93 per MMBtu) delivered to households in the Northeast.

“The average price paid by households in the Northeast for heating oil more than doubled over the last seven winters, rising from an average of \$10.48 per MMBtu (\$1.45 per gallon) during the winter of 2003-04 to an average of \$24.39 per MMBtu (\$3.38 per gallon) during the winter of 2010-11. By contrast, the average household price of natural gas to households in the Northeast increased by only 7% over the same period, from \$11.49 per MMBtu to \$12.35 per MMBtu.

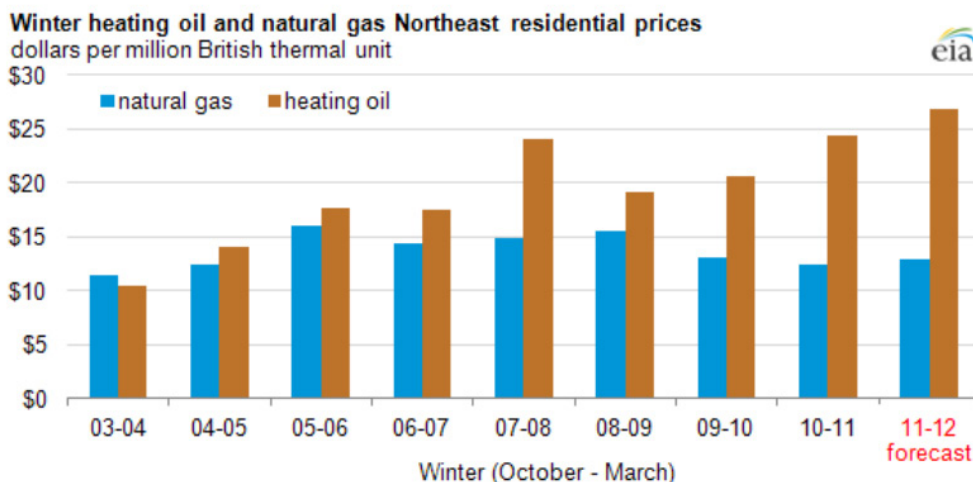
“According to EIA projections in the October 2011 Short Term Energy and Winter Fuels Outlook (STEO), residential heating oil prices this winter are expected to set a new winter record, averaging \$26.77 per MMBtu (\$3.71 per gallon),



Source: U.S. Energy Information Administration, [Short-Term Energy and Winter Fuels Outlook, October 2011](#). Household data from U.S. Census Bureau.
 Note: The Northeast Census Region includes Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania.
[Download CSV Data](#)

[U.S. Northeast Home Heating Fuel Prices](#) / Source: U.S. EIA

EIA projects record winter household heating oil prices in the Northeast



Source: U.S. Energy Information Administration, [Short-Term Energy and Winter Fuels Outlook, October 2011](#).
 Note: The Northeast Census Region includes Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, and Pennsylvania. Prices for the two fuels are converted into common units of dollars per million Btu by dividing the retail heating oil price by its energy content of 0.139 million Btu per gallon and the residential natural gas price by its energy content of 1.03 million Btu per thousand cubic feet.
[Download CSV Data](#)

[U.S. Northeast Household Heating System Choices](#) / Source: U.S.

an increase of 10% over last winter. EIA expects Northeast residential natural gas prices to rise by 5% from last winter to \$12.93 per MMBtu, still well below the peak \$15.96 per MMBtu during the winter of 2005-06.

“Heating oil prices largely reflect crude oil prices. For example, the average cost of crude oil to U.S. refiners increased

from an average of \$24 per barrel in 2003 to an average of \$99 per barrel in 2011.

“Natural gas wellhead prices, however, which rose between 2003 and 2008, have fallen in recent years, in part due to the dramatic growth in natural gas production from unconventional shale gas resources. The estimated average natural gas wellhead price in 2011 of \$3.85 per MMBtu is 19% lower than the \$4.75 per MMBtu average in 2003.

“Growing price differences in the Northeast between heating oil and natural gas appear to have affected consumers’

Light-Duty Diesel Demand Growth Outstripping Gasoline Growth in India

Total demand for diesel fuel in India has for many years exceeded that of gasoline. But strong growth in the diesel private car fleet in recent years has now resulted in the demand growth curve for diesel outstripping that of gasoline for the first time in 15 years.

According to an October 12 report by the *Times of India*, “more and more people [are] opting for diesel cars to take advantage of the Rs 26 [US\$0.53] a liter gap” between the retail price of diesel and gasoline.

“From less than a quarter in 2005-2006, the share of diesel [light] vehicles has risen to nearly half of car sales now,” up from 10% only a few years ago in the Indian market, according to the report.

As a result, “diesel consumption by private vehicles has exceeded consumption by the public transport and agricultural sectors. Clearly, consumers are ignoring the Rs 1 lakh [US\$2,040] to 1.25 lakh [US\$2,550] premium on diesel cars since this is more than made up by the lower running cost. The government deregulated petrol prices in June 2010 but continues to keep diesel prices artificially low.

“If diesel was to be deregulated now, its price would rise by Rs 7.76 [US\$0.16] per liter in Delhi but still retain the price advantage against petrol due to lower taxes.”

Euro-5 Fuels Production Expanding at Bosnian Refinery

The first phase of a just-completed upgrade and expansion project at the Brod refinery in Republika Srpska (Bosnia) will enable the production of Euro-5 (10 parts-per-million sulfur) gasoline starting next year.

According to an October 12 report from *RIA Oreanda* news service (Russia), crude capacity at the refinery has jumped to 3 million tonnes per year (from 1.2 million tonnes previously), thanks to the expansion project.

Once the full upgrading project is complete in 2014-2015, the refinery will be able to produce “all kinds of oil-products in accordance with Euro-5 standard,” according to the report.

selection of heating equipment. Since the winter of 2003-04, the number of households relying primarily on heating oil has declined, and conversely, the number of Northeast households relying mainly on natural gas heating has been going up.

“Between the winters of 2003-04 and 2010-11, the number of Northeast households using natural gas heating increased by 651,000 (from 10.14 million to 10.80 million), while the number of households using heating oil fell by 1,197,000 (from 6.88 million to 5.68 million).”

Soaring diesel consumption “has prompted the finance ministry to revive the proposal to free diesel pricing, even though it looks improbable at this point on account of high inflation and the forthcoming Uttar Pradesh [voting] polls,” according to the report.

According to Oil Ministry data cited in the report, India’s gasoline consumption in recent years has posted a compound annual growth rate of 5.6% against 2.5% for diesel. But from April to August 2011, India’s gasoline growth rate moderated to 5% against 5.3% for diesel, according to the report.

One reason for recent strength in diesel fuel is growth in sport utility vehicle sales, which are mostly diesel-powered, according to the report.

Diesel generator-set consumption in India also had grown sharply since the global decline in crude oil prices in 2008, according to the report. But a more recent improvement in grid power availability has undercut generator-set diesel demand in India, according to the report.

Euro-5 diesel is already available in Bosnia and Herzegovina, so the latest refinery upgrade will add Euro-5 gasoline to the local market, the report noted.

“Already in 2012, 290,000 tonnes of Euro-5 standard gasoline will be produced. This amount of fuel will be enough to fill up over 7.5 million cars,” according to the report.

“At the second stage of refinery reconstruction in 2012-2014, it is envisaged to construct a new isomerization unit enabling the refinery to produce all the gasoline in accordance with requirements of Euro-5 standard; to install the hydro-cracking complex – all diesel fuel shall conform to

Euro-5 – and sulfur-recovery unit (hydrogen-sulfide utilization). As a result, by 2015, refining [conversion capacity] depth shall be increased from the current 73% up to 83%, and the light products output shall reach 68%.

“Within the period from 2011 to 2014 the [Zarubezhneft refining] company is planning to invest in refinery more than €500 million [US\$693 million],” according to the report.

Market Report: ULSD Futures, Spot Prices Mostly Rise

Ultra-low sulfur diesel (ULSD) spot and futures prices in major markets mostly rose week-over-week by late Friday on stronger demand in the U.S. and slipping gasoil supplies in Europe.

New York spot ULSD was trading at \$3.06/gallon (/gal) late Friday, up a penny from the prior week, while New York spot heating oil was going for \$3.02, up \$0.02/gal from the prior week. Distillate prices similarly strengthened in the U.S. Midwest thanks to strong harvest-cycle diesel demand in the farm belt.

November ULSD at NYMEX was trading at \$3.04 late Friday, down about two cents from the prior week, while November heating oil (gasoil) at NYMEX was trading at just under \$3.03, up nearly two cents from the prior week.

In Europe, Rotterdam spot ULSD was trading at \$3.23, up about \$0.01 from the prior week, while ICE gasoil futures were at \$3.06, up about \$0.02/gal from the prior week. Oil traders quoted by *Platts* blamed the price rise on a reduction of Russian gasoil exports, plus the impact of strong German demand for ultra-low-sulfur heating oil, while a separate report from *Reuters* quoting the latest *Euroilstocks* data cited a decline in European middle distillate production and stocks last month, blamed on backwardation.

In Asia, the benchmark 0.5% sulfur Singapore gasoil spots were trading at just under \$2.95 up \$0.05 from the prior week, while Korea spot ULSD was trading at \$2.99, up about \$0.05/gal from the prior week.

PCI Index Falls

Meanwhile, the latest U.S. diesel-oriented Ceridian-UCLA Pulse of Commerce Index (PCI), issued October 12, fell 1.0% in September on a seasonal and workday-adjusted basis, following a 1.4% decline in August and a 0.2% decline in July.

Ed Leamer, chief economist for the PCI and director of the UCLA Anderson Forecast, said: “With the continued weakness in September, the PCI-based forecast for third quarter GDP growth is zero.”

Over the past three months, compared to the prior three months, the PCI declined at an annualized rate of 4.3%. The rate of decline in the third quarter has been exceeded only in the deep recession of 2008/09, and tied only once outside of recessions, in March 2000.

On a year-over-year basis, the PCI was down 0.2% in September 2011. “Businesses appear to be unwilling to restock for a potentially vibrant holiday season at the same time as normal and they are planning to ramp up inventories late this year, if and when the sales start to materialize,” Leamer said.

U.S. ULSD Output, Stocks Fall

On another front, the latest U.S. Energy Information Administration (EIA) weekly distillate survey showed that U.S. refiner ULSD output and stocks both declined (see chart).

U.S. Distillate Fuel Oil (Diesel) Production, Stocks, Imports, Downgrades						
Production (x 1,000 barrels/day)	9/9/2011	9/16/2011	9/23/2011	9/30/2011	10/7/2011	10/14/2011
<=15-ppm sulfur ULSD	3,949	3,928	4,078	4,034	3,919	3,876
>15 to 500-ppm sulfur	198	179	148	183	200	193
>500-ppm sulfur	346	365	333	450	294	310
Stocks (x 1,000 barrels)						
<=15-ppm sulfur ULSD	106,445	106,015	106,589	107,047	101,448	98,180
>15 to 500-ppm	10,163	10,011	10,279	9,756	13,275	13,243
>500-ppm	41,872	41,580	40,810	40,131	39,281	38,317
Imports (x 1,000 barrels/day)						
<=15-ppm sulfur ULSD	122	105	130	146	52	95
>15 to 500-ppm sulfur	0	41	0	0	0	0
>500 to 2,000-ppm	32	11	20	62	65	12
Exports (x 1,000 barrels/day)	745	881	881	881	881	912

Source: U.S. EIA

As for diesel retail price trends, EIA’s latest fuel price survey showed that the average U.S. nationwide retail diesel fuel price jumped \$0.08, to \$3.80/gal.

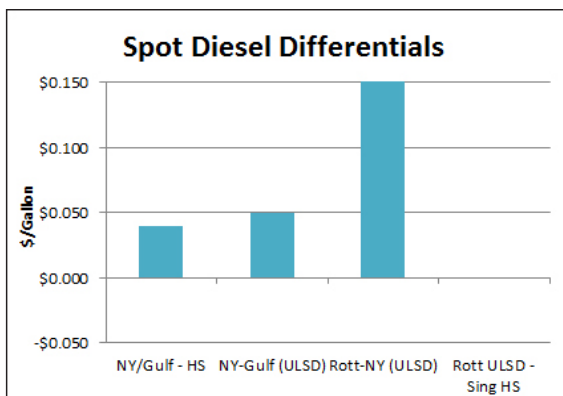
Diesel retail averages were up across all the major U.S. regions, with the West Coast seeing the largest increase of \$0.10/gal, to reach \$4.01/gal.

The U.S. Midwest saw the next largest increase at just over \$0.08. The U.S. East Coast and Gulf Coast saw almost identical increases of about \$0.075, to put prices at \$3.82 and \$3.73, respectively. The U.S. Rocky Mountains saw the smallest retail diesel price increase of almost \$0.06, reaching \$3.89/gal. – **Jack Peckham**

Distillate Watch

Key Distillate Prices (\$/Gal) October 21, 2011		
New York	ULSD	High Sulfur
Spot	3.060	3.020
Houston		
Spot	3.010	2.980
Chicago		
Spot	3.080	--
Los Angeles	EPA ULSD	CARB ULSD
Spot	3.110	3.13
Rotterdam		
	10 ppm	50 ppm
Spot	3.228	n/a
Singapore		
Spot		2.948
Futures	ULSD	High Sulfur
NYMEX	3.044	3.027
ICE		3.063
US Retail	3.80	3.47

Pricing Sources: Dow-Jones, EIA, Hart Publications



Source: EIA Oil Market Report

TRANSPORT NEWS

Peugeot Touts ‘World’s-First’ Diesel Electric Hybrid at Commercial Launch

Peugeot announced October 19 the commercial launch of sales of the “world’s first” diesel-electric hybrid passenger vehicle (the “3008 Hybrid4”) in Europe.

As part of its Frankfurt motor show announcements, Peugeot bragged that “by launching the world’s first diesel hybrid vehicle in the second half of 2011, Peugeot is offering an exclusive range in terms of environmentally-friendly functionality and driving pleasure.

“On the 3008 Crossover, the hybridization of a 2.0 [version] ‘HDi FAP’ diesel engine developing 163 brake horsepower [bhp] driving the front wheels and an electric motor developing 37 bhp on the rear axle, can reconcile a new driving experience, through four-wheel drive, a maximum output of 200 bhp, a ‘zero emissions vehicle’ mode, and an average fuel consumption of 3.8 liters per 100 kilometers (74.3 miles

per gallon) with 99 grams per kilometer of CO₂ [carbon dioxide], down 35% on an internal combustion engine with a similar power output,” according to the company.

Earlier this year, Peugeot launched sales of the “508” and the “308” micro-hybrid (stop-stop) system paired with its “HDi” diesel engine. That system “reduces fuel consumption by nearly 15% in urban drive cycle,” according to Peugeot.

Now, in the second half of 2011, Peugeot is launching the “3008,” the “5008” and “Partner” models with “e-HDi,” which combines the 1.6-liter, Euro-5 HDi diesel engine and a reversible-alternator which provides engine stop-start hybrid mode, “supplemented by a braking energy recovery system and hybrid battery that delivers additional power at start-up,” according to Peugeot.

VW to Launch 'New Beetle' Including Diesel Version for U.S. 2012 Market

Volkswagen on October 21 announced the launch of the "third generation" of the iconic "New Beetle" car for Europe and North America, including a 2.0-liter TDI (diesel) version for the North American market starting in mid-2012.

"Two additional engines are now also available in the completely redesigned two-door car," according to VW. In addition to the base gasoline engine, three other gasoline powertrains – the 1.2 TSI (77 kilowatts [kW]), the 2.0 TSI (147 kW) and the 1.4 TSI (118 kW) – plus the diesel 6 TDI (77 kilowatts) are new to the European market, according to VW.

What's more, "we're glad to tell you that VW will offer the 2.0 TDI (140 horsepower) version of the Beetle in North

America," VW spokesman Markus Arand told *Diesel Fuel News* on October 21. "Delivery will start approximately in mid-2012."

For the European market, VW will offer its "most fuel-efficient engine" – the 1.6-liter TDI – which consumes 4.3 liters of diesel per 100 kilometers.

Various versions of the "New Beetle" will first be introduced in the USA and Germany this month, and in upcoming weeks in most neighboring European countries, according to VW.

New MHI Bulk-Carrier Diesel Ship Cuts CO₂ by 25%

Mitsubishi Heavy Industries (MHI) announced October 14 that it has developed a new diesel-powered bulk carrier ship that enables a reduction in carbon-dioxide (CO₂) emissions by about 25% compared with conventional bulk carriers.

"As the first commercial application of the new design, MHI will provide its conceptual design and green technologies to three grain carriers to be built for Archer Daniels Midland Co. (ADM) of the U.S.," according to the company.

"MHI's new bulk carrier design adopts the company's proprietary Mitsubishi Air Lubrication System (MALS), which reduces frictional resistance between the vessel hull and seawater using air bubbles produced at the vessel bottom, along with high-efficiency hull form and enhanced propulsion system."

Sumitomo Corporation of Japan has received the order for the ship construction from ADM, and Oshima Shipbuilding Co. of Nagasaki was selected to build the ships.

"Besides the MALS, which uses blowers to create air bubbles under the vessel bottom, the three grain carriers will

also feature a newly designed bow shape that will reduce wave-making resistances," according to MHI.

"For propulsion, the ship adopts a system to effectively convert the main engine power into propulsion power by positioning fins forward of the propellers and placing particular grooves in the propeller boss cap.

"MHI developed the MALS as a key measure to reduce CO₂ emissions from ships. ADM's ships will be the first case in which MHI provides the system to another shipbuilder."

The three grain carriers will be 95,000 deadweight tonnage (DWT) vessels: 237 meters (m) in length, 40 m in width, and 12.5 m in designed draught. "The shallow draught of the ships facilitates the pursuit of energy savings and CO₂ -emission reduction efficiency by MALS," according to MHI.

Delivery of equipment related to MALS system from MHI is slated for 2014.

MAN Unveils €400-Million Truck Production-Expansion Scheme for Latin America

MAN announced October 21 that it is planning the largest investment program in its 30-year history, with more than €400 million (US\$553 million) going into expanding Latin America truck production capacity, as well as in research and development between 2012 and 2016.

The MAN brand, which is set to be launched in Latin America from 2012, will get its own assembly line at Resende, Brazil, for heavy trucks (typically diesel-powered) boasting 400 horsepower or more.

The investment also will be used for expanding the range of products offered by MAN Latin America and developing new segments of the market.

Roberto Cortes, President of MAN Latin America, announced the investments at a meeting with Brazilian President Dilma Rouseff. MAN Latin America is using its own funds to finance the investment.

Georg Pachta-Reyhofen, MAN SE CEO said the new investment plan represents "a logical continuation of the excel-

lent business performance in Brazil and will prove worthwhile in a market that offers further potential for growth.”

At its plant in Resende in the south of state Rio de Janeiro, MAN Latin America produces trucks in the “Constellation” (13-57 tons), “Worker” (13-31 tons), and “Delivery” (5-9 tons) ranges as well as bus chassis in the “Volksbus” series.

Cat Wins European Commission OK for MWM Buyout

Caterpillar announced October 19 that the European Commission has approved Cat’s €580-million (US\$800-million) acquisition of MWM Holding from 3i and funds managed by 3i.

“Following the acquisition of MWM, a leading global supplier of sustainable, natural gas and alternative-fuel engines, Caterpillar will significantly expand customer options for sustainable power generation solutions,” according to Cat.

Cat CEO Doug Oberhelman added that “the MWM business is a natural complement to our longstanding diesel and gas powered generation business, and the integration of MWM will result in important synergies leveraging the two companies’ existing product ranges, advanced engine technologies, research and development resources, manufacturing, distribution and customer support capabilities.”

Tognum Unveils Irregularities in Agent Sales Contracts Involving MTU-Asia

Tognum announced October 17 that an internal investigation of agent contracts with Asian sales partners of its MTU Asia division has turned up irregularities.

The irregularities “are under ongoing investigation of a forensic team of Ernst & Young by order of Tognum AG for several months,” according to the company.

According to the company, that investigation report is expected to be delivered and then discussed by the Tognum board later this month.

Daimler and Rolls-Royce recently completed their joint US\$4.7-billion buyout of Tognum, which produces diesel engines and gas turbines for heavy-duty applications.

Rotterdam Moving Toward Massive ‘Cold Ironing’ for EU Diesel Barges

GE Energy announced October 11 that it has now installed 120 shore-power (“cold ironing”) connections for giant inland waterway barges (typically diesel-powered) at the giant Port of Rotterdam.

In a pilot project, the shore-power connections have been installed in the Maashaven area of the Port, supplied from 22 “harbor enclosures” custom made to provide secure power supplies in the busy dockside locations, according to GE

At that plant, the company currently has a production capacity of up to 82,000 trucks and bus chassis per year.

“MAN Latin America has already led the Brazilian market for trucks weighing five tons or more for eight years in a row and is currently in pole position, with a market share of over 30%,” according to the company.

The Commission clearance was the “last major regulatory requirement needed for the acquisition to be completed, and the transaction is expected to close before year end,” according to Cat.

“MWM draws on more than 135 years of experience in the development and optimization of combustion engines for natural gas, special gases and diesel,” according to Cat. “MWM will become part of Caterpillar’s Electric Power Division, which supplies natural gas and diesel generator sets and integrated power systems involved in the generation, control and supply of electricity,” according to the company.

The revelation is especially embarrassing to the buyout partners since Daimler itself settled a U.S. Justice Department bribery scandal complaint last year.

Asked for comment on the Tognum issue, Daimler told *Diesel Fuel News* on October 21 that “we expect that Tognum will pursue this matter with extraordinary diligence. Compliance is of utmost importance for Daimler.”

– Jack Peckham

“In addition to the components and circuits necessary to ensure secure and safe power supplies, the stainless steel enclosures are equipped with meters, which can be read remotely, allowing users to monitor their energy costs in real time and encouraging efficient energy use,” according to GE.

Ultimately, the Port of Rotterdam “wants to encourage all vessels to use onshore connections as their main or sole source of power while at dock. When completed, the onshore power supply project will provide connections for up to 5,000 boats, supplied from approximately 800 dockside cabinets,” according to GE.



Cold Ironing at Rotterdam / Source: GE

Daimler to Offer DDC Powertrains under ‘Detroit’ Brand

Daimler Trucks North American (DTNA) announced October 17 that it is renaming its Detroit Diesel Corp. (DDC) subsidiary engines and powertrain components to the “Detroit” brand.

“Based on the existing Detroit Diesel brand, the ‘Detroit’ brand will encompass all powertrain-related truck components,” according to DTNA. “These include the state-of-the-art DD13, DD15, and DD16 diesel engines, which comply with the current U.S. Environmental Protection Agency 2010 emissions standards in the U.S. These engines cover a broad performance spectrum ranging from 350 to 600 horsepower.”

The “Detroit” brand powertrain components will be available across the entire DTNA product range, including Freightliner Trucks, Western Star trucks, Freightliner Custom Chassis, and Thomas Built Buses.

Other truck producers such as Pierce and Van Hool will also be relying on the powertrain technology of Detroit brand products, according to DTNA. What’s more, “in the course of the coming year, DTNA will present a whole series of new products from the ‘Detroit’ product family.”

MAN Wins Euro-5 Diesel, Natural Gas Engine Deal in Russia

MAN Truck & Bus announced October 20 that it won a contract to deliver 2,188 engines to the Russian bus manufacturer LIAZ (Likinski Awtobusny Zawod), a subsidiary of the GAZ Group, Russia’s biggest automobile company.

“The order is valued in the high double-digit million euros and comprises a range from efficient [Euro-5] diesel engines to natural-gas engines,” according to MAN.

“The engines will operate mainly in city busses in the Russian metropolises of Moscow and St. Petersburg as well as in other Russian cities. Approximately half the engines ordered by LIAZ have already been delivered and the order will be completed by the end of the year.”

“In MAN’s Euro-5 and natural-gas-powered engines, LIAZ has selected drive technology that goes easy on the climate for clean passenger transport,” said Lars Himmer, Managing Director of MAN Truck & Bus in Russia.

The Russian manufacturer LIAZ is a long-standing business partner of MAN Truck & Bus, having equipped 1,050 of its vehicles with MAN engines between 2007 and 2010.

This new order for 2,188 engines “is another important step for MAN Truck & Bus on the way to establishing itself on the Russian market, not only as a commercial vehicles manufacturer but also as a provider of diesel and gas-powered engines for trucks and buses,” according to the company.

NHTSA Orders Recall of U.S. Mercedes Diesel Cars for Fuel-Filter Leak

The U.S. National Highway Traffic Safety Administration (NHTSA) on October 17 announced a recall of 2011 model-year Mercedes-Benz diesel cars because of a faulty fuel filter that could leak and potentially cause fires.

The diesel fuel filter “may leak from the area around the heating component” which could “create the potential for a crash” if fuel is spilled on the highway, according to the NHTSA.

Also, fuel leakage “in the presence of an ignition source could result in a fire,” according to NHTSA. Mercedes-Benz is contacting the affecting vehicle owners to replace the diesel fuel filter free-of-charge, according to the NHTSA.

Chrysler Seen Expanding Diesel Engines in U.S. Vehicles


Chrysler plans to expand diesel engine offerings to “most” of its large vehicles starting with the 2013 Jeep Grand Cherokee, according to an October 18 report from *AutoGuide.com*.

“The big Jeep will be followed by a diesel powertrain option for most of the company’s large vehicles,” according to the report. “Chrysler predicts that compared to global diesel sales that made up 8% of total production in 2009, the [North] American automaker will increase that number to 14% by 2014.”

The report also quoted Chrysler CEO Sergio Marchionne as saying that the 55 mile-per-gallon corporate average fuel economy (CAFE) standards coming to the U.S. in 2025 will force the company to offer electric hybrids in addition to diesels.

“I have no other way of getting to 2025 numbers than by going to hybrids,” Marchionne was quoted as saying.

The first of these hybrids set to arrive is believed to be the Chrysler 300 Hybrid, which is rumored to launch in 2013, according to the report.



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