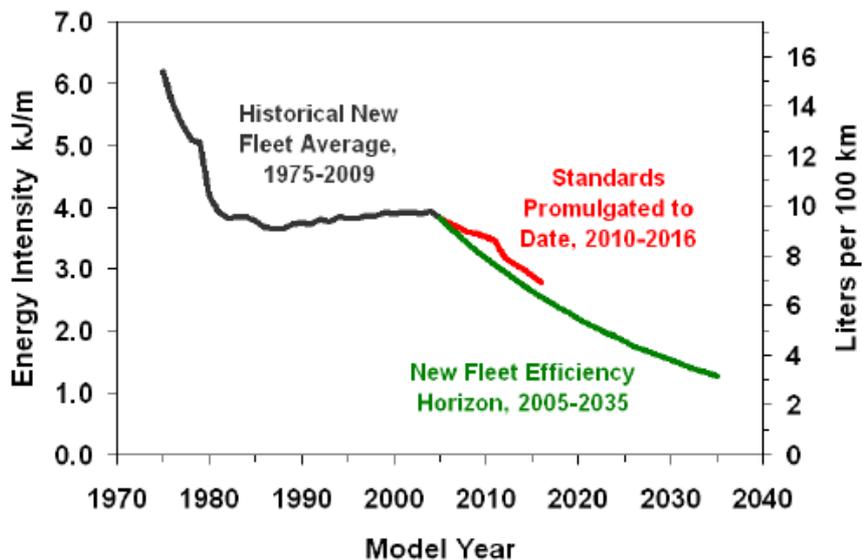


# AMFI Newsletter



The AMFI Newsletter is prepared for the members of the Implementing Agreement on Advanced Motor Fuels of the International Energy Agency (IEA/AMF).

The AMFI releases four electronic newsletters each year, with recent news on advanced motor fuels, vehicles, energy and environmental issues in general. The AMFI Newsletter is available online at:

[www.iea-amf.vtt.fi](http://www.iea-amf.vtt.fi)

Development of gasoline and diesel engines, hybrid drive options (grid-free), lightweight steel and other material and design solutions could triple the U.S. new fleet fuel economy by 2035. Source: DeCicco, J. A Fuel Efficiency Horizon for U.S. Automobiles, September 2010 ([energy.umich.edu](http://energy.umich.edu)).

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## GENERAL INTEREST

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### GHG and fuel efficiency standards for trucks and buses in the U.S.

The U.S. EPA and the U.S. DOT (Department of Transportation) have announced standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses. This program is projected to reduce GHG emissions by about 250 million metric tons and save 500 million barrels of oil over the lives of the vehicles produced within the first five years of the program.

New standards are proposed for three categories for models of years 2014 to 2018:

- For combination tractors, a reduction of up to 20% reduction in CO<sub>2</sub> emissions and fuel consumption.
- For heavy-duty pickup trucks and vans, a 10% reduction for gasoline vehicles and a 15% reduction for diesel vehicles. The reduction is 12 and 17% respectively, if accounting for air conditioning leakage.
- For vocational vehicles, up to a 10% reduction in fuel consumption and CO<sub>2</sub> emissions.

With the potential for significant fuel efficiency gains (7-20%), drivers and operators could expect net significant savings over the long term. Vehicles with lower annual miles would typically experience longer payback periods, up to four or five years, but would still enjoy cost savings. The innovative technologies fostered by this program would also yield economic benefits, enhance energy security, and improve air quality. New technologies include widespread aerodynamic improvements and tire rolling resistance, as well as engine and transmission upgrades.

The EPA and the NHTSA are providing a 60-day comment period that begins when the proposal is published in the Federal Register. As part of the process of this proposed rulemaking, NHTSA has prepared a draft Environmental Impact Statement (EIS) for its proposed fuel efficiency standards. *Source: U.S. EPA News release, 25 October 2010 ([yosemite.epa.gov](http://yosemite.epa.gov)).*

*Editorial: So far, only Japan has established fuel efficiency requirements for heavy-duty vehicles.*

### Renewable fuel regulations in Canada

In Canada, the quantity of renewable fuel must be at least 5% of the volume of the gasoline pool and 2% of the volume of the diesel and heating distillate oil pool according to Renewable Fuels Regulations pursuant to the Canadian Environmental Protection Act, 1999. The gasoline requirements and trading system come into force on 15 December 2010. The date for distillate requirements has not been set. The government of Canada is committed to reducing Canada's total 2005 GHG emissions by 17% by 2020. *Source: Canada Gazette, Vol. 144, No. 18. 1 September 2010 ([www.gazette.gc.ca](http://www.gazette.gc.ca)).*

## GASEOUS FUELS

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### LNG field testing with Volvo trucks

In Sweden, field testing with Volvo trucks that can run on LNG is carried out by transport companies DHL, Götene Kyltransporter and Renova. At the same time, Sweden's first filling station for LNG will open at the Stigs Center in Göteborg. The facility is a collaborative project between Volvo Trucks, FordonsGas Sverige and Göteborg Energi. Methane becomes liquid when it is cooled down to -160 °C. According to Volvo, trucks running on LNG combined with methane diesel technology have an operating range of 500 to 1000 km depending on driving conditions. This is twice the operating range of methane diesel vehicles running on CNG. *Source: Volvo Trucks, Press Release, 20 October 2010 ([www.volvotrucks.com](http://www.volvotrucks.com)).*



*Volvo FM truck fuelled with LNG. Photo courtesy of Volvo Trucks ([www.volvotrucks.com](http://www.volvotrucks.com)).*

## **LNG tractors to California Cartage**

In the U.S., Cargotec has delivered 12 Kalmar Ottawa terminal tractors powered by LNG to the California Cartage Company. These tractors meet 2010 California Air Resources Board (CARB) standards for off-road vehicle emissions and improve the performance of equivalent diesel-powered units. California Cartage has 50% of its tractor fleet running on LNG. *Source: Cargotec Corporation, Trade Press Release, 28 October 2010 ([www.cargotec.com](http://www.cargotec.com)).*

## **Wärtsilä's engines for LNG carriers**

Wärtsilä will supply its flexible gas propulsion solution for a series of new LNG carriers to be built at the Samsung Heavy Industries shipyard in South Korea. With the Wärtsilä 50DF engines, the ships can meet the IMOs Tier III emission requirements. Wärtsilä's flexible dual-fuel technology was introduced in 2006 for LNG carriers. The engines can be operated on natural gas, heavy fuel oil (HFO), biofuels or marine diesel oil, or run in fuel sharing mode. The same lube oil can be used regardless of the type of fuel. When operating on gas, emissions are minimised and allow the vessel to meet the IMOs Tier III standard without e.g. EGR or SCR units. According to Jaakko Eskola, the vice-president of Wärtsilä Ship Power, power efficiency of the Wärtsilä 50DF engine in gas mode exceeds 49%. Before this order, 36 vessels in operation were powered by Wärtsilä 50DF engines, while engines for an additional 20 vessels are awaiting delivery. *Source: Wärtsilä Corporation, Press Release, 8 September 2010 ([www.wartsila.com](http://www.wartsila.com)).*

Wärtsilä has also signed a contract with Tarbit Shipping of Sweden to convert a product tanker to LNG propulsion, and to supply the ship with a Wärtsilä LNGPac system for the safe and convenient storage of LNG onboard. This is the first order for a Wärtsilä LNGPac system. The product tanker 'Bit Viking' is operated by Statoil along the Norwegian coastline, and the conversion will enable the vessel to qualify for lower NO<sub>x</sub> emission taxes under the Norwegian government's NO<sub>x</sub> funding scheme. *Source: Wärtsilä, Press Release, 31 August 2010 ([www.wartsila.com](http://www.wartsila.com)).*

## **Breakthrough for methane hydrate**

The U.S. Department of Energy's National Energy Technology Laboratory (NETL) has developed a process and related technology to utilise natural gas and methane hydrate energy resources. Conventionally, natural gas is cooled and compressed to reduce its volume for transport as either compressed natural gas (CNG) or liquefied natural gas (LNG). NETL researchers have found a way to rapidly and continuously form synthetic hydrates of natural gas using just water and methane, with much less pressure and cooling than are required to liquefy it. With this technology, future operators will have an alternative method for storing and transporting natural gas. While not as energy-dense as LNG or CNG, the production of methane hydrate using this method will require less refrigeration, less pressure, and less time than either LNG or CNG production.

Gas hydrates retain large amounts of methane – one cubic meter of solid hydrate can produce 164 cubic meters of methane. NETL researchers believe the new process will significantly reduce the production, transportation, and storage costs associated with current LNG and CNG processes while enhancing and making more efficient use of natural gas from stranded resources. *Source: NETL News Release, 25 August 2010 ([www.netl.doe.gov](http://www.netl.doe.gov)).*

## **Biomethane in Hungary**

In Hungary, the wastewater treatment firm Zalaviz opened a biomethane dispensing point. This is the first biomethane station in Eastern Europe. The firm uses this biomethane produced for its own vehicles and there are also plans to allow town buses to take advantage of this fuel in the future. *Source: NGV Journal, 10 September 2010 ([www.ngvjournal.com](http://www.ngvjournal.com)).*

## **Biogas upgrading plant in Finland**

The first commercial-scale biogas upgrading plant in Finland is under construction. In Kouvola, energy, waste and water companies jointly own Kymen Bioenergia Oy, which produces biogas in a reactor using waste water from treatment as the feedstock. KSS Energia Oy is building a biogas upgrading plant to clean up biomethane and thus make it suitable for injection to the natural gas grid and/or vehicle refuelling. *Source: Gasum and KSS Energy, Press Release, 22 September 2010 ([www.gasum.fi](http://www.gasum.fi)).*

## **Methane/diesel OIGI® wins an innovation award**

The Hardstaff Group won the "Innovation for Sustainability" award at the 2010 Lord Staffordshire Awards for the East Midlands. The Hardstaff Oil-Ignition Gas-Injection (OIGI®) system is a patented combustion technology that simultaneously burns two fuels: (bio)methane and diesel. Diesel is required as the ignition source and gas injection commences when the vehicle begins to accelerate from idle. Substitution by natural gas is around 60-70% and the system cuts CO<sub>2</sub> engine emissions by approximately 16-20%; the savings are doubled when biomethane is used. There are significant reductions in tailpipe pollutants, which further

benefit the environment. A number of European manufacturers are supporting the Hardstaff dual fuel system, including Mercedes-Benz and Volvo. The Hardstaff OIGI® system is currently being fitted to the heavy goods vehicles, but the technology is designed for a wider range of application, with current sales through appointed distributors as far away as Brazil. *Source: The Hardstaff Group, Awards, 15 September 2010 ([www.hardstaffgroup.co.uk](http://www.hardstaffgroup.co.uk)).*

## **GDiesel: diesel with natural gas**

Advanced Refining Concepts (ARC) announced that its product, GDiesel®, has been designated by the Nevada Division of Environmental Protection as an alternative fuel in Nevada's Alternative Fueled Vehicles in Fleets program. GDiesel® combines conventional ultra-low sulphur diesel with natural gas. It is developed through ARC's proprietary process ClearRefining®. GDiesel® contains extremely low sulphur and mineral contaminants and requires no modifications to engines or vehicles for use. GDiesel® is currently being sold by five local and regional Nevada distributors. ARC recently began the start-up phase at its Peru Heights refinery, which will produce up to 100,000 gallons of GDiesel® per day when fully operational. *Source: ARC News, 24 August 2010 ([www.advancedrefiningconcepts.com](http://www.advancedrefiningconcepts.com)).*

## **ALCOHOLS, (BIO)GASOLINE**

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### **Scania develops ethanol/methane engine**

Scania has been granted about €3.3 million by Sweden's Strategic Vehicle Research and Innovation Initiative (FFI) to develop an engine for heavy commercial vehicles that can operate on both alcohol- and methane-based fuels. Scania will focus on developing an engine that will combine the high energy efficiency of diesel technology with the more efficient exhaust aftertreatment system of Otto Technology. This research includes systems for premixed mixture formation, fuel ignition, gas exchange systems, optimised valve performance, exhaust gas recirculation and the use of advanced catalyst technology for efficient exhaust aftertreatment. Scania is working together with the top experts in combustion and emission technology at the Royal Institute of Technology (KTH) in Stockholm, Lund University and Chalmers University of Technology in Gothenburg, Sweden. The project is part of a bilateral arrangement between Sweden and Brazil. *Source: Scania, Press Release, 4 October 2010 ([www.scania.com](http://www.scania.com)).*

### **EPA approved E15 for 2007 and newer models**

The Environmental Protection Agency (EPA) is granting a waiver to allow gasoline that contains up to 15% ethanol (E15) for use in year 2007 models and newer light-duty motor vehicles, which includes passenger cars, light-duty trucks and sport utility vehicles (SUV). The EPA is not approving the waiver for the introduction of E15 for use in year 2000 models and older light-duty motor vehicles, or for heavy-duty gasoline engines and motor vehicles, highway and off-highway motorcycles, and non-road engines, vehicles, and equipment (i.e. "non-road products" such as lawn mowers, chainsaws and boats). The EPA is deferring a decision on the applicability of a waiver to light-duty motor vehicle models from 2001-2006 until additional test data are available (such data are currently being compiled). *Source: EPA420-F-10-054, October 2010 ([www.epa.gov](http://www.epa.gov)).*

*Editorial: The EPA is expected to give decision on E15 ethanol for 2001-2006 models soon; 15% ethanol would mean 24% of butanol in oxygen content.*

### **Waste-based ethanol potential in EU**

In the EU27, biomass residues could be processed into 75-90 billion litres of next-generation ethanol annually. This means that waste-based ethanol could displace 52-62% of EU27 gasoline consumption by 2020. *Source: Bloomberg New Energy Finance, Novozymes and DSM, September 2010 ([www.novozymes.com](http://www.novozymes.com)).*

### **Biobutanol in Russia**

According to the European Biofuels Technology Platform, the state corporation Russian Technologies will begin construction of a biobutanol factory in the Irkutsk region in spring 2011. The factory will use wood chips and other timber by-products. *Source: European Biofuels Technology Platform ([www.biofuelstp.eu](http://www.biofuelstp.eu)).*

## **BIODIESEL ESTERS**

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### **A simpler process for FAME production**

At Brown University in the U.S., two chemists, Sello and Socha, have simplified the conversion of waste vegetable oil into biodiesel in a single reaction vessel using environmentally friendly catalysts and making

the conversion six times faster than current methods. Waste vegetable oil is made up of triacylglycerols, free fatty acids, and water. The conventional way to convert waste vegetable oil into biodiesel requires two separate reactions.

Sello and Socha settled on the metals bismuth triflate and scandium triflate, which are commonly used as catalysts in preparative organic chemistry. In addition, they performed the reactions using a microwave reactor instead of a conventional thermal heater. The new catalysts converted waste vegetable oil into biodiesel in about 20 minutes in the microwave reactor at 150°C. The catalysts promote both the reaction that converts free fatty acids into biodiesel and the reaction in which triacylglycerols are converted to biodiesel. The catalysts in the free fatty acid conversion, which is the more challenging of the two reactions, could be recycled up to five times, while maintaining the capacity to promote a 97% reaction yield. *Source: Brown University, Press Release, 7 October 2010 ([news.brown.edu](http://news.brown.edu)).*

## **Cellulosic biomethanol for biodiesel**

Range Fuels has produced cellulosic methanol from the initial phase of its first commercial cellulosic biofuels plant in Georgia using non-food biomass. The first phase of the Soperton Plant is based on a two-step thermo-chemical process to convert biomass into a synthesis gas, which is then passed through a proprietary catalyst to produce mixed alcohols, including cellulosic ethanol and methanol. The cellulosic methanol will be used to produce biodiesel, to displace diesel in heating applications, as a fuel additive in gasoline, or to power fuel cells. Range Fuels plans to begin production of cellulosic ethanol at the plant in the future. Range Fuels plans to expand the capacity of the plant to 60 million gallons annually (around 230,000 m<sup>3</sup>) with construction to begin next summer. The Soperton Plant is allowed to produce 100 million gallons of ethanol and methanol each year. Range Fuels is a company focused on commercially producing low-carbon biofuels and clean renewable power. *Source: Range Fuels News, 17 August 2010 ([www.rangefuels.com](http://www.rangefuels.com)).*

## **Algal fuel delivery to the U.S. Navy**

Solazyme, Inc. has delivered over 20,000 gallons (around 76 m<sup>3</sup>) of algal-derived shipboard fuel to the U.S. Navy, making it the world's largest delivery of 100% microbial-derived, non-alcohol, advanced biofuel. This delivery was part of a contract announced in 2009 and included refining partner Honeywell's UOP and its proprietary UOP/Eni Ecofining™ process technology. Solazyme also announced the signing of a new contract with the U.S. Department of Defense for a research and development project that will produce 150,000 additional gallons in 2010-2011. The successful delivery followed by the much larger contract furthers Solazyme's plan to begin commercial production. *Source: Solazyme, Press Release, 15 September 2010 ([www.solazyme.com](http://www.solazyme.com)).*

## **SYNTHETIC AND RENEWABLE DIESEL**

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### **Wood to diesel assessment by Neste and Stora Enso**

Neste Oil and Stora Enso's joint venture, NSE Biofuels Oy, is to commence environmental impact assessments for a commercial-scale biorefinery in Porvoo and Imatra in Finland. These are potential alternative sites for a plant that will produce about 200,000 tonnes of renewable diesel per year from wood biomass. The entire production chain has been tested at the company's demonstration plant in Varkaus, which was commissioned in 2009 and trial runs will continue at least until next year. Decisions on the future of the demonstration plant and the possible go-ahead for a commercial plant will be made in the early part of next year once the relevant business plans and cost calculations have been completed.

The public environmental impact assessment (EIA) will get under way in Porvoo and Imatra in early November 2010 and will last around a year. The choice of Porvoo and Imatra as possible locations for a commercial-scale plant is based on the local availability of raw materials and logistic connections. The existing plants of Neste Oil and Stora Enso at Porvoo and Imatra would enable efficient year-round utilisation of heat energy generated in the biorefinery. *Source: Neste Oil Corporation, Press Release 11 October 2010 ([www.nesteoil.com](http://www.nesteoil.com)).*

### **BTL demonstration plant progresses in Colorado**

Rentech and ClearFuels announced that a cooperative agreement has been signed with the U.S. DOE to receive the remaining \$19.7 million of a \$23 million grant to complete construction of a demonstration scale biomass gasifier at Rentech's Energy Technology Center (RETC) in Colorado. The gasifier will be used for the production of renewable synthetic fuels from biomass. At RETC, the ClearFuels biomass gasifier (20 tonnes per day) will produce synthesis gas from various wood waste and sugar cane bagasse feedstocks. UOP's upgrading technologies will be used to produce renewable synthetic jet and diesel fuels at the demonstration scale. This joint demonstration of an integrated bio-refinery is anticipated to be completed in late 2011. The team for the demonstration project includes ClearFuels, Rentech, URS, Linde/Hydro-Chem,

the Hawaiian Electric Company, the National Renewable Energy Lab and the Hawaii Natural Energy Institute. Source: *Rentech, Inc. Press Release 27 October 2010* ([phx.corporate-ir.net](http://phx.corporate-ir.net)).

## Waste converted into microbial oil for renewable diesel

Neste Oil has applied for patents to cover technology developed to produce microbial oil from waste and residues with the help of various yeasts and moulds for use as a feedstock for its NExBTL renewable diesel. Research work started with the Aalto University School of Science and Technology at the end of 2007 has resolved the process technology-related challenges. Microbial oil produced in this way has already been successfully refined into NExBTL renewable diesel. The emphasis will now shift to evaluating microbial oil's potential for pilot-scale production. Commercial production will probably not be possible until 2015 at the earliest. Research has shown that agricultural residues along with waste and sidestreams from industry represent an excellent source of energy and carbon for yeasts and moulds, which feed off organic compounds.

In addition to microbes, Neste Oil is also investigating the potential of algae, jatropha, forest industry by-products, and other materials. NExBTL technology is flexible and can be used to produce renewable diesel from different types of raw materials, such as vegetable oil and waste fat from the food industry. NExBTL renewable diesel is currently produced from palm and rapeseed oil and waste fat sourced from the food industry. NExBTL renewable diesel is compatible with all diesel engines and can be used as such or blended with fossil diesel. Neste Oil supplies the Finnish market with Neste Green diesel, which contains a minimum of 10% renewable content. Source: *Neste Oil Corporation, Press Release, 21 September 2010*. ([www.nesteoil.com](http://www.nesteoil.com)).

## Diesel from CO<sub>2</sub>

Joule Unlimited, Inc. announced a U.S. patent covering the direct conversion of sunlight and waste CO<sub>2</sub> into diesel-range hydrocarbons (U.S. Patent #7,794,969 "Methods and Compositions for the Recombinant Biosynthesis of n-Alkanes"). The production costs of hydrocarbon fuels with this process are as low as \$30 per barrel. Engineered photosynthetic microorganisms function as biocatalysts that use only sunlight, waste CO<sub>2</sub> and non-fresh water that produce more net energy than they consume and yield sulphur-free, ultra-clean diesel. The integrated platform will enable a level of productivity higher than any other closed-system approach, with a commercial target of 15,000 gallons (66 m<sup>3</sup>) of diesel per acre annually. Joule will begin pilot production by the end of 2010. The company has also achieved the direct production of ethanol via the same process at a rate of 10,000 gallons/acre/year, 40% of its ultimate productivity target, and pilot operations are underway in Leander, Texas. Source: *Joule news release, 14 September 2010* ([www.jouleunlimited.com](http://www.jouleunlimited.com)).

## OTHER FUELS AND VEHICLES

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### BioDME project in Sweden

The world's first plant for production of the BioDME motor fuel was inaugurated by Chemrec. BioDME obtained from forest residues using the Chemrec process reduces net GHG emissions by about 95% compared to diesel fuel. It also provides excellent engine performance and vehicle drivability. In Sweden up to half of all heavy road transportation could be run on BioDME, and over 30 million m<sup>3</sup> diesel equivalents per year could be produced globally from the available black liquor feedstock, enough to fuel one million heavy trucks.

This pilot plant is part of the BioDME project, which has demonstrated the production of BioDME and its use in heavy trucks. The syngas generation for the plant is based on Chemrec's black liquor gasification technology. The BioDME synthesis and upgrading technology are provided by Haldor Topsøe A/S. Other important components of the project are the distribution system and the vehicle test fleet. "In addition to building the BioDME plant and getting the Volvo Truck test fleet into operation, we have also advanced on building an industrial-scale plant at the Domsjö specialty cellulose mill in Örnsköldsvik, Sweden," said Chemrec's CEO. Source: *Chemrec, Press Release, 9 October 2010* ([www.chemrec.se](http://www.chemrec.se)).



The first BioDME filling station was opened in Stockholm by Preem on 7 September 2010. Photo courtesy of Preem ([www.preem.se](http://www.preem.se)).

## Particle emissions & toxicity of 2-Stroke scooters

Debates on diesel engine technology and related legislation have revealed the serious health effects of particle emissions from traffic. In this context, the particle emissions of small 2-Stroke engines with lost oil lubrication cannot be ignored any longer. A particular concern involves 2-Stroke scooters, small motorcycles and 2-Stroke 3-wheelers, which are very common in the congested city centres of several countries. To promote the exchange of information, mutual collaboration and progress in this domain, the final report of the IEA-AMF Annex XXXIII briefly summarises the international technical activities and work by the reporting institutes in 2009/2010. Some information about other applications of small engines is given.

The study on toxic influences of the exhaust aerosol on cell cultures by a PhD student at the University of Bern is particularly revealing. In this work, cell cultures of human lung were exposed to the exhaust gas in an appropriate exposure system and different conditions of exposure, incubation times and emission levels of vehicles were compared. The application of the best available technology (BAT\*) and several technical measures can reduce emissions from 2-S engines. Nevertheless, technical efforts alone cannot end pollution in many countries. More information and the involvement of the political, economical and legal authorities, as well as the awareness and education of the population (users) are also very important factors.

Small 4-S engines, which will increasingly replace the 2-S engines in several new fleets, also have much potential for emission reductions. The engines for handheld machines 2-S & 4-S present challenges for reducing emissions from the point of view of both cost and technology. On the Eastern Asia markets, several innovative and low-cost solutions for 2-wheelers are available: ICE engines with CNC or LPG, hybrid-electric and electric propulsion systems. Key information on these products is included in the report. *Source: IEA-AMF: Annex XXXIII "Particle Emissions of 2-S Scooters". Final report, September 2010. ([iea-arnf.vtt.fi](http://iea-arnf.vtt.fi)).*

## IEA Forum: Electric Vehicles Initiative

The "Electric Vehicles Initiative" was launched at the Paris Motor Show by a consortium that included the IEA and China, France, Germany, Japan, South Africa, Spain, Sweden and the U.S. Discussions were conducted during the IEA's Advanced Vehicle Leadership Forum held at the Paris Motor Show, involving 75 experts and high-level representatives from a wide range of areas. The governments discussed a range of issues to reach the IEA's estimated target: about 20 million EVs and PHEVs on the road by 2020, over 200 million by 2030 and one billion by 2050. This is a key element of the IEA Blue Map scenario target of halving of CO<sub>2</sub> emissions in 2050 compared to their 2005 levels.

Participating countries have agreed to: 1. Launch a pilot cities program to promote electric vehicles demonstrations in urban areas and share information on progress and outcomes; 2. Increase information sharing on funding levels and other features of research and development programs; and 3. Collect and share information on electric vehicle deployment targets and related indicators, as well as best practices and policies, to enable rapid progress toward those targets. Some actions by participating countries have already been launched. *Source: IEA Press Release, 10 October 2010 ([www.iea.org](http://www.iea.org)).*

## Hybrid electric diesel vehicle from Peugeot

Peugeot is expected to introduce a diesel-electric version of its 3008 series Hybrid4 model in 2011. The car's fuel consumption is 3.8 litres/100 km, with 99 g/km of CO<sub>2</sub>. The engine is 2.0 litre HDi FAP 120 kW (163 bhp) diesel engine. The car fulfils the Euro 5 emission level and is equipped with Eolys additive-enhanced particulate emission filter (FAP) system. Four operating modes can be selected: auto, zero emission vehicle (ZEV), four-wheel drive (4WD) and sport. *Source: Peugeot, Press Kit ([www.peugeot-pressepro.com](http://www.peugeot-pressepro.com)).*

## MISCELLANEOUS

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### Problems with low sulphur fuels in the marine sector

Due to new regulations, when approaching an environmental zone, ships must switch from heavy fuel oil (HFO) to diesel oil within certain sulphur limits e.g. down to 0.1%. Allweiler confirms that several major ship owners are facing major overhauls or fuel pump replacements. The main concern is low viscosity levels when operating with low sulphur diesel fuels. When switching from HFO to diesel, oil temperatures must drop from 150 to 40°C, which is a difficult process to manage. Optimal pump performance depends on the type of materials used to construct the pump, which must be appropriate for the liquid's chemical and physical properties, operational conditions, such as pressure, speed, temperature, and the areas of operation. Allweiler 3-screw pumps are modified, comprising specially treated materials, to minimise the risk of sudden break downs, thus providing long-term and reliable operations. *Source: 30 September 2010 ([www.marinelink.com](http://www.marinelink.com)).*

## Statoil against EC1 diesel fuel

In Sweden, Environmental Class 1 (known as MK1) sulphur-free diesel fuel has been available for almost 20 years. However, now all diesel fuel in Europe is sulphur-free. Statoil points out that the tax incentives for EC1 should be eliminated, because EC1 is 3% less energy-efficient than the EU-grade diesel fuel and results in higher CO<sub>2</sub> emissions as well. *Source: Statoil ([www.statoil.se](http://www.statoil.se)).*

*Editorial: Health effects of fuels are not related only on sulphur content of fuel, but e.g. aromatics play a significant role. New studies are progressing in Sweden to compare exhaust emissions from engines when using EC1 and EN590 diesel fuels, e.g. [Comparing Exhaust Emissions From Heavy Duty Diesel Engines Using EN590 vs Mk1 Diesel Fuel](#) ([fudinfo.trafikverket.se](http://fudinfo.trafikverket.se)).*

## Daimler looks beyond diesel

The director of Heavy Duty Engines at Daimler Trucks told those in attendance at the 63<sup>rd</sup> IAA Commercial Vehicles event in Germany that it is difficult to further decrease emissions after new standards are released, so the focus needs to be on CO<sub>2</sub>. He pointed out that improvements that can be made to diesel engines are not enough. Aerodynamics, driving resistance and vehicle length were discussed along with hybrids. However, the benefits of stop/start systems and electrically driven ancillaries are far lower on trucks than on passenger cars. "So I think that once we introduce hybrids to all trucks, the primary focus must be optimal energy management between the diesel engine and the battery, as well as the decision on when to switch over," he added. In terms of the types of hybrids that will be used, Schmid believes that there will be different systems for trucks and buses. *Source: 27 September 2010 (<http://www.sae.org/mags/TBE/8895>).*

## IEA & IEA/AMF News

### From the Executive Committee

At the 39<sup>th</sup> ExCo Meeting, Ms. Dina Bacovsky was selected as the new IEA AMF Secretary. Mr. Claës Pilo will work together with Ms. Bacovsky until 31 December 2010.

Mr. Pilo has served as the IEA-AMF Secretary since 1995. The Executive Committee has recognised Mr. Pilo for his long and fruitful service to the Committee. Mr. Pilo has been with the Committee since its founding in 1984, and was involved in alternative fuels even earlier. The secretary has also been active within the International Symposium on Alcohol Fuels (ISAF).

### Progress of Annexes

Progress of Annexes will be updated after 40<sup>th</sup> ExCo in the next newsletter. The final report of Annex XXXIII "Particle Emissions of 2-S Scooters" has been published ([link](#)). The report is referred to in the "Other fuels and vehicles" section of this newsletter.

### 40<sup>th</sup> ExCo Meeting

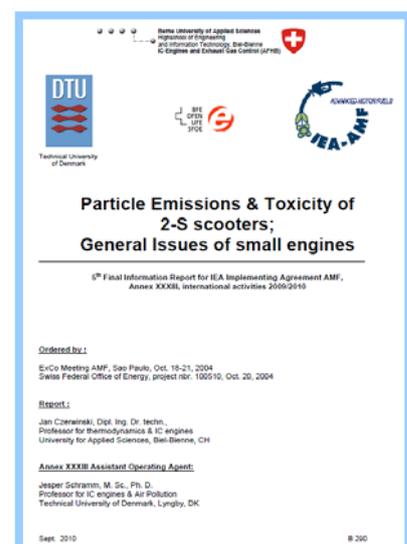
The 40<sup>th</sup> ExCo Meeting will be held on 9-11 November 2010 in Thessaloniki, Greece.

### Annex XXXIII report

The report entitled "Particle emissions & toxicity of 2-S scooters" is available at the website ([link](#)).

## PUBLICATIONS

- IEA-AMF: Annex XXXIII "Particle Emissions of 2-S Scooters". Final report, September 2010. ([www.iea-amf.vtt.fi/.../annex33\\_b290\\_2.pdf](http://www.iea-amf.vtt.fi/.../annex33_b290_2.pdf)).
- IEA: The IEA World Energy Outlook 2010 will be published on 9 November. © OECD/IEA, 2010.
- IEA: Key World Energy Statistics 2010. © OECD/IEA, 2010 ([www.iea.org](http://www.iea.org)).
- IEA Paper: Energy Subsidies: Getting the Prices Right. Subsidies for renewable and biofuels industries \$43-\$46 billion (2009), for the fossil fuel industry \$557billion (2008). The gap will narrow. © OECD/IEA, 2010. ([http://www.iea.org/files/energy\\_subsidies.pdf](http://www.iea.org/files/energy_subsidies.pdf)).
- Technical Assessment of the Feasibility of Introducing E15 Blended Fuel in U.S. Vehicle Fleet, 1994 to 2000 Model Years, Ricardo Inc. report, September 2010 ([ethanolrfa.3cdn.net](http://ethanolrfa.3cdn.net)).
- The U.S. EPA and DOE: The 2011 Fuel Economy Guide. Estimated mileage and fuel costs for 2011 vehicles ([www.fueleconomy.gov/.../FEG2011.pdf](http://www.fueleconomy.gov/.../FEG2011.pdf), [.../basicinformation.htm](http://www.fueleconomy.gov/.../basicinformation.htm)).
- A Fuel Efficiency Horizon for U.S. Automobiles. ([energy.umich.edu](http://energy.umich.edu)).



- Canadian Natural Gas Vehicle Alliance (CNGVA) website is redesigned ([www.cngva.org](http://www.cngva.org)).
- EU energy trends to 2030 ([ec.europa.eu](http://ec.europa.eu)).
- EEA: Europe's renewable energy plans for 2020, database ([www.eea.europa.eu](http://www.eea.europa.eu)). EEA Report, October 2010 ([www.ecn.nl](http://www.ecn.nl)).
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- The 18<sup>th</sup> European Biomass Conference, Conference Proceedings, published online ([www.etaflorence.it](http://www.etaflorence.it)).
- EC's Joint Research Centre (JRC): A new tool to ensure that European biofuels and bioliquids meet standards ([cordis.europa.eu](http://cordis.europa.eu)).
- National reports on the current status and potential for sustainable biogas and biomethane production. The GasHighWay Magazine and the project website ([www.gashighway.net](http://www.gashighway.net)).
- Roundtable on Sustainable Biofuels, RSB Newsletter "BioFuel for Thought" ([rsb.epfl.ch](http://rsb.epfl.ch)).
- VERT-Association (Diesel Particulate Filter Manufacturers Task Force, Switzerland): List of VERT-certified DPF, October 2010 ([www.akpf.org/.../2010\\_vert\\_filter\\_list.pdf](http://www.akpf.org/.../2010_vert_filter_list.pdf)).
- Wärtsilä's Shipping Scenarios 2030 (<http://www.wartsila.com/shippingscenarios>).
- Biodiesel Market, ADS Report. The markets for the feedstock currently used for biodiesel production, and potential feedstock ([www.asdreports.com](http://www.asdreports.com)).

## IEA/AMF Delegates

<b>Australia</b> – Department of the Environment, Lesley Dowling	<b>People's Republic of China</b> – CATARC, Maodong Fang	<b>Italy</b> – Eni SpA, Fausto Alberici	<b>Switzerland</b> – SFOE, Sandra Hermle
<b>Austria</b> – Austrian Federal Ministry for Transport, Andreas Dorda	<b>Denmark</b> – DTU, Jesper Schramm	<b>Japan</b> – NEDO, Kazunori Nagai	<b>Thailand</b> – NSTDA, Paritud Bhandhubanyong
<b>Canada</b> – Natural Resources Canada, Jean-Francois Gagné	<b>Finland</b> – VTT, Nils-Olof Nylund	<b>Japan</b> – LEVO, Nobuichi Ueda	<b>United Kingdom</b> – Department for Transport, Chris Parkin
	<b>France</b> – ADEME, Patrick Coroller	<b>Spain</b> – IDEA, Francisco José Domínguez Pérez	<b>USA</b> – DOE, Kevin Stork
	<b>Germany</b> – FNR, Birger Kerckow	<b>Sweden</b> – Swedish Road Administration, Olle Hådel	

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