

Crude oil price at new heights! Data from BP (www.bp.com) and EIA (www.eia.doe.gov). Figure by Editor.

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

AMFI provides four electronic Newsletters yearly describing recent news on advanced motor fuels, vehicles, energy and environmental issues in general. AMFI Newsletter is available on the website:

www.iea-amf.vtt.fi

CONTENTS

GENERAL INTEREST

- ✚ EC Directive proposes 10% biofuels in transport
- ✚ The U.S. Energy Independence and Security Act
- ✚ CO₂ limit for cars in Europe

GASEOUS FUELS (NG, LPG, biogas)

- ✚ Biomethane potential in Europe

ALCOHOLS, (BIO)GASOLINE

- ✚ Abengoa suspends bioethanol production in Spain
- ✚ Ethanol from syngas by GM and Coskata
- ✚ Ethanol from waste by UPM and L&T
- ✚ Ethanol from biogas by Oxford Catalysts and Novus
- ✚ Ethanol status in Sweden

BIODIESEL ESTERS

- ✚ High mutagenicity with neat vegetable oil
- ✚ EBB against US "B99" biodiesel exports

SYNTHETIC AND RENEWABLE DIESEL

- ✚ NExBTL plant of 800,000 t/a in Singapore

- ✚ Galp Energia selects UOP/Eni Ecofining™ for hydrotreated biodiesel
- ✚ Cold weather demonstration with renewable diesel in Alberta
- ✚ Algae biodiesel
- ✚ Biodiesel from peat
- ✚ Super enzymes

OTHER FUELS AND VEHICLES

- ✚ A bus with passenger car like CO₂ emissions

MISCELLANEOUS

- ✚ Heavy-duty Euro VI proposal
- ✚ Ultrafine particles linked to heart disease.

IEA & IEA/AMF News

- ✚ IEA/AMF news
- ✚ Contracting Parties of IEA/AMF
- ✚ IEA level news

PUBLICATIONS

GENERAL INTEREST

EC Directive proposes 10% biofuels in transport

On 23 January 2008, the European Commission released a proposal for a directive on renewable

energy. This proposal calls for a binding target of a 20% share of renewable energy by 2020 in the EU, including a minimum target of 10% for biofuels in transport. The proposal is an answer to the Climate Strategy released by EC in January 2007 (AMFI 1/2007). The targets are multi-fold compared to the current shares of 8.5% renewable energy and less than 2% biofuels in transport. As concerns the transport sector, each Member State has the same target value of 10% biofuels by 2020. It is noted that in the transport sector; (1) GHG emissions are increasing most rapidly; (2) oil dependence of the transport sector is one of the most serious problems in energy supply that the EU faces; (3) without obligations, biofuels in transport would hardly be developed due to economical reasons.

The proposal brings out several issues related to sustainability, e.g., regarding GHG emissions and biodiversity. The proposal points out that the environmental sustainability criteria should apply not only for biofuels in the transport sector, but to bioliquids in general, also in the heating or electricity sectors. Biofuels and other bioliquids can only qualify for incentives when it can be guaranteed that they do not originate in bio-diverse land. The proposal requires that the GHG emission saving from the use of biofuels and other bioliquids shall be at least 35%.

Proposal for renewable energy in the EU, January 2008: Annex VI – Specifications for a 10% blend of biodiesel in diesel.

	Minimum	Maximum
Measured cetene	51	
Calculated cetane	46	-
Density at 15°C, kg/m ³	820	845
Polycyclic aromatic hydrocarbons, %wt	-	8
Sulphur content, mg/kg	-	10
Flash point, °C	>55	-
Carbon residue in 10% distillation residue, %	-	0.3
Ash content, mg/kg	-	0.01
Water content, mg/kg	-	200
Total contamination, mg/kg	-	24
Copper strip corrosion (3h-50°C)		class 1a
Lubricity EN ISO 12156-1, µm	-	460
Kinematic viscosity at 40°C, mm ² /s	2	4.5
Distillation		
% recovery at 250°C	-	<65
% recovery at 350°C	85	-
Temperature for 95% recovery, °C	-	360
FAME content EN14078, %	5	10
Cloud point, °C		Ref. national standard
Cold filter plugging point, °C		Ref. national standard
Phosphorus content, mg/kg	-	0.2
Acid index, mgKOH/g	-	0.05
Peroxides EN ISO 3960	-	20
Oxidation stability - EN14112, h	20	-
Oxidation stability by ASTM D2274 at 115°C, g/m ³	-	25
Acid index variation, mgKOH/g	-	0.12
Injector fouling		Detergent additive package
Additivation for stability		Anti-oxidant equivalent to BHT at 1000ppm

The proposed directive includes calculation principles of the share of energy from renewable sources, including a table of the energy contents that shall be used in calculation. Annexes of the proposal also include default values and methodology for calculation of GHG savings. It is pointed out that when biofuels are supported, preference should be given to fuels giving additional benefits, such as enlargement of feedstock options.

It is necessary to allow higher blends of biodiesel than those currently envisaged by the standard EN590/2004 (i.e., 5% vol.) to achieve the 10% target of biofuels in the EU. The proposed directive also includes specifications for two grades of diesel fuel, one containing 0-7% FAME (Annex V, designation 7% blend), and one containing 5-10% FAME (Annex VI, designation 10% blend). The Member States should ensure that the 7% blend is available by 31 Dec 2010 in filling stations with more than two pumps that sell diesel fuel. By 31 December 2014, the 10% blend containing 5-10% FAME **or other diesel fuel with at least 5% biofuel content by volume** shall be available, respectively. In fulfilling obligations on quota of biofuels, the contribution made by biofuels produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material shall be considered to be twice that made by other biofuels. The directive is expected to come into force in 2010. (*Author's comment: The wording on "10% blend" and "or other diesel fuel with at least 5% biofuel" in the proposal is unclear, and should be clarified to indicate specification of fuel grade and type of biofuels allowed.*) Source: Proposal for a Directive on the promotion of the use of energy from renewable sources, Brussels, 23.01.2008, version 15.4. (ec.europa.eu/energy/climate_actions/).

Criticism against the non-sustainability of traditional biofuels have been discussed in e.g. AMFI Newsletter 4/2007. A new report questioning sustainability of biofuels, "Are Biofuels Sustainable", was published in January 2008 by the Environmental Audit Committee in UK. (www.publications.parliament.uk). The Energy Commissioner Andris Piebalgs, responded to this

report by saying: "The Commission strongly disagrees with the conclusion that the overall environmental effect of existing biofuel policy is negative". The Commission points out that the British report does not mention that until other technologies became competitive, the only alternative to biofuels is oil. Regarding the proposed directive on renewable energy the Commission states: "The directive will include, as a key element, a robust sustainability scheme that not only prevents damaging land use change, but also other environmental damages, such as the destruction of rain forests. Currently biofuels are already traded with no such EU standards or sustainable schemes". Source: IP/08/64, 21 January 2008. (<http://europa.eu>)

The U.S. Energy Independence and Security Act

In the U.S., President Bush signed the Energy Independence and Security Act of 2007, which will improve vehicle fuel economy and help reduce U.S. dependence on oil. The bill responds to the challenge of the "Twenty in Ten" initiative. A mandatory Renewable Fuel Standard (RFS) requires fuel producers to use at least 36 billion gallons of biofuel in 2022. This represents a nearly 5-fold increase over current levels. The law sets standards starting at 9 billion gallons of renewable fuel in 2008 and 36 billion gallons by 2022. Within the latter target, 21 billion gallons is required to be obtained from cellulosic ethanol and other advanced biofuels. (http://energy.senate.gov/public/_files/RL342941.pdf)

A fuel economy standard is set to 35 miles per gallon (equivalent to 6.8 litre/100 km) by 2020. This will increase fuel efficiency by 40%. By addressing renewable fuels and CAFE standards, this bill will build on progress made by the Energy Policy Act of 2005, which represented the first major energy security legislation in more than a decade. The bill includes provisions to improve energy efficiency in lighting and appliances, as well as requirements for Federal agency efficiency and renewable energy use that will help reduce greenhouse gas emissions. Source: The White House, 19 Dec 2007 (<http://www.whitehouse.gov/infocus/energy/>).

CO₂ limit for cars in Europe

The draft legislation on CO₂ emission limit for cars, published in December 2007, takes vehicle mass into account when defining a limit value curve. The curve is set in such a way that a fleet average of 130 g/km CO₂ emission limit is achieved. A penalty for not meeting the limit curve is included in the proposal. Source: IP/07/1965, 19 December 2007 (europa.eu). Earlier, in February 2007, the EC proposed a limit of 130 g CO₂/km for cars with complementary measures to further cut emission by 10 g CO₂/km to achieve the final target of 120 g CO₂/km by 2012 (AMFI 2/2007). On 25 October 2007, the European Parliament backed a non-binding report, which insisted that the limit should be more stringent: 125 g CO₂/km by 2015 with engine and vehicle technology alone (AMFI 4/2007).

GASEOUS FUELS (NG, LPG, biogas)

Biomethane potential in Europe

In January 2008 NGV America cited the German report on the potential of biogas in Europe. The report prepared by the Öko-Institut and the Institut für Energetik in Leipzig concluded that within 20 years, a substantial share of Europe's natural gas consumption could be covered by locally produced biogas/biomethane. Biomethane has many benefits, e.g., production can be decentralized, yields are high (double when compared to ethanol from crops) and large variety of feedstocks can be used.

The study states that Europe's potential for the sustainable production of biomethane is 17.7 trillion cubic feet per year (~440 million toe per year), which is about the amount of natural gas currently consumed by the EU. This would result in a reduction of 15% of Europe's CO₂ emissions. One problem with biomethane in Germany is that the heating value of biomethane is higher than allowed for Germany's natural gas pipeline system. Germany's upper limit on the heating value of gas fed into the pipelines should be changed before introduction of biomethane. Source: NGV America, 11 January 2008.

ALCOHOLS, (BIO)GASOLINE

Abengoa suspends bioethanol production in Spain

The Spanish engineering and energy company Abengoa Bioenergy has suspended bioethanol production at the largest of its three Spanish plants, the Salamanca plant. Production was unprofitable due to high grain prices and uncertainty about the national market for ethanol. Abengoa has stated that the bioethanol market would need mandatory blending in Spain.

The government has said it is considering this, but so far discussion has considered a mandatory 2% biofuel content, not the 5.75% target the European Union has set for 2010. *Source: Biofuels International, 3 October 2007 (www.biofuels-news.com).*

Ethanol from syngas by GM and Coskata

GM announced a partnership with Coskata Inc. to develop processes to produce ethanol from syngas. The Coskata process can combine a variety of gasification technologies with Coskata proprietary microorganisms and bioreactors, which again can be used to produce ethanol from carbon-based feedstocks, such as garbage and plant waste, for less than \$1 a gallon. *Source: Green Car Congress, January 13, 2008. (www.greencarcongress.com).*

Ethanol from waste by UPM and L&T

UPM and Lassila & Tikanoja (L&T) have developed a new concept to produce ethanol and energy from commercial and industrial waste, such as paper, cardboard, wood and plastic. UPM and L&T have studied the concept under laboratory conditions in cooperation with the Technical Research Centre of Finland (VTT) and will now begin extensive testing at VTT's Rajamäki pilot unit. The objective is to be ready by the end of the year to decide on building a commercial scale plant. *Source: UPM Press release, 30 January 2008. (www.upm-kymmene.com).* The full scale plant would use 300 000 tons of waste and produce 20 million litres of ethanol annually. *Source: Kauppalehti, 31 January 2008.* UPM is one of the world's leading forest products groups and the biggest user of recycled fibres in printing paper production in Europe. Lassila & Tikanoja specialises in environmental management and property and plant support services.

Ethanol from biogas by Oxford Catalysts and Novus

Oxford Catalysts Group PLC has signed a Strategic Alliance Agreement with Novus Energy, LLC, to develop technology for the conversion of biogas derived from organic wastes to ethanol and higher-chain alcohols. Oxford Catalysts offers a novel class of catalysts made from metal carbides which can match or exceed the benefits of traditional precious metal catalysts for applications such as Fischer-Tropsch processing or hydro-desulfurization (HDS) at a lower cost. *Source: Green Car Congress, 7 January 2008. (www.greencarcongress.com).*

Ethanol status in Sweden

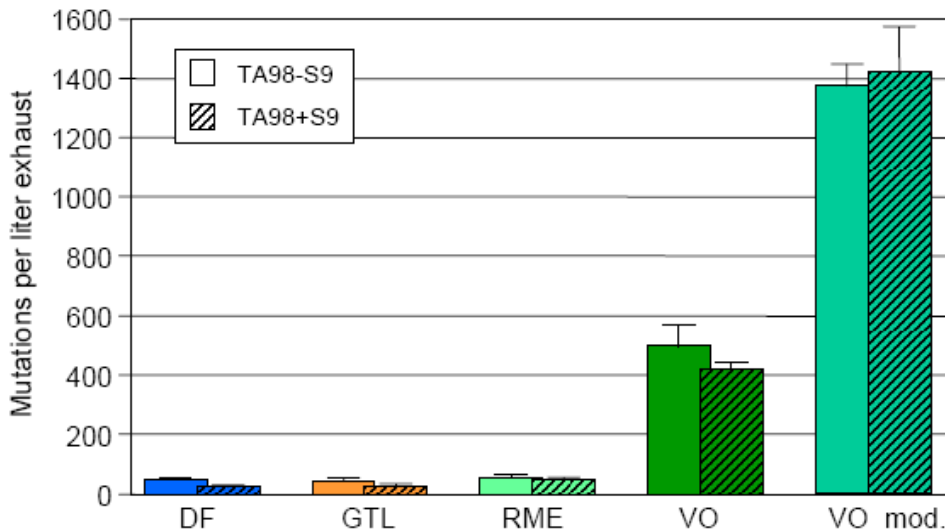
In Sweden, a vivid debate on ethanol is still going on (see AMFI 1/2006). Now this debate is strongly linked to promotion of environmental friendly cars, so called "Miljöbilar". Benefits such as quittance of congestion and parking fees have lead to a situation in which "Miljöbilar" have taken a 20% share of the sales of new cars in Sweden. Most of these are FFV cars capable of running on E85 fuel. Buyers of FFV cars (and other cars classified as environmentally friendly) get a bonus of about 1000 EUR, and E85 fuel is some 8 Eurocents cheaper (on energy basis) than gasoline in Sweden. In October 2007, there were some 73 000 FFV cars and over 1000 E85 refuelling stations in Sweden. However, the major part of fuel ethanol in Sweden is consumed as a low level blend of 5% in gasoline, not as E85. Some 80% of ethanol is imported. There are strong opinions in Sweden, both for and against ethanol, especially as concerns ethanol imported from Brazil. Recently attention has been given to the fact that FFV cars are mid-size or larger cars with unnecessarily high tailpipe CO₂ emissions, and that aldehyde emissions are high. *Sources: Åsman, P. Vägverket report, 12 November 2007. SvD Näringsliv, 10 November 2007. Kauppalehti, 21 January 2008.*

BIODIESEL ESTERS

High mutagenicity with neat vegetable oil

Krahl et al. reported on high mutagenicity when using unesterified, neat plant oil as motor fuel. In Germany, a substantial amount of straight vegetable oil is used in modified and unmodified diesel engines. Krahl et al. investigated exhaust emissions from Euro 3 heavy-duty diesel engine, a Mercedes-Benz OM 906, using common diesel fuel (DF), a GTL fuel (gas-to-liquid), rapeseed oil methyl ester (RME) and two different qualities of neat rapeseed oil (VO). Cold pressed rape seed oil led to 10-fold higher mutagenicity than diesel fuel. Using refined and flow improved vegetable oil the mutagenicity increased 30-fold versus diesel fuel. *Source: Krahl et al. Presentation in the Netherlands, 10 January 2008. In addition, Munack et al., SAE Paper 2007-01-4042, October 2007.*

Mercedes Benz OM 906 LA, Euro III, ESC-Test



Mutagenicity of particulate extracts from Euro 3 heavy duty engine using diesel fuel (DF), GTL, RME and neat vegetable oil (VO). Krahl et al., IEA Bioenergy Task 39, presentation in the Netherlands, 10 January 2008.

EBB against US "B99" biodiesel exports

The EU biodiesel industry representatives agreed to initiate legal action against the so called US B99 trade. Since 2004, US biodiesel can be subsidised up to \$264 per m³ by adding a "drop" of mineral diesel to biodiesel. Such a blend can then be exported to Europe where it is also eligible to European subsidy schemes. In 2007, there was a surge of "B99" exports to the EU. In most cases B99 blends are sold in Europe as "pure biodiesel" at a substantial discount (more than €120-180/tonne). In some cases price is lower than for the raw materials for producing biodiesel. This is disrupting the margins of European biodiesel producers, putting most EU producers out of business, and as a consequence, biodiesel industrial capacity remains largely unutilized and production may start stagnating. Until now, the US Congress has not provided a sustainable answer, and the support scheme could even be extended beyond 2008. Therefore, the EU biodiesel industry decided to lodge a complaint to the European Commission against US "B99" exports, which are jeopardising the concept of international trade in biodiesel. *Source : EBB Press release on 3 December 2007. (www.ebb-eu.org).*

SYNTHETIC AND RENEWABLE DIESEL

NExBTL plant of 800,000 t/a in Singapore

Neste Oil plans to build up the world's largest biofuel facility in Singapore. The plant, which is based on Neste Oil's proprietary NExBTL technology, will have a design capacity of 800 000 t/a. The Singapore plant is expected to be completed by the end of 2010. In Finland, one NExBTL plant with a capacity of 170 000 t/a, is already running, and a second plant of the same size will start in 2009. Palm oil will be the main feedstock for the Singapore plant. Neste Oil has committed to use RSPO certified palm oil as soon as sufficient quantities are available. Singapore is the world's third-largest center of oil refining, and occupies a central location in terms of product and feedstock flows and logistics. The government of Singapore has played an important role in promoting Neste Oil's investment of €550 million.

NExBTL technology is the first commercial new-generation renewable diesel production process, and can use any vegetable oil or animal fat as its input. The end-product, NExBTL diesel, is a high-quality fuel as concerns end-use properties, and can be used as such in existing vehicles and be distributed in existing logistics systems. When produced from sustainable raw materials, its lifecycle GHG emissions are 40-60% less than those of conventional diesel fuel. *Source: Neste Oil Corporation, Stock Exchange Release, 30 November 2007 (www.nesteoil.com).*

Galp Energia selects UOP/Eni Ecofining™ for hydrotreated biodiesel

Portugal's largest refiner, Galp Energia, will use the UOP/Eni Ecofining technology to produce hydrotreated biodiesel from vegetable oils. Ecofining technology was developed by UOP and Eni S.p.A, and the process is installed at Eni S.p.A.'s

facility in Livorno, Italy. Galp Energia will process 6,500 barrels per day (~300 000 t/a) of hydrotreated biodiesel from vegetable oils. *Source: UOP LLC press release, November 28, 2007 (www.uop.com).*

Cold weather demonstration with renewable diesel in Alberta

The Alberta Renewable Diesel Demonstration in Canada studies the cold weather performance of renewable diesel in on-road conditions over 10 months using 60 trucks. Several types of renewable diesel, including Neste Oil's NExBTL, will be tested. The Canadian government is planning to require 2% of renewables in diesel by 2012. *Source: Neste Oil, Press release, 23 January 2008.*

Algae biodiesel

- Shell and HR Biopetroleum have formed a company, Cellana, to develop a pilot facility on the Kona coast, Hawaii, to grow marine algae and produce vegetable oil for conversion into biofuel. The site is near existing commercial algae enterprises, primarily serving the pharmaceutical and nutrition industries. Algae strains used will be indigenous to Hawaii or approved by the Hawaii Department of Agriculture. The facility's small production volumes will be used for testing. *Shell Press release, 11 December 2007 (www.shell.com).*
- Green Star Products (GSPI) will build a 100-acre commercial algae facility in the Midwest. The Algae Facility will be constructed adjacent to an existing biodiesel plant and will use the CO₂ emitted from this plant to feed a portion of the algae facility needs. *November 13, 2007 (www.greenstarusa.com/news/07-11-13.html).*
- Solazyme of San Francisco, a developer of algae-based biodiesel, announced the first road test of the fuel. A blend of the algae biodiesel fuel, called Soladiesel(tm), was tested in a Mercedes-Benz diesel car under typical driving conditions. The biodiesel blending level of 5% blend was used. The company is producing thousands of gallons of algal oil, and recently signed a biodiesel feedstock development and testing agreement with Chevron. *Source: <http://www.prnewswire.com/mnr/solazyme/30888/>*
- Chevron and NREL will collaborate to define suitable algae strains for production of biofuels (www.chevron.com).
- PetroSun BioFuels has entered into a joint venture to build up a biodiesel refinery in Arizona. The feedstock will be algal oil produced by PetroSun BioFuels at company owned and operated algae farms. The refinery will have an annual production capacity of 30 million gallons. PetroSun BioFuels will process the residual algae biomass into ethanol. The biorefinery and algae farm complex will generate all of its own electrical and heat requirements, utilize non-potable or saltwater, consume no fossil fuels and will be carbon neutral. The joint venture anticipates that all permits will be approved and construction on the biorefinery should commence during the third quarter of 2008. *Source: <http://www.marketwire.com>.*
- UOP is also developing technology for the production of renewable Jet Propellant-8 fuel from vegetable and algal oils funded from the Defense Advanced Research Projects Agency (DARPA). *Source: UOP LLC press release, November 28, 2007 (www.uop.com).*

Algae as biodiesel feedstock was discussed in AMFI 3/2007.

Biodiesel from peat

Finnish Vapo, a supplier of local and renewable fuels, bioelectricity and bioheat, is developing a process to manufacture biofuel from peat. Vapo intends to build a facility to produce "biocrude" from peat. The final investment decision will be made within a few years. The facility would produce "biocrude" from such biofeedstocks as peat and wood. The "biocrude" would be then sold to an oil refinery, where it would be converted into diesel fuel for vehicular use. *Source: Vapo, Press release, 10 December 2007. (www.vapo.fi).*



Production of peat. Picture by courtesy of Vapo (www.vapo.fi).

Finland has large peat reserves, and thus peat is discussed as an option dependency on fossil oil. A Finnish study concluded that impact of peat-based I The GHG balance is worse than for fossil diesel in many of the fuel chains evaluated. If peat is produced from cultivated peatlands, which are GHG sources, the impact is lower than if peat is produced from forestry-drained peatland. The GHG impact of the peat F-T-diesel can be lowered, if the peatland is utilised for afforestation or cultivation of reed canary grass after peat production. CCS can decrease the GHG impact of peat F-T-diesel to the same level as with fossil diesel, or even below. In Finland, peat represents 26% of the land area. The energy potential of peat in Finland is estimated to be around 1250 Mtoe. Peat covers 5-7% of energy consumption in Finland. *Source: Kirkinen et al. (2007) VTT Research Notes 2417. (www.vtt.fi)*

Peat means humus material accumulated in wet environment in absence of oxygen (dead plants do not decompose in these conditions). The formation of peat is a very slow process, about 10 years for 1 cm layer thickness meaning that it takes some 1 000 to 5 000 years of peat to re-grow. Peatlands cover around 3% of the global land mass (some 4 million km²). About 7% of the total peatland area is utilized for agriculture and forestry. EU and IPCC classify peat as a fossil fuel. Usually after peat production, peatlands are forested or cultivated. The world's peatlands are huge reserves of carbon, and emitters of methane. For instance in 1997, the peat and forest fires in Indonesia released carbon equivalent to 13-40% of the amount released by global fossil fuel burning. One issue concerning the world's largest peat bog, located in Western Siberia, is thawing after 11,000 years of frost. This could release billions of tonnes of methane into the atmosphere. *Source: Wikipedia and www.peatlandsni.gov.uk.*

Super enzymes

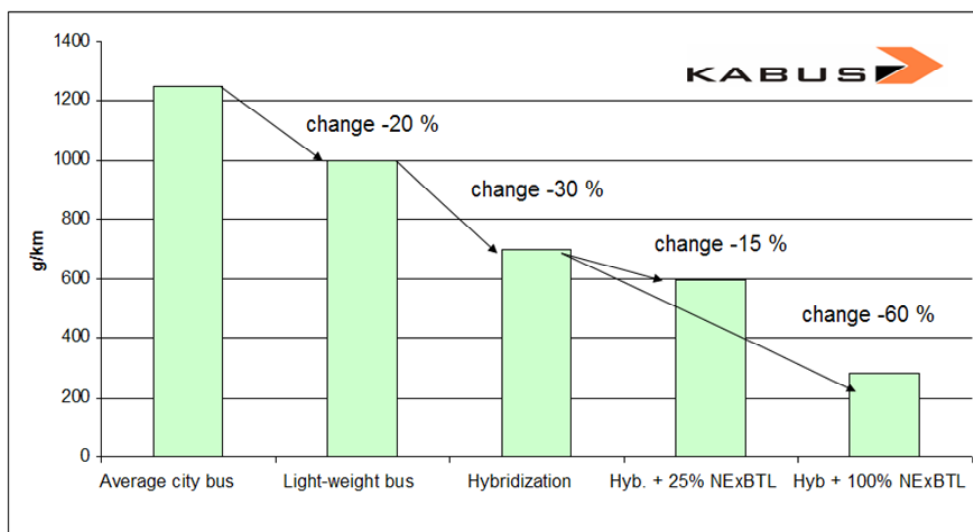
Shell and Codexis are looking for super enzymes to convert biomass to biofuels (www.shell.com).

OTHER FUELS AND VEHICLES

A bus with passenger car like CO₂ emissions

The Finnish bus company Koiviston Auto -Yhtymä, manufacturing its own buses under the name Kabus, has developed a parallel hybrid bus. The hybrid is based on Kabus' full aluminum light-weight city bus. The curb weight of the 12 meter long hybrid bus is just below 9,000 kg. Super capacitors are used for energy storage. The bus is now being tested in the field. The fuel is next generation hydrotreated NExBTL. The Figure shows how CO₂ emissions can be reduced from some 1,200 g/km for an ordinary diesel bus to a passenger car like value of less than 300 g/km through light-weight construction, hybridization and using a CO₂ efficient biofuel (estimated CO₂ reduction for NExBTL 60%). *Source: www.motiva.fi.*

Measures to reduce carbon dioxide emissions



Measures to reduce carbon dioxide emissions from buses (Figure by Tommi Mutanen).

MISCELLANEOUS

Heavy-duty Euro VI proposal

In November 2007 the European Commission published its proposal for Euro VI heavy-duty emission standards, which would apply from October 2014 for all vehicles sold as new. The major issues in the proposal are tightening the limits for particulate matter (PM) and nitrogen oxides (NO_x). A reduction of 66% in PM emissions will be required. For this, some kind of particulate filter will be needed. A limit for the number of particles is expected later on. This is to prevent development of open filters to meet the particle mass limit but without capturing the high numbers of ultra fine particles.

A reduction of 80% of diesel engine NO_x emissions will most probably require internal measures on the engine itself (e.g., cooled EGR) as well as exhaust after-treatment technologies (e.g., SCR). Emissions from gas fuelled engines will be tightened as well. There is also a requirement that vehicle on-board diagnostic (OBD) information and vehicle repair and maintenance information shall be available through websites in a standardized format (the so-called 'OASIS format').

The world-wide harmonized testing methods (WHSC, WHTC) are foreseen for Euro VI type approvals. This requires correlation factors with current test cycles to be defined. The proposal is also introducing requirements for the type-approval of exhaust after-treatment components such as catalysts and diesel particulate filters (DPFs). Also durability requirements are tightening.

Source: *Proposal for a Regulation on type-approval of engines and motor vehicles with respect to emissions from heavy-duty vehicles (Euro VI) and on access to vehicle repair and maintenance information* (ec.europa.eu).

	Limit values						
	CO (mg/kWh)	THC (mg/kWh)	NMHC (mg/kWh)	CH ₄ (mg/kWh)	NO _x (mg/kWh)	NH ₃ (ppm)	PM mass (mg/kWh)
ESC (CI)	1500	130			400	10	10
ETC (CI)	4000	160			400	10	10
ETC (PI)	4000		160	500	400	10	10

Ultrafine particles linked to heart disease.

UCLA researchers have published a study claiming that the ultrafine particles from vehicle emissions may trigger reactions, which can lead to heart attack and stroke. Source: *Jan. 17 online edition of the journal Circulation Research referred in www.newsroom.ucla.edu.*

IEA & IEA/AMF News

IEA/AMF news

The 34th ExCo meeting was held in Honolulu, USA on 13-15 November 2007. Observers from Austria, New Zealand and Thailand attended the meeting. Visits to the Oceanic Institute and Pacific Biodiesel were included in the technical program. A number of general presentations are available in the Members' Area of the AMF website, e.g., reports from Austria, New Zealand, Thailand, Japan, China and Hawaii, as well as presentations on the European situation for transportation fuels, algae as a feedstock, 2nd generation cellulosic biofuels and the IEA initiative "Raising Awareness".

Status of the ongoing Annexes is as follows:

- Annex XXVIII "Information Service & AMF (AMFI)"
 - Activities on newsletters and updating the AMF Website continue in 2008. AMF country reports submitted by Partners will be placed on the Member Area of the website.
 - A condensed version of the "AMF Outlook Report" will be published in early 2008.
 - Atrax is carrying out independent work on standardisation of alternative fuels. The final report will be ready in April 2008.
- Annex XXXIII Particle Emissions of 2-S Scooters. Annex is prolonged until the end of 2008. 3rd Report of the Annex has been submitted and is located in the Members' Area of the AMF website.
- Annex XXXIV Biomass Derived Diesel Fuels. A status report was presented. A draft report is expected during spring 2008.
- Annex XXXV Ethanol as Motor Fuel. A status report was presented. The Operating Agent is expecting country reports on ethanol from AMF countries. A draft report of Annex is expected in June 2008.
- A decision to start Annex XXXVI, "Measurement Technologies for Emissions from FFVs" was taken. Low temperature emission performance of FFVs was added to the task.

At the meeting in Hawaii, Dr. Fulvio Giavazzi resigned from the Committee. The Chairman, Steve Goguen, expressed the Committee's sincere thanks for a long service to the Committee.

The 35th Executive Committee meeting will be held in May 2008 in Austria.

Contracting Parties of IEA/AMF

Austria has joined the AMF Implementing Agreement. Delegate of Austria is Dr. Andreas Dorda from the Austrian Federal Ministry for Transport, Innovation and Technology.

The following new Delegates are welcomed:

- New Delegate for Italy is Mr. Fausto Alberici, ENI SpA
- New Delegate for Japan/NEDO and Vice Chairman is Mr. Kazunori Nagai, NEDO
- New Delegate for Japan/LEVO is Mr. Nobuichi Ueda, LEVO

IEA level news

A new IEA report "Energy Technologies at the Cutting Edge" was distributed (www.iea.org). The China NEET workshop took place on 1-2 November 2007 in Beijing, China, in collaboration with the Ministry of Science and Technology (MOST) and the China Coal Research Institute (CCRI). A NEET workshop will take place in India in April 2008.

IEA disseminates information on behalf of the Implementing Agreements to raise awareness, e.g. in the Cutting Edge global distributions, IEA Secretariat, IEA public website, IMPAG site and in the OPEN Bulletin.

Austria: Most welcome!

The IEA Legal Office has confirmed the participation from 1st January 2008 of the Government of Austria as Contracting Party in the Implementing Agreement for a Programme of Research and Demonstration on Advanced Motor Fuels.

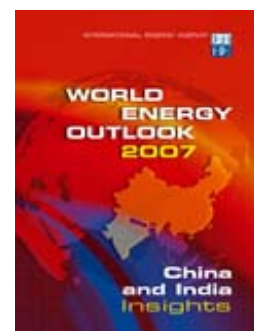
We wish you most welcome as Delegate and Alternate in the Executive Committee on Advanced Motor Fuels and look much forward to our coming ExCo meeting in Austria.

Stephen Goguen
Chairman IEA/AMF

Claës Pilo
Secretary IEA/AMF

PUBLICATIONS

- **IEA World Energy Outlook 2007 -- China and India Insights**, November 2007. © OECD/IEA, 2007 (www.iea.org)
- **Energy Technologies at the Cutting Edge**. © OECD/IEA, 2007 (www.iea.org).
- **Market analysis Oils and Fats for Fuel**, MVO report, December 2007 (www.mvo.nl)
- **Biofuel Cities European Partnership** officially launched. The Biofuel Cities European Partnership will contribute to driving debate and progress in the biofuels sector, and supports biofuel stakeholders through information, events, tools and publications. Press release, 08 November 2007 (www.iclei-europe.org).
- **JARI China Round Table 2008**. Presentations available at www.jari.or.jp.
- **Passenger car ownership estimation toward 2030 in Japan**. Keiko Hirota, Studies in Regional Science, Vol. 37, No 1, 2007, 25-39.



IEA/AMF Delegates

Austria – Austrian Federal Ministry for Transport, *Mr. A. Dorda*

France – ADEME
Mr. P. Coroller

Japan – LEVO
Mr. Nobuichi Ueda

Switzerland – University of Applied Sciences, *Mr. J. Czerwinski*

Canada – Natural Resources Canada, *Mr. G. Baker*

Italy – Eni SpA
Mr. F. Alberici

Spain – IDAE
Mr. J. L. Plá de la Rosa

United Kingdom – Department for Transport, *Mr. C. Parkin*

Denmark – Technical University of Denmark (DTU), *Mr. J. Schramm*

Japan – NEDO
Mr. Kazunori Nagai

Sweden – Swedish Road Administration, *Mr. P. Åsman*

USA – DOE
Mr. S. Goguen

Finland – VTT
represented by *Mr. N.-O. Nylund*

Editor: TEC TransEnergy Consulting Ltd., Tekniikantie 14, FIN-02150 Espoo. info@teconsulting.fi, www.teconsulting.fi - P Aakko-Saksa