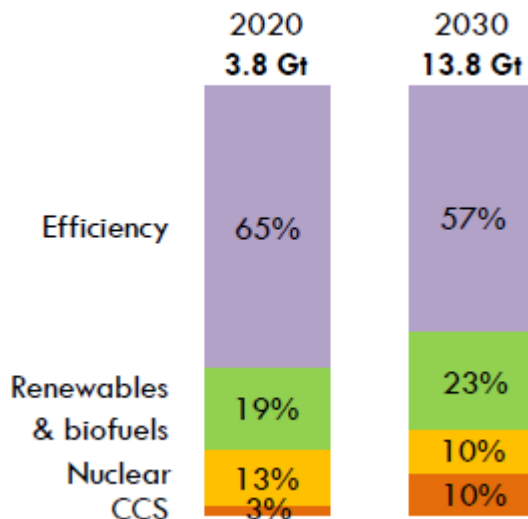


AMFI Newsletter



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

IEA World Energy Outlook 2009 counts on improvement of energy efficiency, which would account for over half of total abatement needed of energy-related CO₂ emissions when compared to Reference scenario. Presentation to the Press of the World Energy Outlook 2009, Tanaka, Nobuo (www.iea.org). © OECD/IEA 2009.

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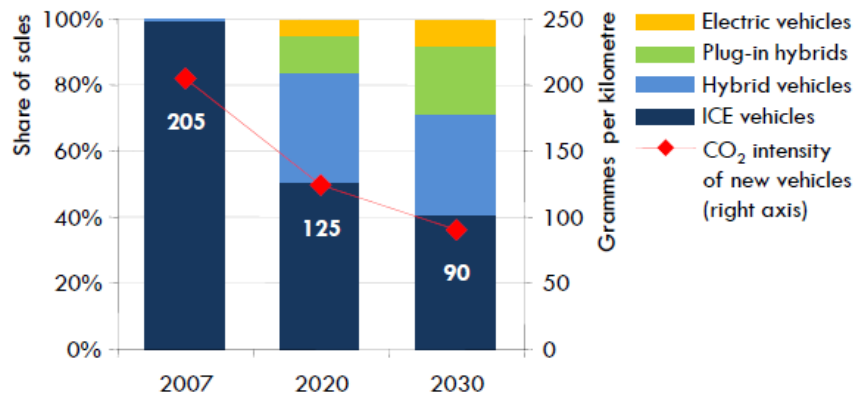
PUBLICATIONS

GENERAL INTEREST

IEA World Energy Outlook 2009

The International Energy Agency (IEA) published its annual World Energy Outlook in November 2009. The outlook calls for caution, as global temperatures could rise by up to 6°C if current trends continue. However, it also provides grounds for optimism, according to Mr. Tanaka, because there are cost-effective solutions to avoid severe climate change while enhancing energy security.

The economic slowdown has led to a decrease in global CO₂ emissions, but this will soon resume its upward trend if government policies don't change. Fossil fuels continue to dominate the energy mix, accounting for more than three-quarters of incremental demand. In around 2025, China will overtake the USA to become the world's biggest user of oil and importer of gas. The energy poverty challenge also remains unresolved; in 2030, 1.3 billion people will remain without electricity, even though universal access could be achieved by investing only \$35 billion per year from 2008-2030.



Presentation to the Press of the World Energy Outlook 2009, Tanaka, Nobuo (www.iea.org). © OECD/IEA 2009.

According to the 450 ppm scenario presented in WEO-2009, keeping the global temperature rise approx. 2°C above pre-industrial levels would require fossil-fuel demand to peak by 2020. In addition, energy-related CO₂ emissions would have to decrease from 28.8 Gt in 2007 to 26.4 Gt in 2030, which means a 13.8 Gt drop from the Reference scenario. To achieve this, energy efficiency is the most significant factor, accounting for over half of total abatement by 2030. Low-carbon energy technologies also play a crucial role: electricity produced from renewables, nuclear and plants that use CCS, and a shift in car sales towards hybrids, plug-in hybrids and electric vehicles. In the 450 scenario, a cumulative incremental investment of \$10.5 trillion is needed in low-carbon energy technologies and energy efficiency by 2030. However, this cost is largely offset by economic, health and energy-security benefits. Mr. Tanaka added: "In our 450 scenario in the OECD countries, the price of carbon reaches \$50 per tonne of CO₂ in 2020 and \$110 in 2030."

WEO-2009 also identifies higher oil prices as a serious threat to the world economy. Natural gas – a special focus in WEO-2009 – will continue to help meet the world's sustainable energy needs. The recent and rapid development of unconventional gas resources (shale gas) in North America has transformed the gas-market outlook. The share of unconventional gas in total U.S. gas output rose from 44% in 2005 to around 50% in 2008 and, in the reference scenario, is projected to rise to almost 60% by 2030. The annual under-utilisation of inter-regional pipeline and LNG capacity could rise from around 60 bcm in 2007 to 200 bcm by 2015.

WEO-2009 also provides a focus on Southeast Asia due to its growing influence on energy markets. In the reference scenario, Southeast Asia's energy demand expands by 76% in 2007-2030. *Source: IEA Press Release, 10 November 2009 (www.iea.org).*

The United Nations Climate Change Conference in Copenhagen

The United Nations Climate Change Conference in Copenhagen (COP-15) resulted in a letter of intent, called the Copenhagen Accord, which is supported by a majority of member countries. United States President Obama drafted the Copenhagen Accord in conjunction with the heads of state from Brazil, China, India, and South Africa. *Source: White House: www.whitehouse.gov, Copenhagen Accord: unfccc.int...cop15_cph_auv.pdf.*

UN Secretary-General Ban Ki-moon said that "It may not be everything we hoped for, but this decision of the Conference of Parties is an essential beginning." By January 31, 2010, industrialised countries will submit their quantified emissions targets for 2020. A number of developing countries agreed to communicate their efforts to limit GHG every two years, also listing their voluntary pledges before January 31, 2010. A review of the accord was also called, to be completed by 2015. The review will consider the

long-term goal to limit the global average temperature rise to 1.5°C. In addition, developed countries have agreed to contribute US\$30 billion over the next three years to the Copenhagen Green Climate Fund. For long-term financing, developed countries agreed to mobilise US\$100 billion a year by 2020 to address the needs of developing countries. New technology actions will be established to accelerate development and transfer in support for adaptation and mitigation. The next annual UN Climate Change Conference will take place at the end of 2010 in Mexico City. *Source: UN Press release, 19 December 2009. (unfccc.int).*

According to the USCAN Climate Action Network, by January 31, 2010, 91 countries responsible for 80.5% of global emissions are likely to have committed to the accord. *Source: USCAN Climate Action Network (www.usclimatenetwork.org).*

EU: CO₂ limits for light commercial vehicles

The European Commission proposes legislation to reduce CO₂ emissions from light commercial vehicles, including vans and pick-up trucks. The format of the legislation is similar to the passenger cars regulation (AMFI Newsletter 1/2009). CO₂ emission limits depend on the weight of the vehicle, using a limit value curve to achieve the EU average of 175 g/km starting in 2014. The proposal also specifies a long term CO₂ emission target of 135 g/km to be reached by 2020. *Source: European Commission, Press release 28 October 2009. (ec.europa.eu).*

GASEOUS FUELS (NG, LPG, biomethane, DME)

Methane-diesel engines

Volvo Trucks will be the first manufacturer with an efficient diesel engine fuelled by a mixture of methane and diesel. Field testing will start in Sweden and the UK in 2010. Methane is available as natural gas and as biomethane.

In August 2007, Volvo Trucks presented seven demonstration trucks running on different biofuels. After an analysis of the results, focus is now on two fuels: DME and methane + diesel. CNG trucks using spark ignited engines have restricted driving distances of about 150-200 km. Volvo Trucks uses methane gas and diesel in a dual-fuel diesel engine, which increases the operational range by over 50%. With liquefied methane (LNG, LBG), the range will double, which makes this a realistic option for long-haul operations. Energy consumption is 25% lower than traditional gas operation.



Field testing with Volvo Trucks running on methane and diesel fuel. Photo courtesy of Volvo Trucks Global.

Volvo's technology is based on Euro 5 diesel engines converted for gas operation and equipped with tanks for either liquid methane (LNG/LBG) or pressurised methane (CNG/CBG). A separate fuel system is added with gas injectors in the inlet manifold. A small amount of diesel is injected and ignited by the compression, which in turn ignites the methane gas/air mixture. The power and driveability are identical to that of a conventional diesel truck. If the gas runs out, the truck can continue operating on diesel alone.

The amount of diesel required during operation varies. Volvo expects to be able to run on up to 80% methane gas once the technology has been refined and tested. Field tests in 2010 will start using up to 70% methane, with the remaining percentage accounted for by fossil diesel and diesel produced from renewable raw materials. Calculated over the whole fuel chain, the new technology could reduce CO₂ emissions by up to 80% in the long term compared to traditional diesel operation, if biogas and 100% biodiesel are used. *Source: Volvo Trucks Global, Press release, 15 December 2009. (www.volvo.com).*

Another announcement concerning gas-diesel engines was made by Optare plc, a bus designer and manufacturer in the UK. Optare reached an agreement with the Hardstaff Group giving it exclusive rights to the Hardstaff OIGI (Oil Ignition Gas Injection) dual-fuel conversion system for use in both new and existing passenger service vehicles. The Hardstaff dual-fuel system enables engines to run on a mixture of diesel and methane; benefits include reduced fuel costs and considerably lower emission and noise levels.

The Nottingham-based Hardstaff Group is working with Mercedes-Benz UK to convert its engines to run on both diesel and natural gas. As a result, the OIGI® conversion does not invalidate the manufacturer's warranty and is supported by a full insurance warranty on the engine and ancillary equipment provided by Hardstaff. This system has already been used successfully on heavy goods vehicles, which have accumulated over 40 million km. Optare has quoted the cost of a conversion to the Hardstaff OIGI® at

between £25,000 and £30,000. The first dual-fuel Optare Solo using the system has already been developed. Buses using the OIGI® system will reduce carbon levels by 50% compared to conventional diesel-only buses when utilising biomethane. *Source: Optare, Press release, 3 September 2009 (www.optare.com).*

IEA-AMF is also interested in heavy-duty gas engines. Annex XXXIX is conducting a pre-study entitled "Enhanced Emission Performance and Fuel Efficiency for HD Methane Engines."

One obstacle in the deployment of dual-fuel technology is that the European emission regulations are not designed to cope with engines operating on two fuels simultaneously and with a variable mixing rate. This will be an important issue to tackle for the industry. (*Editorial*).

Volvo again offers CNG-gasoline bi-fuel car

In October 2006, Volvo discontinued the production of bi-fuel CNG-gasoline (AMFI 3/2006). Now Volvo accepts gas conversions of the Volvo V70 model by Alternative Fuel Vehicles (AFV). AFV has started converting the Volvo V70 model into a bi-fuel version, the Volvo V70 2.5 AFV Bi Fuel, based on Volvo's 2010 model. The driving distance with gas is about 300 km, and together with gasoline, over 1000 km. The recommended price is 319,900 SEK (around 31,500 EUR). *Source: Volvo Cars, Press release, 30 November 2009 (www.media.volvocars.com).*

Plug-in CNG Hybrid Bus in India

Ashok Leyland Ltd unveiled the HYBUS, the country's first electric plug-in CNG hybrid bus, at New Delhi's Auto Expo 2010. The HYBUS concept vehicle combines a conventional CNG engine with an electric propulsion system. The lithium-ion battery powers the electrical drive system. Compared to a conventional bus, the HYBUS promises to offer fuel savings of 20-30%. *Source: NGV Global News, 13 January 2010 (www.ngvglobal.com).*

World largest "landfill gas to LNG" facility

North America's largest waste services company, Waste Management, Inc., and Linde North America (part of The Linde Group), a leading global gases and engineering company, announced that their joint venture company has begun producing clean, renewable vehicle fuel at its facility located at the Altamont Landfill near Livermore, California. The facility is the world's largest landfill gas (LFG) to liquefied natural gas (LNG) plant. The plant is designed to produce up to 13,000 gallons of LNG a day – enough to fuel 300 of Waste Management's 485 LNG waste and recycling collection vehicles in twenty California communities. *Source: The Linde Group, Press Release, 3 November 2009 (www.linde.com).*

Guidelines for LNG

Today, an increasing part of LNG carriers is driven by high-efficiency dual fuel engines. LNG has also been introduced as a ship fuel. LNG has the potential to help the shipping industry cope with the oncoming emission challenges. However, introducing LNG as fuel for shipping also requires that LNG be available in ports.

Germanischer Lloyd (GL) is preparing new guidelines for gas as a ship fuel together with supporting technical guidance on the application of the IMO regulations. In early June 2009, the IMO Committee on Marine Safety (MSC) paved the way for the application of natural gas as a ship fuel by adopting the "Interim Guidelines on Safety for Natural Gas-Fuelled Engines Installations in Ships" as Resolution MSC 285(86). These interim guidelines represent the first step towards a general code for gas as a ship fuel, the IGF Code, which is currently under development by the IMO.

The IMO interim guidelines apply to internal combustion engine installations in ships that use natural gas as fuel. The engines may use either a single fuel (gas) or dual fuel (gas and oil fuel), and the gas may be stored in the gaseous or liquid state. The guidelines are designed to supplement the relevant provisions of the International Convention for the Safety of Life at Sea (SOLAS), 1974 and the Protocol of 1988 relating thereto, as amended. *Source: GL, Press release, 25 November 2009 (www.gl-group.com).*

CNG and LNG fuelling station standards

The International Association for Natural Gas Vehicles IANGV has initiated a New Work Item Proposal (NWIP) with ISO to create standards for CNG and LNG fuelling stations. A preliminary meeting was held in January 2010 to consider developing the ISO standards for CNG and LNG filling stations. NEN (the Netherlands Standards Association) acts as the secretariat. *Source: NGV Global, 22 January 2010 (www.ngvglobal.com).*

ALCOHOLS, (BIO)GASOLINE

Research on alcohol fuels, incl. butanol, at Argonne

Argonne National Laboratory's Center for Transportation Research (CTR) has focused recent efforts on identifying how alcohol fuels affect the performance of modern, direct-injected spark-ignition engines. Starting with ethanol as the blending agent, the engine efficiency and emissions of a 2.2L GM Ecotech engine were evaluated under various load and speed conditions. Following this baseline study, the focus was expanded to include butanol, a four carbon alcohol that exists in four different isomers. Butanol is particularly interesting because it is less water soluble than ethanol and its energy density is only 17% lower than gasoline. N-Butanol and isobutanol were identified as the most promising isomers. With input from pioneers in the field of butanol production including BP and Gevo Inc., a test matrix was developed to evaluate the performance of butanol compared to ethanol blends. In addition to engine performance, efficiency and regulated emissions, recent tests also focused on non-regulated emissions. The most significant findings of this research project by the U.S. Department of Energy (DOE) were published in several ASME and SAE papers. Ongoing research is targeted at evaluating the behaviour of cold-start emissions among the different alcohol fuels. For this purpose, the test engine will be operated under transient conditions employing engine hardware in the loop approach. *Source: Thomas Wallner, Ph.D., Argonne National Laboratory, Energy Systems Division, 25 January 2010.*

The first biobutanol demo plant, Missouri

Gevo Inc. announced the start up of the first biobutanol demonstration plant in the world designed by retrofitting an existing demonstration scale ethanol plant to produce biobutanol. Gevo has demonstrated the viability of its technology at the pilot plant in St. Joseph, Missouri, with an annual output of one million gallons. This retrofit also represents the first step along the route to producing cellulosic biobutanol.

Gevo's biobutanol can be blended directly with gasoline and be used to make renewable hydrocarbons, diesel and jet fuel, chemical intermediates and biobased plastics. Biobutanol has a higher energy content than ethanol and a lower vapour pressure, which means lower volatility and evaporative emissions. Standard automobile and small engines can run on biobutanol blended into gasoline at any ratio.¹

Gevo's biobutanol is produced by fermentation in a process similar to that used for ethanol, and the majority of the equipment in an ethanol plant can be used for biobutanol production. Gevo's biorefinery process replaces the ethanol-producing yeast with yeast that produces biobutanol. Gevo has also developed a proprietary technology for the economical recovery of the product. The additional cost of this capital equipment is projected to be approximately 30 cents per gallon of installed ethanol capacity. Retrofit facilities will have the flexibility to produce either ethanol or biobutanol. *Source: Gevo Inc. Press release, 30 September 2009 (newenergyandfuel.com).*

¹ The high blending ratio of butanol is likely to cause problems in applications that are not specifically designed for high-concentration alcohol fuels. (*Editorial*).

M85 standard in China

China's ministry for standards has approved the nationwide use of methanol as a motor vehicle fuel mixed with gasoline in blends of up to M85, containing 85% methanol and 15% gasoline. Methanol is used for race cars in the USA, and was also popular as a gasoline alternative until the mid-1990s. Though it is commonly produced from natural gas, methanol can also be made from coal or wood. China is actively encouraging the use of alternatives to oil including solar power, hydrogen fuel cells and alternative fuels such as methanol. It also considers methanol a clean-burning fuel to reduce air pollution in cities. Geely Holdings already has developed flex-fuel methanol-gasoline systems and Chery Automobile is working on similar systems. *Source: Green Car Advisor, 10 November 2009 (blogs.edmunds.com).*

BIODIESEL ESTERS

Preventing increase in NO_x with biodiesel

Researchers from Purdue University and Cummins Inc. have developed an advanced "closed-loop control" approach for preventing an increase in NO_x emissions with biodiesel fuels. Biodiesel reduces particulate matter emissions, but increases NO_x emissions. Biodiesel contains oxygen, which is responsible for the majority of the higher NO_x emissions with biodiesel.

The researchers developed a physics-based, closed-loop control technique, which creates advanced models

for self-adjusting engine settings based on feedback from sensors. Software algorithms use data from the sensors to determine the fuel blend being combusted. If the fuel is changed, the system makes critical adjustments to fuel-injection timing, the air-to-fuel ratio and the amount of exhaust rerouted into the cylinders. Most late-model cars and trucks are already equipped with oxygen sensors in their exhaust systems as well as sophisticated electronic control modules, making the technique applicable for both current and future vehicles. The Purdue team also is studying how the techniques might be extended to electricity power generation and other alternative fuels. *Source: Purdue University, 25 January 2010 (www.purdue.edu).*

Oil dilution analysis by ORNL

Fuel dilution in engine oil can occur with biodiesel fuels, with fuel-efficient engines operating in advanced combustion modes, and with the regeneration of diesel particulate filters via e.g. in-cylinder post-injection. Dilution of the oil lowers the lubricating ability, and can lead to higher engine wear, increased oil consumption, and in extreme cases, engine failure.

Oak Ridge National Laboratory (ORNL) has developed a technology for analysing the dilution of automotive engine oil by fuel. This invention is known as the "Laser-Induced Fluorescence Fibre Optic Probe Measurement of Oil Dilution by Fuel". The oil dilution diagnostic grew out of an ongoing CRADA (cooperative research and development agreement) partnership between ORNL and Cummins. This technology is licensed to Da Vinci Emissions Services of San Antonio, Texas

The fluorescence measurement system developed by ORNL provides engineers with real-time feedback on the fuel level in oil so that fuel-efficient and low-emission engine calibrations can be developed to prevent oil dilution. The technique is faster, less expensive, and capable of detecting fuel contamination in lower amounts than other methods, according to ORNL. Conventional techniques require sampling and analysis of the oil at a lab, with up to a two-day wait before results are available. *Source: ORNL, Press release, 20 October 2009 (www.ornl.gov).*

LCA: algae compared to other bioenergy

A life cycle analysis was conducted to compare algae production with switchgrass, canola, and corn farming. The results indicate that these conventional crops have lower environmental impacts than algae in energy use, greenhouse gas emissions, and water, regardless of the cultivation location. Algae only performed favourably in total land use and eutrophication. The large environmental footprint of algae cultivation is driven predominantly by upstream impacts, such as the demand for CO₂ and fertilizer. To reduce these impacts, flue gas and, to a greater extent, wastewater could be used. To demonstrate the benefits of algae production coupled with wastewater treatment, the model was expanded to include three different municipal wastewater effluents as sources of nitrogen and phosphorus. Each provided a significant reduction in the burdens of algae cultivation, and the use of source-separated urine was found to make algae more environmentally beneficial than the terrestrial crops. *Source: Environmental Science and Technology, 19 January 2010 (pubs.acs.org).*

SYNTHETIC AND RENEWABLE DIESEL

The first BTL project in France

CHOREN Industries and the French group CNIM signed an agreement that covers the design and construction of a synthesis gas production facility using biomass feedstock. The BTL plant located in Bure-Saudron, in the northeast of France, is expected to produce at least 23,000 metric tonnes of bio-synthetic fuel annually. The biomass feedstock, mainly from wood residue, will come from the countryside between Paris and Strasbourg.

CHOREN will supply the technology for the thermochemical conversion of biomass into a high-purity, high-energy synthesis gas, which, after gas conditioning, is converted into BTL fuel via Fischer-Tropsch (FT) synthesis. The plan is to use a 45 MW gasifier similar to that used at CHOREN's own BTL plant in Freiberg, Germany. Construction is scheduled to start in 2011, with commissioning planned by the end of 2014. *Source: CNIM News, 21 December 2009 (www.cnim.com).*

Shell withdraws from Choren

Shell Deutschland Oil GmbH has sold its shares in CHOREN Industries GmbH to the remaining CHOREN shareholders. In spite of selling its shares, Shell will continue to provide technical expertise to develop this 2nd generation biofuel. *Source: Choren News, 5 November 2009 (www.choren.com).*

Tall Oil Diesel in Sweden

Swedish SunPine is the first company worldwide to produce biodiesel from crude tall oil processed from by-products in the pulp industry (AMFI 3/2008). The first tall oil diesel is ready at the SunPine's Piteå plant site in the first quarter of 2010 in northern Sweden. The crude tall oil diesel is upgraded to a high-quality hydrotreated green diesel fuel at a Preem refinery. The projected production of SunPine is 100,000 cubic meters of tall oil diesel per year. According to production manager Johan Lundbäck, a total of 350,000 cubic meters of tall oil is available in Scandinavia and it is difficult to competition of this volume is tough. Preem's new green diesel will contain up to 20% of green components based on the tall oil diesel. The green diesel can be used in all diesel engines. *Source: Chemrec News, November 2009 (www.chemrec.se).*

OTHER FUELS AND VEHICLES

Electrified cars from GM, Toyota and Fisker

General Motors Corporation (GM), Toyota, and Fisker Automotive announced their production schedules at the Los Angeles Auto Show in California in December 2009. GM announced that its Chevy Volt, an extended-range electric vehicle, will be available in California in late 2010.

The 2010 Toyota Prius Plug-in Hybrid vehicle (PHV) is based on the third-generation Prius, the latest version enables all-electric operation at higher speeds and longer distances than the conventional Prius hybrid. The all-electric mode is about 13 miles, after that, it reverts to the hybrid mode like a regular Prius. Toyota plans to deliver 150 vehicles to the United States in early 2010.

The Fisker Karma, which touts an all-electric range of 50 miles, will start deliveries in the third quarter of 2010. Many fuel-efficient and electrified concept and production cars were shown, including the Honda Personal-Neo Urban Transport, the CMT-380 with an extended-range electric vehicle that draws on a 30 kW microturbine once its battery pack runs low on power. The CMT-380 is an electric car with a quiet jet engine under its hood. These were not the only companies that showed electric innovations in Los Angeles Auto Show, 4-13 December 2009. *Source: EERE News, 16 December 2009 (apps1.eere.energy.gov).*

MISCELLANEOUS

NO₂, N₂O and ozone issues

The U.S. Environmental Protection Agency (EPA) announced a new national air quality standard for NO₂; the one-hour standard is now at a level of 100 ppb. The EPA opted not to modify the existing annual average standard of 53 ppb. *Source: US EPA, 22 January 2010 (www.epa.gov).* A report by Afsset, the French agency for occupational health and safety, expressed concerns about the NO₂ emitted by diesel vehicles. Afsset calls for strengthening the controls on NO₂ emissions, and to use only those diesel particle filters with low NO₂ emissions. *Source: "Emissions de dioxyde d'azote de vehicules diesel" (www.afsset.fr).*

N₂O emissions have a significant impact on climate, and it is suspected also to damage the top ozone layer. According to new research, anthropogenic N₂O emissions are now causing more damage to the ozone layer than controlled ozone-depleting substances, many of which have been phased out. The ozone-depleting potential of N₂O is one sixtieth that of CFC-11, but current emissions of N₂O total around 10 million metric tonnes, in comparison with 1 million metric tonnes of CFCs per year. *Source: (ec.europa.eu).*

The U.S. EPA has proposed a new limit for ground-level ozone (O₃). The "primary" ozone standard, which protects public health, would be at a level between 0.060 and 0.070 ppm measured over 8 hours. The existing standard is 0.075 ppm. The EPA has also proposed setting a "secondary" standard to protect the environment, especially plants and trees. This would be a new cumulative, seasonal standard expressed using weighted hourly concentrations cumulated during the ozone season, set at a level of 7-15 ppm-hours. *Source: US EPA, 6 January 2010. (www.epa.gov).*

2010 Annual Fuel Economy Guide

The U.S. DOE and EPA have listed the ten most fuel efficient vehicles, nine of which are hybrid models. The tenth is the Daimler Smart, which ranked 8th. *Source: Fuel Economy Guide 2010 (www.fueleconomy.gov).*

Transport Contact Group

The Transport Contact Group (TCG) met at the IEA Headquarters on January 27, 2010. The TCG is aimed at ensuring effective communication and coordination amongst the IAs and the secretariat in order to leverage resources and create synergies.

There are eight transport-related implementing agreements. Five (Advanced Fuel Cells, Advanced Motor Fuels, Advanced Materials for Transport, Combustion, Hybrid and Electric Vehicles) fall within the End-Use Working Party and three (Bioenergy, Hydrogen and Renewable Technology Deployment) within the Renewable Energy Working Party. While the other IAs are technology oriented, RETD is cross-cutting. At the January meeting, six of the eight transport IAs were represented.

RETD presented its study on Renewable Energy in Transport – RETRANS. The RETRANS-project was also presented at a general workshop on January 28th, following the TCG meeting (www.iea-retd.org).

From the Executive Committee

Germany is a new member of the IEA AMF implementing agreement. Dr. Katharina Böttcher, head of the Energy Recovery from renewable resources and energy issues division at the Federal Ministry of Food, Agriculture and Consumer Protection, signed the AMF implementing agreement on behalf of the German government on December 22, 2009. The German delegate is Mr. Birger Kerckow and the alternate, Mr. Ronny Winkelmann, both from Fachagentur Nachwachsende Rohstoffe. Germany is most welcome in the Executive Committee on Advanced Motor Fuels.

The next ExCo meeting will be held in Ottawa, Canada in May 2010.

Progress of Annexes

Annex XXVIII Information Service & AMF Website: Work will continue on four annual AMFI newsletters and the website will be maintained. Efforts geared to Alternative Fuels Information System will start with ethanol and biodiesel fuels.

Annex XXXIV: Biomass-Derived Diesel Fuels: The sub-task “Algae as a Feedstock for Biofuels – An Assessment of the State of the Technology and Opportunities” will be carried out as part of IEA Bioenergy Task 39. A single IEA joint AMF-Bioenergy report combining the work from the two IAs will be produced.

Annex XXXV Ethanol as Motor Fuel: The final report, including country reports, was revised and printed. An updated version of report is available on the website (Link). The report will be translated into Japanese and Thai.

Annex XXXVI Measurement Technologies for Emissions from Ethanol Fuelled Vehicles “METEV”: The project has been almost completed and a draft report has been distributed to the annex participants. An SAE publication will be prepared with the results.

Annex XXXVII Fuel and Technology Alternatives for Buses: Annex XXXVII, carried out by VTT in Finland, is the largest AMF project so far, and the first time that three IAs have been involved in the same annex (AMF, Bioenergy and HEV). DME and Jatropha biodiesel have been added to the fuel matrix. The preliminary results were presented for the AMF ExCo.

Annex XXXVIII Environmental Impact of Biodiesel Vehicles: The project has started. Regular diesel fuel chassis dynamometer tests have been carried out and 1st generation biodiesel tests are in progress. Second generation biodiesel tests will be conducted at a later date.

Annex XXXIX Enhanced Emission Performance: The first part of the project (the literature survey) is almost complete, and a draft report was distributed to the annex participants. A final report will be released publicly.

Germany – Welcome aboard!

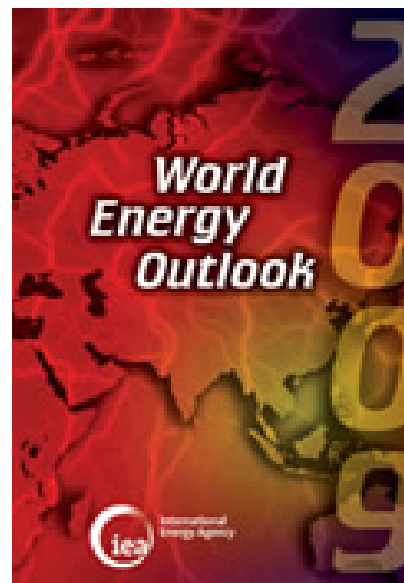
On December 22, 2009, the IEA legal department confirmed that the government of Germany has become a contracting party in the implementing agreement for a Programme of Research and Demonstration on Advanced Motor Fuels.

We welcome you to the Executive Committee on Advanced Motor Fuels.

Nils-Olof Nylund	Claes Pilo
Chairman IEA/AMF	Secretary

PUBLICATIONS

- IEA World Energy Outlook 2009. © OECD/IEA 2009. (www.iea.org).
- IEA Technology Roadmap: Electric and plug-in hybrid electric vehicles. © OECD/IEA 2009. (www.iea.org).
- IEA Bioenergy: Bioenergy News, Volume 21(2), December 2009. (www.ieabioenergy.com)
- IEA Bioenergy Workshop "Algae – the Future for Bioenergy?" The presentations of the workshop are available at www.ieabioenergy.com.
- U.S. Energy Information Administration: Annual Energy Outlook 2010, Early Release. (www.eia.doe.gov).
- UNEP, "Towards Sustainable Production and Use of Resources: Assessing Biofuels." (www.unep.fr).
- NGVA Europe organised an international seminar "A Trans-European Road to Renewable Mobility" during the EU funded project the GasHighWay (www.gashighway.net). 28th January 2010, Malmö, Sweden. Presentations are available at www.ngvaeurope.eu.
- Alternative Fuels and Advanced Vehicles Data Center: The U.S. DOE NREL has released an online directory of web-based tools, database searches, cost calculators, and interactive maps related to alternative fuels and advanced vehicles. (www.afdc.energy.gov)
- The DOE Launches Open Energy Information (www.openEI.org). (www.energy.gov).
- EEA Report No 9/2009 "Greenhouse gas emission trends and projections in Europe 2009." (www.eea.europa.eu)
- HEI report: Traffic-Related Air Pollution. (pubs.healtheffects.org)
- California ARB ranking of cars by smog and greenhouse gas emissions at www.DriveClean.ca.gov.
- Stakeholders' Conference on the Future of Transport, Brussels, 20 November 2009. Stakeholders' views are considered on measures relevant to the preparation of the new White Paper 2010. (ec.europa.eu)



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