

World Oil Consumption by End-Use Sector, 2002-2025. *International Energy Outlook 2005* ([www.eia.doe.gov](http://www.eia.doe.gov))

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

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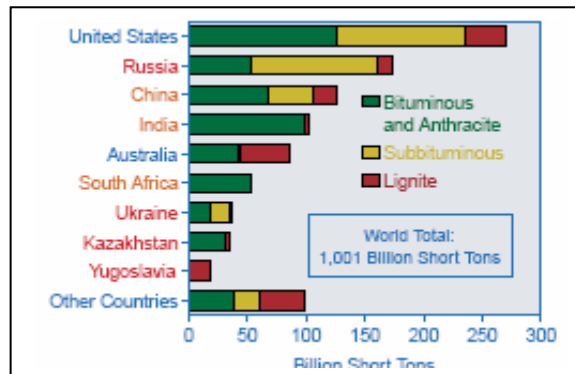
Update of AMF website

### PUBLICATIONS

Coal to liquids – CTL boom in sight?

Coal is the most abundant fossil energy source in world with reserves around 1 trillion tons distributed in many countries, i.a. US, Russia, China, India and Australia (vs. countries of recently signed joint energy and climate pact, see page 6). It is estimated that coal resources would last over 100 years at current demand. However, if utilisation of coal strongly increases with increasing demand in electricity (a major problem e.g. in China) and liquid fuels, the reserve life of coal begins to drop dramatically. However, coal and other non-conventional energy resources, like tar sands, could delay the peak of liquid fuel supply for decades.

Increasing oil prices, (currently over 60 \$/barrel), is speeding up progress with alternative energy sources. Global energy demand is estimated to grow by some 60% from 2002 to 2030 according to IEA forecast (~ \$16 trillion investments required). Major part of the increase in oil demand is expected for the transportation sector. This in conjunction with anticipated peak in oil has lead to increasing interest in Gas-to-Liquids (GTL) technologies, and recently, also in Coal-to-Liquids (CTL) technologies. Development of coal technologies are driven strongly by policies. E.g. in USA, President Bush recently signed the Energy Policy Act of 2005 with generous financial incentives for gasification-based projects. These programs are targeted to support clean coal power generation, not directly CTL technologies, which, however, can be a kind of "by-product".



Recoverable coal resources. Source: International Energy Outlook 2005, <http://www.eia.doe.gov/biaf/ieo/index.html>

Alternative technologies are considered in the frame of fuel security and economy, but they also should meet requirements to reduce local pollution and global warming. Synthetic fuels from natural gas (GTL), biomass (BTL) and coal (CTL) are principally very clean, high-quality fuels. GTL produced by Shell in Malaysia is already being used in Thailand, Germany, Austria, the Netherlands and Greece. CTL technology can also produce clean fuels, but not as far as regards the global warming problem. In long-term, coal could be considered as clean fuel also in this respect, if CO<sub>2</sub> could be captured or sequestered. Coal is even possible source of hydrogen for FCVs.

One question is if liquid fuels can be produced from coal economically. So far, the only commercial CTL plant has been SASOL's plant in South Africa, and there natural gas has been competitive feedstock. According to IEA/ETO Working Paper current cost of CTL is around 40-50 \$/barrel. Dapiche estimates \$15 a barrel costs from SASOL's planned plants in China, which would mean a breakthrough. In any case, CTL production could be competitive with current and anticipated crude and natural gas prices, and promising figures have been given also for the dimethyl ether (DME) as CTL product.

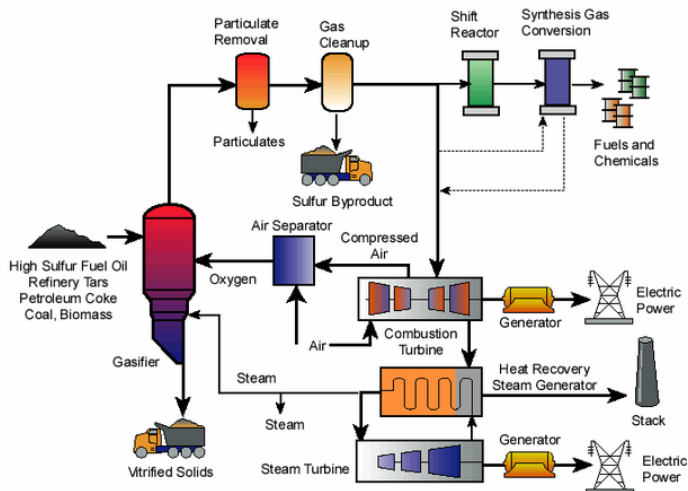
There is a rapid increase in the number of proposals on CTL projects in the US, Australia and China. Key areas are the gasification, and the gas clean-up technologies. In 2004, Chinese companies signed separate agreements with SASOL and Shell to study feasibility of building CTL plants. Sasol is planning to build two CTL fuel plants in China with anticipated start-up in 2010/2011 and joint production of some 160 000 b/d of oil. Later on, the Foster Wheeler and Huanqiu joint venture was awarded a feasibility study contract by Sasol and the Combined Chinese Working Team. This should be completed by end of 2005.

Coal-to-Liquid technology is already 80-year old idea. Fischer-Tropsch process was originally developed by German coal researchers. It was used in World War II, and later on in South Africa by SASOL to produce liquid fuels. The indirect liquefaction process includes a 1st step of gasification or steam reforming to produce syngas (hydrogen and carbon monoxide), and a 2nd step of processing cleaned gas into liquid fuels. This process results high-grade, clean gasoline and diesel. The direct liquefaction method breaks the large, complex components of coal into smaller compounds that form liquids with properties similar to petroleum. So far, there is no commercial CTL plant using direct liquefaction technology.

Headwaters Inc. has planned to develop CTL projects in Arizona and North Dakota. It is the principal developer of two separate indirect coal liquefaction plants that will produce some 10 000 b/d of liquid fuels, as well as electricity from an Integrated Gasification Combined Cycle (IGCC) power station. Plant expansions could increase output up to 50 000 b/d of liquid fuel production. Headwaters also developed direct coal liquefaction technology that is being considered for China, India and the Philippines.

Houston-based DKRW Energy is planning integrated power and CTL facility in Wyoming. Facility would be online between 2008 and 2010. The facility seems like an advanced IGCC plant creating synthesis gas, which would be partly used to produce 33 000 b/d of synthetic diesel and naphtha.

A new type of CTL project is planned to be demonstrated in Australia. That integrates Syntroleum's air-based FT technology with Linc Energy's underground coal gasification (UCG) technology, which means that coal is converted *in-situ* to a syngas that can be used in power generation or e.g. in a FT process. UCG has been used in the Former Soviet Union for some 40 years. The first commercial phase of the Chinchilla Project involves installation of a 30-40 MW power plant and then over the next several years a 17 000 b/d Syntroleum CTL plant and power plant expansion.



Conceptual IGCC CTL process. Source: [www.greencarcongress.com](http://www.greencarcongress.com)

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 Sasol, presentation by Heydenrich Rudi at Howard Weil Energy Conference, April 2005. ([www.sasol.com](http://www.sasol.com))

**NATURAL GAS AND LPG (and biogas)**

**HD NGV costs equal to diesel in 2010**

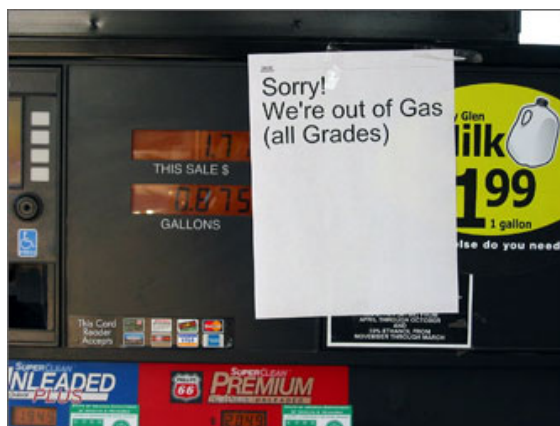
According to report of TIAx, the future life-cycle costs (LCC) of diesel and natural gas heavy-duty engines, meeting the stringent 2010 EPA/CARB emission requirements, will be equal concerning applications analyzed. Natural gas refuse haulers, transit buses, and short-haul trucks would have lower LCCs when oil prices are greater than \$31 per barrel. However, projections vary a lot due to the uncertainty in the diesel engine technology and emission control equipment needed to meet emission limits of 2010. Other uncertainties included i.a. the level of NGV market penetration and price ratio between CNG and diesel (and between LNG and CNG). [www.cngvp.org](http://www.cngvp.org)

**Home-refuelling of natural gas ("Phill")**

In California, FuelMaker's Phill home-refuelling appliance is leased in various cities with monthly rates ranging from \$34 to \$79. This system can be mounted to existing natural gas supply of homeowner's enabling overnight refueling (around 8 hours needed) of CNG car at home. Introduction of Phill in conjunction with Honda Civic GX gives owners of Civic GX confidence as they are not fully dependent on limited public natural gas refueling infrastructure. In the USA tax incentives are offered on the purchase of alternative fuel vehicles. *ENGVA News, April-June 2005.*

**Synthetic natural gas with low costs**

Syngas Corp. (subsidiary of Fairchild International Corporation) has developed technology to process natural gas from various feedstocks with low costs. The prototype unit Model 2 has been tested using e.g. low-grade coal, wood waste and other biomass. Results have been good with lower production costs than with currently available



Source: Strategy for an Energy-Starved World: Go Coal! (<http://yaleglobal.yale.edu/display.article?id=4249>).

technology. The Syngas technology produces electricity and/or pipeline quality synthetic gas (to replace natural gas). [www.csrwire.com](http://www.csrwire.com).

### No more exemptions for old NGVs in Sweden

The safety standards for gas tanks of NGVs are more stringent in Sweden than in Southern Europe. Gas pressure increases when the car is fuelled at cold and left in a warm garage, and this is more pronounced in the countries with cold winters. In 90's the first gas vehicles in Sweden were converted from gasoline cars, and some models, with help of exemptions for a period of six years, were equipped with gas tanks that did not fulfill standards. These exemptions are no more valid and these cars will be phased out.

*Miljöfordon, April 2005, Newsletter 3-05. ([www.miljofordon.se](http://www.miljofordon.se))*

### The first biogas train in Sweden

CNG is rare for locomotives, but recently trials with dual-fuel CNG/diesel trains were launched in India and Peru. In addition, Sweden's Svensk Biogas inaugurated in June a world first biogas train, starting commercial operations in September. The train operates on two biogas Volvo bus engines, replacing two diesel engines, and will operate an 80 km route between Linköping and Västervik. The train has a top speed of 130 km/h and can travel 600 km before need to refuel. There are already almost 780 biogas buses and thousands of biogas cars in Sweden. ([ngvglobal.com](http://ngvglobal.com))



*Biogas train in Sweden. ([ngvglobal.com](http://ngvglobal.com))*

## ETHANOL

### Ethanol report for Sweden

Presently all gasoline sold in Sweden contains 5 % of ethanol. Sweden would be interested in higher bio-ethanol content in gasoline up to at least 10 %, but this is not allowed by EU fuel directive and standard EN 228. A study was carried out by Egebäck et al. to collect information on national and international findings and experience related to the use of blends of ethanol in gasoline as fuels in spark ignition engines. The effect of ethanol on the evaporative emissions was studied as well.

The study concluded that blends with up to 15% ethanol in gasoline will not have any significant negative effects on the wear of the engine, vehicle performance or regulated emissions. However, unregulated emissions acted differently. Ethanol blends resulted in a slight decrease in benzene, toluene, ethyl benzene and xylene (BTEX) emissions, while for aldehydes a significant increase was seen (especially acetaldehyde). A slight increase (~2-3%) in volumetric fuel consumption when shifting from neat gasoline to a 10% ethanol blend was reported. Cold starts affect fuel consumption more when using blended gasoline than when using neat gasoline. Shortage of data describing the effects under Swedish conditions was observed, as well as blends with high ethanol contents (~20 %). *Egebäck et al. Blending ethanol in gasoline. MTC report 5407, May 2005.*



*The Australian label for ethanol blended gasoline. Source: Egebäck et al. MTC report 5407.*

## BIOESTERS

### Biofuels – negative energy balance?

A recent study by David Pimentel from Cornell University and Tad W. Patzek from University of California-Berkeley states that using today's technologies, growing corn, soybeans or other plants, and converting them into biofuels uses more energy than the resulting bioethanol or biodiesel generates. The results are not in line with other studies e.g. US Department of Agriculture reported energy surplus of 34% for corn-based ethanol, another study (BioScience, July 2005) reported 10% surplus of energy for ethanol, US DoE 1998 study reported 69% energy surplus for biodiesel from soybean. When compared to other studies, Pimentel estimates high agricultural energy input, e.g. high usage of lime in soybeans production. Study is published in the Natural Resources Research, Vol. 14:1, 65-76. *DieselNet – July 2005.*

## Biodiesel and aftertreatment devices

German car makers don't accept neat biodiesel (vegetable oil esters) in DPF equipped cars due to concerns about increased oil film dilution during post-injections. Biodiesel blends are allowed, though. For heavy-duty engines, DaimlerChrysler allows neat biodiesel for Euro 4 SCR engines whereas other manufacturers, like MAN and IVECO, prohibit from using neat biodiesel. *DieselNet News, May 2005.*

## SYN- AND SUNFUELS (GTL, BTL)

### Neste Oil and Total co-operate in BTL biodiesel production

A Memorandum of Understanding (MoU) was signed by Neste Oil Corporation and Total S.A. to evaluate possibilities to jointly build a large-scale production plant for next generation biodiesel fuel in Europe. The companies plan to locate the biodiesel plant to one of Total's oil refineries, and aim to commence production in 2008. The production of biodiesel will be based on Neste Oil's proprietary NExBTL technology in which high-quality biodiesel fuel is produced from renewable raw materials, such as vegetable oils and animal fats. (see AMFI Newsletter, January 2005). *Neste Oil Corporation Stock Exchange Release, 8 July 2005.* ([www.nesteengineering.com](http://www.nesteengineering.com))

### UK support BTL biodiesel development

The UK government will support the development of a new technology to produce biodiesel in refineries by hydrogenation. Biomass, like raw rapeseed oil, would be used as a feedstock for a new process in conventional refinery. The product, renewable biodiesel, would be used as a diesel blendstock, resulting in a fuel without effects on vehicle performance. *DieselNet - July 2005.*

### Biodiesel from pyrolysis oil

Canadian pyrolysis bio-oil company, DynaMotive, has announced that it will develop a pyrolysis plant with an option to build a further plant with Megacity Recycling Inc. (Ontario). DynaMotive has announced that it will ship pyrolysis oil (BioOil) to the research institute in Karlsruhe (FZK) for testing of conversion of pyrolysis oil to Syngas via gasification (gasifier in Freiberg). FZK has developed a new BTL technology to produce tar-free syngas from BioOil and pyrolysis char. Syngas can be converted to Synthetic diesel, methanol or other chemicals. *Bioenergy Australia Newsletter, June 2005.* ([www.bioenergyaustralia.org](http://www.bioenergyaustralia.org))

### Shell's GTL on market - update

Shell has been blending natural gas based GTL fuel with diesel in Thailand (Pura Diesel) since 2002, and in Germany, the Netherlands, Austria (V-Power Diesel) and Greece (Diesel 2004) since 2004. Road tests with neat GTL took place in London, Shanghai, California and Tokyo. According to Shell, GTL has showed low emissions, e.g. up to 30% lower particulates in standard truck engines. In Malaysia, Shell operates the GTL plant (12 500 b/d) to produce fuel for diesel engines, and Shell's Qatar plant will be ten times larger. According to Shell, penetration of GTL as transport fuel is slow, e.g. by 2011 it might support fuel for only about 1% of the global car fleet. As regards greenhouse gas emissions, GTL is comparable to conventional fossil fuels, if CO<sub>2</sub> capture and sequestration is not used. *Pipeline Magazine, July 2005.* ([www.pipelinedubai.com](http://www.pipelinedubai.com))

## OTHER ADVANCED FUELS (HYDROGEN, DME)

### Volvo invests in fuel cell power units to avoid engine idling

Trucks would not have to run at idle when they are parked, if a fuel cell auxiliary power unit (APU) was used. This could reduce CO<sub>2</sub> emissions from one truck by 20 to 30 tons per year. Volvo Technology and Statoil are starting a joint-venture company, Powercell, to develop fuel cell power units. Powercell holds the patent on FCs that enable manufacturing of small and effective power unit. The fuel cell is powered by hydrogen gas that is produced from the diesel onboard. According to the Truck Manufacturers Association, there are about 500 000 heavy trucks in North America in which the driver lives onboard. Follow link ([www.volvo.com](http://www.volvo.com)).

### Hydrogen and FC strategy

"The Strategic Research Agenda" and "Deployment Strategy" documents were presented in the 2<sup>nd</sup> Annual Event of European Hydrogen and Fuel Cell Technology Platform (HFP). These documents call for ten-year RDD programme to reduce FC costs by a factor of 10, to exchange the performance and durability of FC systems by a factor of 2, to reduce costs of hydrogen delivered by a factor of 3 and to achieve competitive hydrogen storage densities. According to ENGVA, there was no discussion about using fuel cells in heavy-duty vehicles, which are typically the most potential vehicles for alternative fuels. *ENGVA News, March 2005.*

Aldo Belloni from Linde AG, which has 200 hydrogen production facilities worldwide, stated that infrastructure is no barrier to a hydrogen economy. In 2020, in Europe 6.1 million hydrogen-powered cars is estimated to be on roads, and they would need around 1.1 million tonnes/year of hydrogen and around 2 800 filling stations. With existing technology, it could cost €3.5 billion to create a hydrogen infrastructure in major European cities, and interlinking trunk roads by 2020. Depending on the price of hydrogen, a return on investment can be expected after around 10 years in major European markets. Conclusion was that "Distributing hydrogen is cheaper than distributed production". Linde's proposal is to start development of large-scale hydrogen infrastructure in urban areas near excess

hydrogen production, then by building up new large-scale centralized production (LH<sub>2</sub> steam-reformed from NG). Finally, hydrogen should be produced through electrolysis in areas with cheap renewable power. ([www.hfpeurope.org](http://www.hfpeurope.org))

## MISCELLANEOUS

### Climate change: New Asia-Pacific Partnership

Six countries, USA, China, India, Australia, Japan and South Korea, have signed a joint energy and climate pact, the Asia-Pacific Partnership on Clean Development. New Asia-Pacific pact is a non-binding agreement targeting to reduce greenhouse gas emissions by developing energy technologies. Other countries within new agreement, except the USA and Australia, have signed also the Kyoto Protocol. Details and terms of the agreement are unknown, however, according to the unveiled vision statement, the agreement does not include formal commitments or obligations to reduce greenhouse gas emissions, unlike the Kyoto Protocol. The initiatives of pact are stated to be complementary to the Kyoto Protocol, not to replace it. New pact has been a surprise for many organizations and gained skeptical statements from e.g. the European Commission, Canada's Foreign Minister and environmental organisations. It has been stated that this pact sounds complementary without real substance, like a

deal on technology without addressing climate change. Signatories of new pact represent about half of the world's GDP, population, energy use and greenhouse gas emissions. Other countries may join the new initiative in the future. ([www.euractiv.com](http://www.euractiv.com))



A CNG 3-wheeler taxi in New Delhi. Photo: Nils-Olof Nylund

### US Energy Policy Act 2005

In August 2005, President Bush signed the first law in energy policy in more than a decade. The energy plan will encourage energy efficiency and conservation, promote alternative and renewable energy sources, reduce dependence on foreign sources of energy, increase domestic production, modernize the electricity grid, and encourage the expansion of nuclear energy. The AMF highlights are as follows: Energy Efficiency • increases fuel efficiency requirements for federal vehicles. Renewable Energy • Reauthorizes the Renewable Energy Production Incentive program to provide renewable energy production incentives for solar, wind, geothermal, biomass and expands it to include landfill gas. Oil and Gas • Clarifies the federal government's role in the siting of liquefied natural gas terminals. Clean Coal Technologies • No specific AMF related act – indirect support to CTL via gasification Vehicles and Fuels • Requires "dual-fueled" vehicles acquired under the EPA of 1992 programs to be operated on *alternative fuels*. • Launches a *Hybrid Retrofit and Electric Conversion* program to provide for innovation and use of retrofit and conversion technologies on conventional internal combustion engines. • Authorizes \$200 million for an *advanced vehicle program*. This program, operating under the current Department of Energy "Clean Cities" program, would provide grants to state and local governments to acquire alternative fueled and fuel cell vehicles, hybrids and other vehicles, including ultra low-sulfur diesel vehicles. • Authorizes two "Clean School Bus" programs. The first program would provide \$100 million to retrofit existing diesel buses with new pollution control technology. The second program authorizes \$200 million in grants for replacement of older school buses with clean *alternative fueled* and ultra-low sulfur fueled buses. • Launches programs for *hydrogen fuel-cell transit buses and for hydrogen fuel-cell school buses* to demonstrate the use of this technology. Also includes funding for a railroad efficiency demonstration partnership, a provision to review mobile emission reductions trading, a study of aviation fuel conservation, a provision calling for DOE to increase efforts to improve diesel fuel emission technologies, and establishment of a *biodiesel engine testing program*. Automobile Efficiency/CAFE • Includes a study, to be done by NHTSA, to look into alternatives to the CAFE program and examine the amount of fuel consumed by automobiles. Hydrogen • Launches a state-of-the-art program to get hydrogen-powered automobiles on the road by 2020 along with the necessary infrastructure to provide for the safe delivery of hydrogen fuels. Establishes an interagency task force on hydrogen as well as an outside advisory committee. Authorized at \$2.15 billion over five fiscal years. • Requires the Department of Energy to develop a plan outlining technical milestones as well as technical and non-technical hurdles to hydrogen vehicles and their associated infrastructure. The hydrogen program, to be conducted as a public/private partnership, is to address the production of hydrogen from diverse sources, including fossil fuels, hydrogen-carrier fuels and renewable energy resources including biomass and nuclear energy. The program also addresses pipeline hydrogen transmission, convenient refueling, advanced vehicle technologies, hydrogen storage and the development of necessary codes and standards. Ethanol and Motor Fuels • Establishes a Renewable Fuels Standard of 5 billion gallons to be introduced into the marketplace by 2010. • Bans the use of MTBE in motor fuels after December 31, 2014 and authorizes transition assistance to aid manufacturers in converting production to other fuel additives. ...*several MTBE and leaking tanks related topics...* • Establishes and limits the number of boutique fuels while allowing for the replacement of obsolete fuels with new fuels. *The Whitehouse news* ([www.whitehouse.gov](http://www.whitehouse.gov)). *EPACT 2005 Highlights* ([energycommerce.house.gov](http://energycommerce.house.gov)).

## Biofuel goals in US

A report of biomass as feedstock in USA estimates that transportation fuels from biomass will increase from current 0.5% in 2001 to 4% in 2010, 10% in 2020 and 20% in 2030 in USA. Biomass potential was estimated to be 1.3 billion dry tons, which would cover more than one third of the consumption of transportation fuels in USA. ([feedstockreview.ornl.gov](http://feedstockreview.ornl.gov)). The US goals for biofuels in transportation were shown for by Douglas Kaempf in 1<sup>st</sup> Biorefinery Workshop in Washington in July 2005 (see Figure).

	2001	2010	2020	2030	Actual for 2004
<b>BioPower</b> Biomass share of electricity & heat demand in utilities and industry	3% (2.0 quads)	4% (3.3 quads)	5% (4.0 quads)	5% (5.0 quads)	3% (2.0 quads)
<b>BioFuels</b> Biomass share of demand for transportation fuels.	0.5% (0.15 quads)	4% (1.3 quads)	10% (4.0 quads)	20% (9.5 quads)	1% (0.30 quads)
<b>BioProducts</b> Share of target chemicals that are biobased.	5%	12%	18%	25%	not able to be determined

*US Biomass Goals. Douglas Kaempf, US DoE, presentation in 1st International Biorefinery Workshop. Julv 2005 ([www.biorefineryworkshop.com](http://www.biorefineryworkshop.com))*

## Biofuels proposed to be obligatory in Swedish filling stations

Swedish government proposes a legislation to increase availability of biofuels in the filling stations. From 2006 on petrol stations selling over 3000 m<sup>3</sup> gasoline/diesel should offer biofuels. This requirement would be enlarged step-by-step until in 2009 all stations exceeding 1000 m<sup>3</sup> should sell also biofuels. ([www.miljofordon.se](http://www.miljofordon.se))

## Emissions

Refuse trucks work in crowded urban areas, and thus important candidates for emission reductions and fuel economy improvements. However, there is no duty cycle for refuse trucks. Ohio State University, Oskosh Truck Corporation and the National Renewable Energy Laboratory have joined to design a driving cycle for refuse trucks. The results are shown by *Dembski et al. in SAE Paper 2005-01-1165. The Clean Fuels and Electric vehicles report, June 2005.*

In US, in-use emission testing using portable measurement systems will become mandatory for highway engines in 2007 and for nonroad engines in 2010. The regulations included not-to-exceed standards, which are in most cases set at 1.25-1.5 times the respective limits over the FTP/SET test cycles. *DieselNet News, June 2005.*

CO<sub>2</sub> emissions from new passenger cars decreased by 11.8% between 1995 and 2003 in the EU-15. ACEA's voluntary agreement, average 140 g/km by 2008, would mean 25% reduction from 1995 level. Average CO<sub>2</sub> emissions in 2003 announced by ACEA (European) is 163 g/km, by JAMA (Japanese) 172 g/km and KAMA (Korean) 179 g/km. (see also AMFI Newsletter April 2005) *DieselNet News, June 2005.*

US MSHA (Department of Labor's Mine Safety and Health Administration) revises diesel particulate matter limit and procedure from total carbon (TC) to elementary carbon (EC). EC has been considered to be more accurate than TC, which may include also non-diesel sources like oil mist. *DieselNet News, June 2005.*

Based on European Commission recommendation Germany was expected to apply tax incentives for cars with PM below 5 mg/km (see AMFI Newsletter April 2005). However, German parliament has rejected the governments proposal. *DieselNet News, June 2005.* The Netherlands, on the other hand, has applied an incentive effective from 1 June 2005, stating that car dealers would give a discount up to of €600 to buyers of new diesel cars equipped with diesel particulate filters. *ENGVA News, April – June 2005.* Austria offers €300 tax incentive for diesel particle filters. *AECC March – April 2005 ([www.aecc.be](http://www.aecc.be)).* The Swiss Federal Council has announced that they will prefer incentives instead of particle number limit value. *AECC May – June 2005 ([www.aecc.be](http://www.aecc.be))*

## Fuel sulfur

Marine emission regulation, MARPOL Annex VI from 17 May 2005 sets a global limit of 4.5 wt-% on sulfur content of fuel oil, and 1.5 wt-% for special "SOx Emission Control Areas" (AMFI Newsletter October 2005). New provisions define 1.5 wt-% limit for all ships in Baltic Sea from 2006, North Sea and Channel from 2007 and for passenger vessels on regular services between EU ports from 2006. 0.1 wt-% limit applies for inland vessels and ships at berth in EU ports from 2010. *DieselNet News April 2005.*

## IEA & IEA/AMF News

### Participation of European Commission in Implementing Agreements

Neil Hirst, Director of Energy Technology and R&D in International Energy Agency has announced Executive Chairs, Secretaries and Operating Agents, that an agreement has been reached between the Commission and the IEA on incorporation in existing Implementing

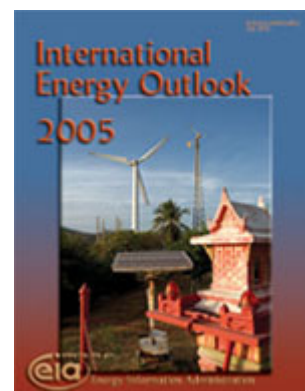
Agreements of the IEA Framework for International Technology Co-operation, adopted by the Governing Board in 2003, that had been delayed in Implementing Agreements in which the European Commission is a Contracting Party. The Commission has confirmed that it is agreeable to pursuing incorporation of the Framework into existing or new Implementing Agreements through an amendment using the defined texts. Further information is available i.a. from IEA Desk Officer.

## Update of AMF website

- ◇ IEA/AMF 31<sup>st</sup> ExCo Meeting will be held in Prague, 7-9 November 2005 – information in Member area.
- ◇ IEA/AMF activities were presented in a seminar in Finland. This brochure is now available on website ([www.iea-amf.vtt.fi](http://www.iea-amf.vtt.fi))
- ◇ Corrections, feedback and suggestions how to improve the AMF website are welcome.

## PUBLICATIONS

- ◇ International Energy Outlook 2005 (IEO 2005). July 2005 ([www.eia.doe.gov](http://www.eia.doe.gov))
- ◇ BP Statistical Review 2005: Putting energy in the spotlight. Follow link ([www.bp.com](http://www.bp.com))
- ◇ Comparative costs of 2010 Heavy-Duty Diesel and Natural Gas Technologies. TIAX LLC, July 2005. ([www.cngvp.org](http://www.cngvp.org))
- ◇ Perlack, R. D. et al. Biomass as Feedstock for a Bioenergy and Bioproducts Industry: The Technical Feasibility of a Billion-Ton Annual Supply. ORNL, April 2005. Follow link ([feedstockreview.ornl.gov](http://feedstockreview.ornl.gov))
- ◇ IEA report: Saving Oil in a Hurry, 168 pages, ISBN 92-64-10941-2 (April 2005), Follow link ([www.iea.org](http://www.iea.org))
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