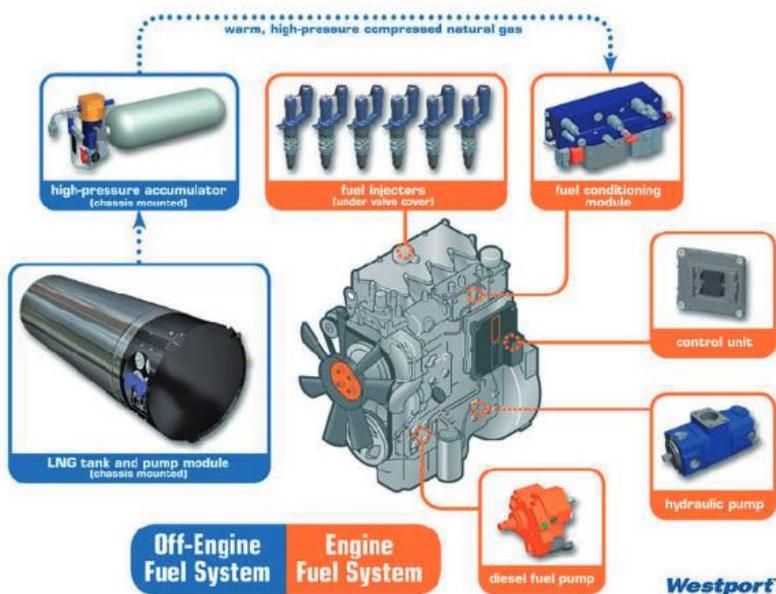


# AMFI Newsletter



The AMFI Newsletter is prepared for the members of the Implementing Agreement for Advanced Motor Fuels of the International Energy Agency (IEA/AMF). The AMFI releases four electronic newsletters each year.

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The AMFI Newsletter is available online at: [www.iea-amf.org](http://www.iea-amf.org)

AMF Annex 39 on the use of biomethane in HD engines completed [more](#)

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## GENERAL INTEREST

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### **New EU rules on clean fuels for transport**

New EU rules have been adopted in September 2014 to ensure the build-up of alternative refueling points across Europe with common standards for their design and use, including a common plug for recharging electric vehicles. Member States must set and make public their targets and present their national policy frameworks by end of 2016.

"Alternative fuels are key to improving the security of energy supply, reducing the impact of transport on the environment and boosting EU competitiveness", said Commission Vice-President Siim Kallas, commissioner for transport. "With these new rules, the EU provides long-awaited legal certainty for companies to start investing, and the possibility for economies of scale. EU Member States requested flexibility in deploying the infrastructure. It is now up to them to develop the right national policy frameworks."

Up to now, clean fuels have been held back by three main barriers: the high cost of vehicles, a low level of consumer acceptance, and the lack of recharging and refueling stations. This is a vicious circle. With the new "directive for the deployment of the alternative fuels infrastructure", Member States will have to provide a minimum infrastructure for alternative fuels such as electricity, hydrogen and natural gas, as well as common EU-wide standards for equipment needed and user information. Access to liquefied natural gas (LNG) for inland barges and maritime ships will provide a realistic option to meet challenges on lower emissions, in particular stricter sulfur emission limits in sensitive areas.

Source: [http://ec.europa.eu/transport/newsletters/2014/10-03/articles/clean\\_fuels\\_en.htm](http://ec.europa.eu/transport/newsletters/2014/10-03/articles/clean_fuels_en.htm)

### **EU agrees plan to cap use of food-based biofuels**

In June 2014, EU energy ministers agreed to limit production of biofuels made from food crops. The agreement would set a 7% limit on food-based biofuels in transport fuel. It still needs the approval of the European Parliament, expected to begin considering it later this year. The proposed limit is part of a goal to get 10 % of transport fuel from renewable sources by 2020. The compromise supported by ministers includes a 0.5 % non-binding target for next-generation biofuels.

This announcement has triggered several reactions, one of which is a manifesto by the Leaders of Sustainable Biofuels. This group was created early 2013 by seven of Europe's leading biofuel producers and airlines to speed up deployment of advanced sustainable biofuels in Europe. While the group welcomes the political agreement on biofuels, it urges for more rapid commitment and action from the European Union member states.

"... Advanced biofuels are the only option to significantly reduce emissions from the transport sector with the existing fleet. If all the wastes and residues that are sustainably available in the EU were converted to biofuels, this could supply 16% of road transport fuel in 2030, generate an additional 15 billion EUR in revenues and create about 300.000 jobs. This great socio-economic opportunity to create added value, green jobs and sustainable growth in Europe should not be missed.

Therefore, we call upon the European Parliament to promote the binding and dedicated target for

truly advanced biofuels in Europe for 2020 and beyond to make investments in innovative technologies materialize thus enhancing energy security. The level of the target has to be ambitious but realistic and increasing over the years.”

Sources: <http://af.reuters.com/article/energyOilNews/idAFL5N0OU3NB20140613?sp=true;>  
<http://www.sustainablebiofuelsleaders.com>

## **U.S. Navy eyes biofuels to fuel fleet of the future**

Every single day the U.S. Department of Defense uses 300,000 barrels of oil. It alone accounts for about 2% of America's total daily energy consumption, which makes it the single largest fuel consumer in the country. America's military actually consumes as much energy as the entire population of Nigeria, and there are 140 million people living in Nigeria. Suffice it to say, the military uses a lot of oil, which is why it's looking at alternative fuel sources to wean itself off of oil. One of those alternative sources is biofuels, and this year actually marks the first time the U.S. Navy is including biofuels in its annual procurement for bulk fuels



*USS Nimitz participating in the Great Green Fleet demonstration. Photo credit: Official U.S. Navy Flickr Page*

As part of the military's mission to use less energy, the U.S. Navy is seeking to get 50% of its energy from alternative sources by 2020. It has a long way to go as it currently generates about 17% of its electricity from nuclear and renewable sources. In order to bridge the gap, the U.S. Navy is looking to biofuels as a direct replacement for petroleum-based gasoline and distillates. These are also known as drop-in biofuels.

In the past the Navy has tested advanced biofuels that cost upward of \$26 per gallon. That price, of course, didn't sit well with many taxpayers, which is why the National Defense Authorization Act was passed, which limited the Department of Defense from paying higher prices for alternative fuels than it pays for petroleum-based fuels.

In order to combat the high price of commercial drop-in biofuels, the Navy and the U.S. Department of Agriculture, or USDA, worked together to create the Farm-to-Fleet program. Under the program, producers seeking to offer drop-in biofuels can apply to the USDA Commodity Credit Corporation for grants that will offset the cost of the feedstocks needed to produce these drop-in biofuels. Further, some drop-in biofuels can qualify for Renewable Identification Numbers, which can be sold to further offset the cost. The hope is that between these two offsets producers will be able to supply a drop-in jet fuel, which is the most costly fuel the navy uses, for the same price as traditional jet fuel.

Source: <http://www.fool.com/investing/general/2014/08/24/us-navy-eyes-biofuels-to-fuel-fleet-of-the-future.aspx>

## **US Navy, DOE, USDA award \$210M for 3 biorefineries**

In Washington, the Department of Defense has awarded \$210 million under the Defense Production Act to Emerald Biofuels, Fulcrum BioEnergy and Red Rock Bio towards the construction of biorefineries that produce cost-competitive, drop-in military biofuels.

Under the grants, the companies will build biorefineries to produce military spec fuel that is expected to cost the US military, on a weighted average, less than \$3.50 per gallon — or cost competitive with petroleum-based fuels, with availability expected as soon as 2016, and have a 50 percent of greater reduction of emissions compared to conventional fuels.

The biorefineries, once complete, will have a combined capacity for producing 100 million gallons of military-spec jet fuel and marine diesel.

Source: <http://www.biofuelsdigest.com/bdigest/2014/09/19/breaking-news-us-navy-doe-usda-award-210m-for-3-biorefineries-and-mil-spec-fuels/>

## GASEOUS FUELS AND LNG

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### Texas goes for natural gas motor fuels

A surge in natural gas motor fuels helped boost Texas sales tax revenue in the first half of 2014, the state reported. As more consumers embrace natural gas vehicles, Texas is seeing a surge in sales tax revenue, more than double what the state was expecting to collect by mid-year.

Compressed natural gas sold for \$2.15 per gasoline gallon equivalent in April, according to the most recent numbers from the U.S. Department of Energy's Alternative Fuels Data Center. That's \$1.50 per gallon cheaper than the price of gasoline at the same time.



While Texas continues to push for natural gas as a transportation fuel, some operators have reported roadblocks in trying to make it an economically viable alternative. At a natural gas vehicles conference in Houston in June, a New-Jersey based logistics company said it had yet to realize any savings after converting some of its fleet to natural gas.

Trucks fuelled by natural gas have a higher price tag, fuelling stations are more expensive to build and publicly available stations are sparse. There are 51 public compressed natural gas fuelling stations in Texas, most of them clustered in Houston and Dallas, according to data center reports.

Source: <http://fuelfix.com/blog/2014/08/19/texas-sees-surge-in-tax-revenue-from-natural-gas-motor-fuels/>

### LNG Truck by Isuzu Japan

Isuzu Japan decided to develop heavy-duty trucks driven by liquefied natural gas (LNG), intending the commercialization in 2017. The trucks are planned to run about 1000 km on a single filling of LNG, which is higher in density than conventional CNG. By the evolution of their own low pollution technology, Isuzu intends to sell LNG trucks to transportation companies which wish to be more eco-friendly.

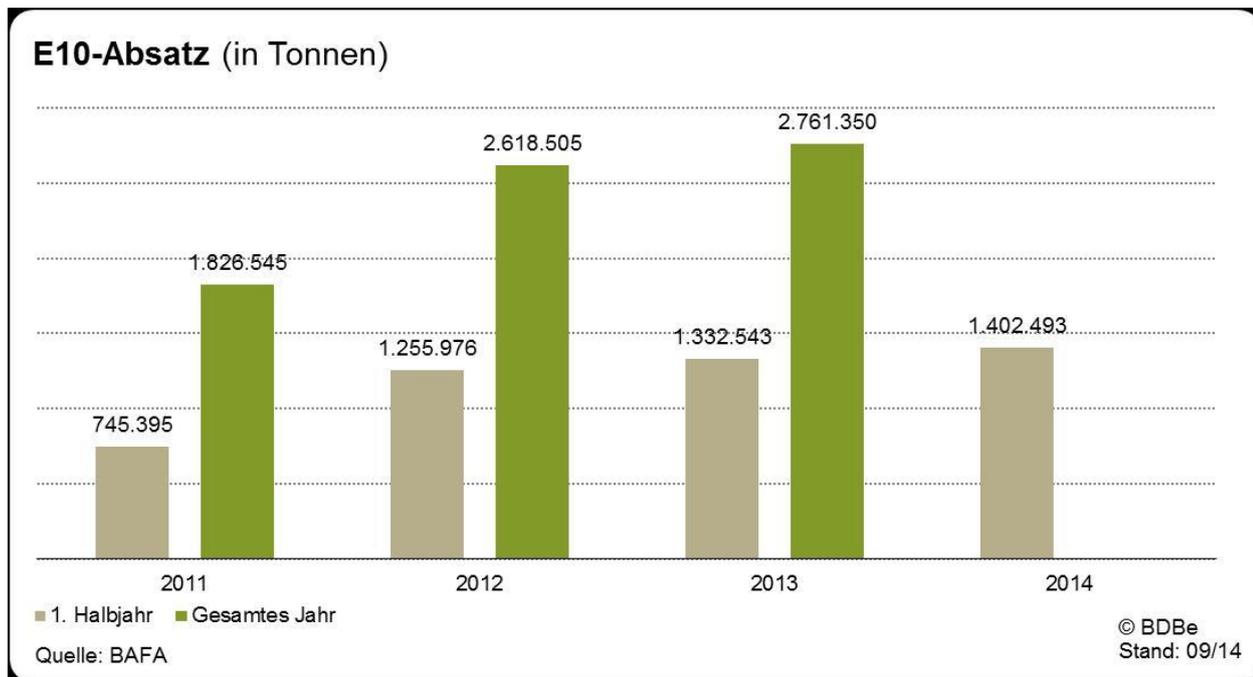
Source: *Nikkei Sangyo Shimbun*, 8 October, 2014

## ALCOHOLS AND (BIO)GASOLINE

### Germany: Super E10 stabilizes gasoline market

The Federation of German bioethanol industry (BDBe) announced that sales of Super E10 (gasoline blended with 10% ethanol) increased in the first half of 2014 by 5.7 percent, while Super E5, Super Plus and Normal stagnated with an increase of only 0.3 percent

The demand for Super E10 increased, compared to the first half of 2013, by 70,000 tons, reaching 1.4 million tons in the first half of 2014. The other fuel (Super E5, Super Plus, Normal) sales remained at around 7.6 million tons. Super E10 has a share of 15.5% of the total gasoline market (9.04 million tons). The sales of E85 declined by 27.0%- only 5,242 tons had been sold.



Sale figures of E10 in tons

Source: <http://www.bdbe.de/presse/presseinformationen/erstes-halbjahr-2014-super-e10-stabilisiert-benzinmarkt>

### US: Fuel economy improvements for gasoline vehicles

Although light-duty vehicle types such as diesel, full-hybrid, plug-in hybrid, and plug-in electric have garnered significant attention in recent years as way to reduce petroleum consumption, standard gasoline vehicles, including those that use micro and mild hybridization, are projected to retain nearly 80% of new sales in 2025 and 78% in 2040 in EIA's Annual Energy Outlook 2014 Reference case.

Several fuel-efficient technologies that can deliver significant reductions in fuel consumption are currently or will soon be available for standard gasoline vehicles. These technologies can enable manufacturers to meet future greenhouse gas emissions and Corporate Average Fuel Economy (CAFE) standards, at relatively modest cost. These technologies include:

- Engine technologies such as variable valve timing and lift, cylinder deactivation, turbocharging, and downsizing
- Electrification technologies such as electric power steering, and micro or mild hybridization (turning off the engine when the car is stopped)

- Vehicle technologies such as fuel-efficient tires and aerodynamics
- Weight-reduction
- Transmission technologies such as aggressive shift logic or 8-speed transmission

The addition of these fuel-efficient technologies to standard gasoline vehicles substantially increases fuel economy. In the midsize passenger car category, the largest share of sales among light-duty vehicles, standard gasoline vehicle compliance fuel economy increases from around 35 miles per gallon (mpg) today to 53 mpg by 2025, an increase of about 50%, while the vehicle price rises from \$25,000 (2012\$) to about \$27,000, an increase of less than 10%.

Source: U.S. Energy Information Administration, <http://www.fueleconomy.gov/feg/atv.shtml>

## BIODIESEL ESTERS

### World production of biodiesel further increasing

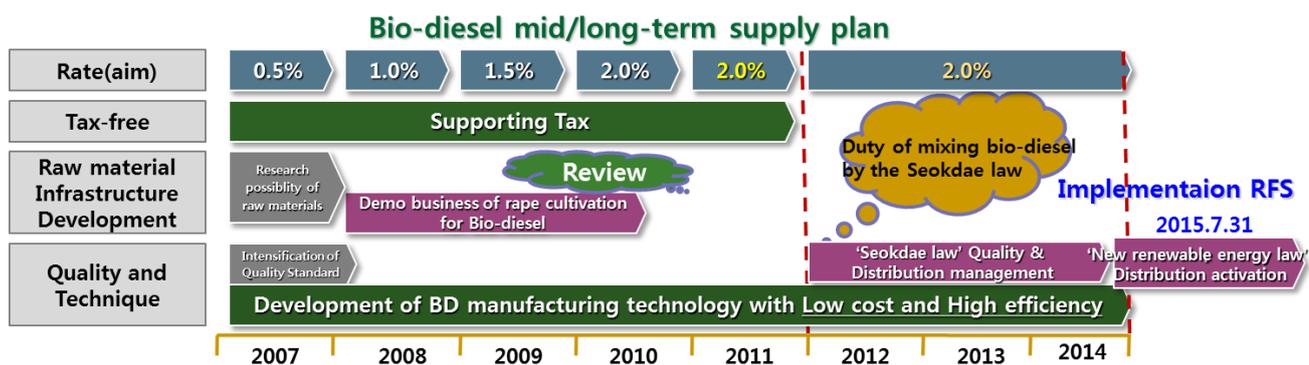
OIL WORLD ISTA Mielke GmbH tentatively forecast world production of biodiesel at a record 29.1 million tons in Jan/Dec 2014. This implies an increase of 2.0-2.1 million tons or roughly 8% from last year, thus still sizably exceeding the growth rates in other usage categories, like the food sector. However, the increase of biodiesel production is seen slowing down from 2.9 million tons or 12% in 2013. Palm oil already overtook soya oil as the major feedstock for biodiesel production in 2013.

Source:

[www.oilworld.biz/app.php?fid=1090&fpar=0&isSSL=0&aps=0&blub=99d5d4612ae78dfcf3f261cddd2f91a5&ista=b66515e1d469b5b27ebc0e86203cd968#8478](http://www.oilworld.biz/app.php?fid=1090&fpar=0&isSSL=0&aps=0&blub=99d5d4612ae78dfcf3f261cddd2f91a5&ista=b66515e1d469b5b27ebc0e86203cd968#8478)

### Renewable Fuel Standards (RFS) in Korea

RFS in Korea will be implemented starting July 31 of 2015 via amendment of the July 2013 regulations covering biodiesel blending (within 2%). According to the amended RFS, domestic oil companies are required to blend biodiesel feedstock with conventional diesel fuel.



Source: [http://www.aist.go.jp/index\\_en.html](http://www.aist.go.jp/index_en.html)

### Palm FAME20% Trial in H.D. trucks, Thailand

Thailand's Department of Energy Business (DOEB) assigns PTT Public Company Limited to conduct a study on the use of diesel fuel blended with 20% Palm FAME (PME20) in heavy-duty diesel vehicles. According to Thailand's Renewable and Alternative Energy Development Plan, the share of renewable energy is targeted to increase to 25% of the total energy consumption by the year 2021, with the sub-target of 7.2 million liters per day of fatty acid methyl esters (FAME), or

so called biodiesel. To accomplish this target, Thailand is currently implementing a mandate of B7- increased from B5 last year. In addition, upon an approval from DOEB, the use of higher blends up to B20 is allowed for captive fleets, e.g. transport companies and bus fleets.

Source: [http://www.aist.go.jp/index\\_en.html](http://www.aist.go.jp/index_en.html)

## **SYNTHETIC AND RENEWABLE DIESEL / JET**

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### **US: Revised ASTM aviation fuel standard**

Renewable Synthesized Iso-Paraffinic (SIP) fuel has now been included in ASTM International standard D7566, Specification for Aviation Turbine Fuel Containing Synthesized Hydrocarbons. A recently approved revision that adds SIP fuel to the ASTM D7566 annex will facilitate use of the fuels in all airlines internationally.

Independent analysis indicates that renewable farnesene hydrocarbon produced from sugarcane can reduce greenhouse gas emissions by more than 50 percent when compared to conventional Jet A/A1 fuel” says ASTM member Fernando Garcia, senior director, scientific and regulatory affairs, Amyris Inc.

First approved in 2009, ASTM D7566 covers an evaluation program to verify that products covered by the standard are fully compatible with all engine parts and all material and equipment used in the supply chain. The standard has recently been revised to incorporate international material specifications for SIP, or low carbon aviation fuel, ensuring fuel quality equal or superior to petroleum-derived aviation turbine fuels. In addition to being used to ensure flight safety, ASTM D7566 also functions as a reference fuel standard when validating aviation turbine engines, aircraft fuel systems and ground fuel-handling equipment.

Source: [www.astmnewsroom.org/default.aspx?pageid=3463](http://www.astmnewsroom.org/default.aspx?pageid=3463)

## **OTHER FUELS AND VEHICLES**

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### **EU: Electric car sales**

Electric vehicle sales in Europe doubled in 2013 for the fourth consecutive year, with more than one in every 20 new auto-buyers in the Netherlands and Norway opting for battery-powered cars, according to analysis of official data by the Transport and Environment (T&E) environmental think tank. The paper found that 50 000 plug-in vehicles were sold across the EU in 2013 – 0.4% of all car sales – with the market set to grow to 100 000 vehicles by 2015. A quarter of the world’s electric cars are now sold in Europe but the USA and Japan represent the largest global markets, with a flexible mandate helping California to achieve a 4% market share. In 2013, the three best-selling car electric models were all new market entrants – the Renault Zoe, Mitsubishi Outlander and Volvo V60 plug-in. In contrast, best-selling models from the previous year such as the Opel Ampera, Peugeot Citroen iOn and C-zero saw sales fall considerably.

Source: [www.euractiv.com/sections/transport/european-electric-car-sales-continue-accelerate-303807?utm\\_source=EurActiv+Newsletter&utm\\_campaign=deb871d8fe-newsletter\\_energy&utm\\_medium=email&utm\\_term=0\\_bab5f0ea4e-deb871d8fe-245716357](http://www.euractiv.com/sections/transport/european-electric-car-sales-continue-accelerate-303807?utm_source=EurActiv+Newsletter&utm_campaign=deb871d8fe-newsletter_energy&utm_medium=email&utm_term=0_bab5f0ea4e-deb871d8fe-245716357)

## US: Fuel cell technologies for liquid fuels

Three R&D projects for the production of liquid fuels with fuel cell technology recently were granted funding by the Advanced Research Projects Agency-Energy (ARPA-E). This USDOE agency advances high-potential, high-impact energy technologies that are too early for private-sector investment. ARPA-E awardees are unique because they are developing entirely new ways to generate, store, and use energy. The three projects are:

- Argonne National Laboratory will develop a hybrid fuel cell technology that will both generate electricity and produce liquid fuel. This dual mode capability is enabled by a device that removes protons from the reaction site, which allows the cell to operate at lower temperatures. In addition to conventional fuel cell capabilities, Argonne's cell could use natural gas to produce ethylene for conversion into liquid fuel or high-value chemicals.
- Materials & Systems Research, Inc. (MSRI) will develop an intermediate-temperature fuel cell capable of electrochemically converting natural gas into electricity or liquid fuel in a single step. The electrodes will be designed to use catalysts more effectively and the entire cell will be fabricated using a cost-effective process that can be readily scaled up for mass production. MSRI's technology will provide low-cost power while operating in a temperature range of 400-500°C, enabling better durability than today's high-temperature fuel cells.
- FuelCell Energy will develop an intermediate-temperature fuel cell that will directly convert methane to methanol and other liquid fuels using advanced metal catalysts. These catalysts will be optimized to improve the yield and selectivity of the methane-to-methanol reaction. In addition, a new reactive spray deposition technique will be employed to manufacture the cell in a continuous process. The combination of these advanced catalysts and advanced manufacturing techniques will reduce overall system-level costs

Source: [http://arpa-e.energy.gov/sites/default/files/documents/files/REBELS%20project%20descriptions\\_FINAL%20AS%20ISSUED\\_06172014.pdf](http://arpa-e.energy.gov/sites/default/files/documents/files/REBELS%20project%20descriptions_FINAL%20AS%20ISSUED_06172014.pdf)

## MISCELLANEOUS

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### Consumers and alternative fuels

Consumers look at alternative fuels and vehicles the same way that they look at traditional fuels: economics drives the purchasing decision.

Consumers say that they consider fuel economy and the cost of the vehicle far more important than any other attribute when purchasing a new vehicle, according to the results of a national consumer poll released by the Fuels Institute, a non-partisan think tank dedicated to evaluating the market issues related to consumer vehicles and the fuels that power them.

More than 8 in 10 consumers say that economic factors such as fuel economy (83%) and vehicle cost (81%) are influential to their vehicle purchasing decision. Safety features were a distant third (51%) followed by fuel or engine type (48%), according to the survey of 2,007 gas consumers conducted by Penn, Schoen and Berland Associates LLC.

Consumers say that they are open to new alternative vehicles. Nearly 4 in 10 (39%) say that

they would consider a non-gasoline vehicle, compared to 30% who say that they would not. Hybrid vehicles are most appealing to those considering a new car purchase in the next three years, with 85% saying that they would consider a hybrid vehicle, which combines electric power with traditional gasoline power. Other alternative vehicles were also of some interest to consumers, including electric (55%), flex fuel (52%), diesel fuel (30%), or other fuels including propane or natural gas (22%).

The survey results are featured in the new White Paper, "Consumers and Alternative Fuels: Economics Are Top of Mind," which is available for download at [www.fuelsinstitute.org](http://www.fuelsinstitute.org).

Source: [http://www.nacsonline.com/News/Press\\_Releases/2014/Pages/PR081914.aspx#.U\\_qBJPldWS0](http://www.nacsonline.com/News/Press_Releases/2014/Pages/PR081914.aspx#.U_qBJPldWS0)

## **IEA & IEA-AMF NEWS**

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### **AMF IA-request for extension**

The Advanced Motor Fuels Implementing Agreement (AMF IA) is nearing the end of its 4<sup>th</sup> working period. Based on a unanimous decision of the 17 contracting parties, AMF has recently submitted its request for extension of the Implementing Agreement for another five years. The request for extension was accompanied by the End of Term Report 2009-2014 and the Strategic Plan 2015-2019. While the End of Term Report summarizes AMF's work and achievements between 2009 and 2014, the Strategic Plan provides direction and focus for AMF during its next 5-year term. Pending approval of the IEA Committee on Energy Research and Technology (CERT), both documents will be publicly available at the AMF website ([www.iea-amf.org](http://www.iea-amf.org)).

### **AMF Annex 38 completed**

Annex 38 "Evaluation of Environmental Impact of Biodiesel Vehicle in Real Traffic Conditions" performed on-road driving tests for the evaluation of the real-world exhaust gas in using biofuels of FAME, HVO and BTL, and considered the future direction of biofuels applicable to heavy duty diesel vehicles.

NOx emission characteristics under real-world conditions were influenced by weather conditions, such as ambient temperature or water vapor partial pressure, and driving operation, in particular NOx emissions were high in cold and low humid condition. Moreover, in the non-ecodriving operation NOx emissions were higher than in ecodriving operation.

In using FAME in particular among every biofuel, the NOx emission amount significantly increased under the real-world conditions. On the other hand, in using HVO, the NOx emission characteristics were equivalent to those of ULSD and in the case of BTL they were almost same or slightly increased. Therefore, in terms of inhibiting the degradation of emission gas characteristics, it is not deemed appropriate to apply FAME to heavy-duty diesel vehicles, but a paraffinic hydrocarbon biofuel such as HVO or BTL is adequate to be applied.

The full report is available at <http://iea-amf.org/content/projects/annexes/38>.

### **AMF Annex 39 completed**

AMF Annex 39 "Enhanced Emission Performance and Fuel Efficiency for Heavy Duty Methane Fuelled Engines", which was performed jointly with IEA Bioenergy Task 41, has been completed and the final report and a summary brochure are now available at <http://iea-amf.org/content/projects/annexes/39>.

Two types of engine technology have been investigated, spark ignited engines and compression ignited diesel dual fuel engines. Engines operated according the dual fuel technology can be divided in "fumigation technology" and "direct injection technology", both technologies use the diesel part just to ignite the mix of air/fuel after combustion. The advantage with dual fuel technology is a possibility to reach similar energy efficiency as for diesel engines, which is about 10% more than from heavy duty spark ignited engines.

The project clearly indicates that dual fuel technology is in need for additional development to meet requirements from the market related to ratio of diesel replacement and emission performance, especially emissions of methane. In addition, energy efficiency has to be improved and the air/fuel management must be more tolerant to different specification of the gas/liquid used as fuel.

## AMF Annexes / Projects

Annex 28: Information Service & AMF Website (AMFI)

Annex 35 Subtask 2: Particulate Measurements: Ethanol and Butanol in DISI Engines

Annex 42: Toxicity of Exhaust Gases and Particles from IC-Engines

Annex 43: Performance Evaluation of Passenger Car, Fuel, and Powerplant Options

Annex 44: Alcohol fuels including methanol, by CATARC, China

Annex 45: Hydrotreated vegetable oil, by Germany and Denmark

Annex 46: Alcohol Application in CI Engines, by DTU

Annex 47: Reconsideration of DME Fuel Specifications for Vehicles

Annex 48: Value Proposition Study on Natural Gas Pathways for Road Vehicles

Annex 49: COMVEC – Fuel and Technology Alternatives for Commercial Vehicles

Annex 50: Fuel and Technology Alternatives in Non-Road Engines

Annex 51: Methane Emission Control

Check [www.iea-amf.org](http://www.iea-amf.org) for more details!

## PUBLICATIONS

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- **IEA Medium-Term Renewable Energy Market Report 2014** assesses market trends for renewables in the electricity, transport and heat sectors, identifying drivers and challenges to deployment, and making projections through 2020.

Link: [http://www.oecd-ilibrary.org/energy/medium-term-renewable-energy-market-report-2014\\_renewmar-2014-en](http://www.oecd-ilibrary.org/energy/medium-term-renewable-energy-market-report-2014_renewmar-2014-en)

- **Energy Statistics of OECD Countries 2014.** This volume contains data on energy supply and consumption in original units for coal, oil, gas, electricity, heat, renewables and waste. Complete data are available for 2011 and 2012 and supply estimates are available for the most recent year (i.e. 2013).

Link: [http://www.oecd-ilibrary.org/energy/energy-statistics-of-oecd-countries-2014\\_energy\\_stats\\_oecd-2014-en](http://www.oecd-ilibrary.org/energy/energy-statistics-of-oecd-countries-2014_energy_stats_oecd-2014-en)

- **ERTRAC Roadmap "Energy Carriers for Powertrains"**. This roadmap provides an overview of energy carriers and production routes that offer significant potential to contribute to decarbonization of the transport system's energy supply in view of the 2050

target. For each of the options the state-of-the art and future R&D needs are identified. Based on the current understanding of the status and potential of various options, milestones are defined for development and implementation of various options resulting in a roadmap for research and development that is intended to provide useful input to the European Commission's Horizon 2020 program as well as the R&D strategies of industry and research organizations throughout Europe.

Link: [http://www.ertrac.org/uploads/documentsearch/id32/2014-03-12\\_Roadmap\\_Energy\\_Carriers\\_for\\_Powertrains.pdf](http://www.ertrac.org/uploads/documentsearch/id32/2014-03-12_Roadmap_Energy_Carriers_for_Powertrains.pdf)

- **Sustainable intensification of European agriculture.** In the future there will be an increasing need for agricultural products, because of a growing world population, rising incomes with increased meat consumption, and expanding agro-fuel production. This additional demand can be met by clearing forests or intensification of agricultural production. This report by the IEEP (Institute for European Environmental Policy) defines sustainable intensification, explains its global logic, discusses what it means for EU agriculture and exemplifies this in three case studies for soil performance, nutrient recycling and biodiversity.  
Link: [http://www.ieep.eu/assets/1404/111120\\_BROCH\\_SUST\\_INTENS\\_DEF.pdf](http://www.ieep.eu/assets/1404/111120_BROCH_SUST_INTENS_DEF.pdf)
- **Effects of air pollution on European ecosystems.** The European Environment Agency (EEA) has published a report on past and future exposure of European freshwater and terrestrial habitats to acidifying and eutrophying air pollutants. The results of this report will be used to inform forthcoming updates of the EEA Core Set Indicator 'Exposure of ecosystems to acidification, eutrophication and ozone' (CSI 005) (EEA, 2012a) and the biodiversity indicator 'Critical load exceedance for nitrogen' (Streamlining European Biodiversity Indicators; SEBI 009) (EEA, 2010a)  
Link: <http://www.eea.europa.eu/publications/effects-of-air-pollution-on>
- The **2013 Annual Report of the IEA Advanced Fuel Cells Implementing Agreement.** This report collates the abundant work that AFC members have been involved in during this period and highlights the breadth and depth of work carried out and shared within the Implementing Agreement. The aim of the Advanced Fuel Cells Implementing Agreement (AFC IA) is to contribute to the research and development of fuel cell technologies, deployment of fuel cell technologies and dissemination thereof for all our member countries and organizations.  
Link: [www.ieafuelcell.com/publications.php](http://www.ieafuelcell.com/publications.php)
- IEA Bioenergy Task 39 report "**The potential and challenges of drop-in biofuels**". Drop-in biofuels are defined as "liquid bio-hydrocarbons that are functionally equivalent to petroleum fuels and are fully compatible with existing petroleum infrastructure" and can be readily integrated in the existing petroleum fuel infrastructure in a "drop-in" fashion. This is particularly important in sectors such as aviation where there are no real alternatives to sustainably produced biofuels for low carbon emitting fuel sources.  
Link: <http://task39.org/publications/>
- The IEA Bioenergy Task 40 and 37 joint study "**Biomethane: Status and Factors Affecting Market Development and Trade**" addresses the status and emerging challenges of dealing with the rapid growth in production of biomethane, by either anaerobic digestion or thermal gasification, the developing biomethane market and trade of the gaseous biofuel.  
Link: <http://www.bioenergytrade.org/downloads/t40-t37-biomethane-2014.pdf>

- Results of a IEA Bioenergy Task 40 study on the **Impact of promotion mechanisms for advanced and low-iLUC biofuels on markets** are now available. With current discussions on the indirect effects of biofuels, and the aim to broaden feedstocks to non-food biomass, policies are focusing on biofuels from waste, residues and lignocellulose materials, so called 'advanced' biofuels by providing extra support through specific promotion mechanisms. This study presents some typical cases where these mechanisms have had, or may have impacts on markets and trade.

Link: <http://www.bioenergytrade.org/downloads/t40-low-iluc-straw-august-2014.pdf>

- IEA Bioenergy Task 42 brochure "**Biorefining – Sustainable processing of biomass into a spectrum of marketable bio-based products and bioenergy**". Its purpose is to provide an unbiased, authoritative statement on biorefining in general, and of the specific activities dealt with within IEA Bioenergy Task 42 on biorefining.

Link: [http://www.ieabioenergy.com/wp-content/uploads/2014/09/IEA-Bioenergy-Task42-Biorefining-Brochure-SEP2014\\_LR.pdf](http://www.ieabioenergy.com/wp-content/uploads/2014/09/IEA-Bioenergy-Task42-Biorefining-Brochure-SEP2014_LR.pdf)

- European Union emission inventory report 1990–2012 under the UNECE Convention on Long-range Transboundary Air Pollution (LRTAP). This document is the annual European Union (EU) emission inventory report under the United Nations Economic Commission for Europe (UNECE) Convention on Long-range Transboundary Air Pollution (LRTAP) (UNECE, 1979). The report and its accompanying data are provided as an official submission to the Executive Secretary of UNECE by the European Commission on behalf of the EU as a party. The report is compiled by the European Environment Agency (EEA) in cooperation with the EU Member States.

Link: [http://www.eea.europa.eu/publications/lrtap-2014/at\\_download/file](http://www.eea.europa.eu/publications/lrtap-2014/at_download/file)

- **Swiss climate policy at a glance.** Status and perspectives on the basis of Switzerland's 2014 report to the United Nations Climate Change Secretariat: Switzerland's share of global greenhouse gas emissions amounts to just 0.1 percent. With the economic growth in China, India, Brazil and other emerging economies, this percentage is steadily decreasing. But nevertheless Switzerland is an economically advanced country with relatively high greenhouse gas emissions. It is up to Switzerland and other industrial countries to show that it can convert to a climate-friendly economic and social organization, while maintaining a high quality of life. Switzerland has met its obligations under the Kyoto Protocol of 1997, as this brochure and the underlying comprehensive report to the UN prove.

Link:

<http://www.bafu.admin.ch/publikationen/publikation/01757/index.html?lang=en&download=NHZLpZig7t,Inp6I0N TU042I2Z6In1ad1IZn4Z2qZpnO2Yuq2Z6gpJCHdn95fWym162dpYbUzd,Gpd6emK2Oz9aGodetmqaN19XI2IdvoaCV Z,s-.pdf>

- **EurObserv'ER Biofuel Barometer.** The growth of biofuel consumption for use in transport in the European Union (EU-28) has dwindled in the past few years and finally dropped by about one million ton oil equivalent (toe, 6.8 %) between 2012 and 2013 according to EurObserv'ER, to a consumption level of 13.6 million toe. Nevertheless, sustainable biofuel consumption, certified and thus eligible for inclusion in European targets increased slightly by 0.8 % to 11.8 Mtoe. Looking at the historical trend, this is the first time that consumption of biofuels decreases since the European Union's industrial expansion of biofuels.

Link: [http://www.eurobserv-er.org/pdf/baro222\\_en.asp](http://www.eurobserv-er.org/pdf/baro222_en.asp)

## EVENTS

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Small Engines Leaning Towards Enhanced Personal Mobility, 17 November 2014, Pisa, Italy

Conference website: <http://www.sae.org/events/setc/>

The 1<sup>st</sup> EABA and EC Algae Contractors' Conference, and the 8th International Algae Congress, 01-03 December 2014, Florence, Italy

Conference website: <http://www.algaecongress.com/>

European Electric Vehicle Congress, 2-5 December 2014, Brussels, Belgium

Conference website: <http://www.eevc.eu/>

Second Annual Fuel Choices Summit, 3-4 December 2014, Israel

Conference website: <http://www.fuelchoicesinitiative.com/>

Eilat-Eilat Green Energy 6<sup>th</sup> International Conference & Exhibition, 7-9 December 2014, Eilat, Israel

Conference website: <http://www.eilatenergy.org/>

Fuels of the Future 2015, 19-20 January 2015, Berlin, Germany

Conference website: <http://www.ufop.de/english/news/fuels-of-the-future-2015-invitation-for-sponsors-and-call-for-papers/>

10<sup>th</sup> International Colloquium Fuels – Conventional and Future Energy for Automobiles, 20-22 January 2015, Stuttgart, Germany

Conference website: [www.tae.de/fuels](http://www.tae.de/fuels)

Clean Car Expo, 16-18 February 2015, San Diego, CA, USA

Conference website: <http://www.cleancarexpo.com/>

21<sup>st</sup> International Symposium on Alcohol Fuels, 10-14 March 2015, Gwangju, Republic of Korea

Conference website: [www.2015isaf.org](http://www.2015isaf.org)

5th EUROPEAN PEFC & H2 FORUM, 30 June 2015, Lucerne, Switzerland

Conference website: <http://www.efcf.com/index.php?id=1237>

IEA Bioenergy Conference 2015 - Realising the world's sustainable bioenergy potential, 27-28 October 2015, Berlin, Germany

Conference website: <http://ieabioenergy2015.org/>

ANGVA's 6<sup>th</sup> Biennial International Conference & Exhibition (ANGVA 2015), 4 - 6 November 2015, Chengdu, China

Conference website: <http://www.angva.org/?p=1091>

## IEA AMF Delegates

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### **Austria**

Austrian Federal Ministry for Transport,  
Andreas Dorda

### **Canada**

CanmetENERGY, Niklas Ekstrom

### **People's Republic of China**

CATARC, Donglian Tian

### **Denmark**

DTU, Jesper Schramm

### **Finland**

VTT, Nils-Olof Nylund

### **France**

IFPEN, Jean-Francois Gruson

### **Germany**

FNR, Birger Kerckow

### **Israel**

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Bracha Halaf

### **Italy**

Eni SpA, Pietro Scorletti

### **Japan**

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LEVO, Nobuichi Ueda

### **South Korea**

KETEP, Hyun-choon Cho

### **Spain**

IDAE,  
Francisco José Domínguez Pérez

### **Sweden**

Swedish Transport Administration,  
Magnus Lindgren

### **Switzerland**

SFOE, Sandra Hermle

### **Thailand**

PTT, Nirod Akarapanjavit

### **The United States**

DOE, Steve Goguen

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