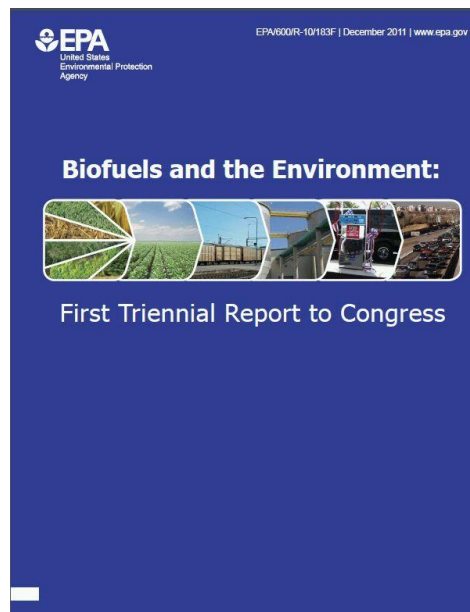


AMFI Newsletter



How to bring alternative fuels on the road, and what environmental impact biofuels have. New *publications* to guide transport fuel policies.

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.

A group of authors prepares contributions to this newsletter:

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Special thanks go to ERIA's Working Group on "Benchmarking of Biofuels in EAS Countries" for their news from Asia.

The AMFI Newsletter is available online at:

www.iea-amf.vtt.fi

CONTENTS

GENERAL INTEREST	3
GASEOUS FUELS	4
ALCOHOLS AND (BIO)GASOLINE	5
BIODIESEL ESTERS	6
SYNTHETIC AND RENEWABLE DIESEL	6
MISCELLANEOUS	7
INSTITUTION PROFILE	9
IEA & IEA/AMF News	10
PUBLICATIONS	10
EVENTS	12

DETAILED CONTENTS

GENERAL INTEREST

Japan: Rapid Improvement of Average Fuel efficiency
Fueling the U.S. Navy's Great Green Fleet with Advanced Biofuels
Connecting Europe: The new EU core transport network
U.S. EPA Finalizes 2012 Renewable Fuel Standards

GASEOUS FUELS

EU: CNG and LNG should be more heavily promoted in transport
Eurogas Roadmap 2050

ALCOHOLS AND (BIO)GASOLINE

U.S. Tax Credit for Ethanol expired
U.S. Preparing for E15 in the Market

BIODIESEL ESTERS

U.S. Biodiesel Production Breaks 1 Billion Gallon Mark

SYNTHETIC AND RENEWABLE DIESEL

Drop-in Biofuels Take Flight in Commerce City, Colorado
UPM to build the world's first biorefinery producing wood-based biodiesel
Catalytic Conversion of Microalgal Oil to Diesel Fuel

MISCELLANEOUS

DOE Researchers Report Breakthrough for Cheaper Biofuels
SUBARU introduces diesel passenger car in Japan
New Instrument to Affect Emissions from Thousands of Vehicles

New Research Methods Accelerate Emissions Toxicity Assessments

China aims to reach 30% biofuel in aviation fuels by 2020

INSTITUTION PROFILE

The Energy and Resources Institute's (TERI)
Biotechnology and Management of Bioresources Division, India

IEA & IEA/AMF News

IEA AMF ExCo 43 to be held in Zürich, Switzerland
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U.S. EPA: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2011
Reallocation of emissions from energy industries to end users 2005–2009
Final Report on Unconventional Gas in Europe
IEA: Deploying Renewables - Best and Future Policy Practice
New IEA HEV Website and March Newsletter
IEA Bioenergy Task 39 Newsletter

EVENTS

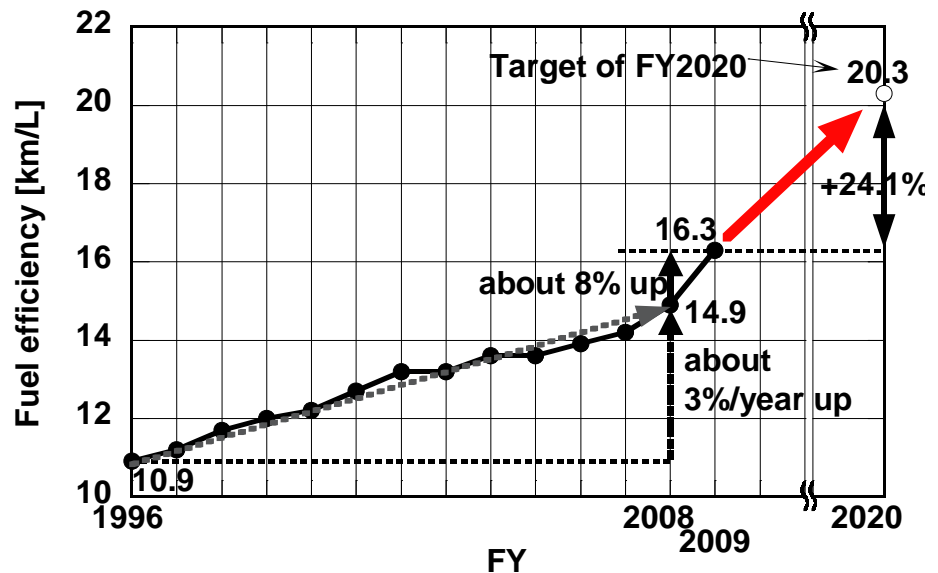
GENERAL INTEREST

Japan: Rapid Improvement of Average Fuel efficiency

Fuel efficiency of new passenger cars in Japan is starting to improve rapidly. The average fuel efficiency in 2009, when the Eco-car tax reduction and subsidy were introduced, was improved by about 8 % compared to 2008 and reached 16.3 km/l (equivalence to JC08 mode). Furthermore, because of the revival of the subsidy and the extension of the tax reduction introducing Plug-in hybrids (PHV) with a 50 km/l of fuel efficiency from 2012, further improvement of fuel efficiency of new passenger cars is expected in Japan.

The average fuel efficiency of new cars is calculated by Ministry of Land, Infrastructure, Transport and Tourism (MLIT) from fuel efficiencies reported in all new cars' catalogs. 10.9 km/l was the average fuel efficiency in FY1996, 14.9 km/l in FY2008. A dramatic improvement has appeared in FY2009 by introduction of the Eco-car tax reduction and subsidy. Before 2008, the improving ratio was about 3% every year, however, the ratio has rapidly increased to about 8 %.

Average fuel efficiency of new release passenger cars.



SI engine cars which have 30 km/l of fuel efficiency and hybrid cars and PHVs which have over 50 km/l of fuel efficiency will be released in 2012. Further improvement of fuel efficiency of new release passenger cars is expected.

Source: News release 14 January, 2012, Nikkan Jidosha Shimbun (Daily Automobile News)

Fueling the U.S. Navy's Great Green Fleet with Advanced Biofuels

Energy plays a central role in almost everything the U.S. military does. It's imperative that the military cultivate energy sources that are not subject to the whims of outside nations. Advanced biofuels produced domestically are rapidly becoming another choice for transportation fuel. The latest milestone in this effort is the announcement that the Defense Logistics Agency has signed a contract to purchase 450,000 gallons of domestically produced advanced drop-in biofuel on behalf of the Navy. This agreement builds off of a recent partnership between the Navy, Department of Energy, and the Department of Agriculture to invest up to \$510 million to produce advanced biofuels for military and commercial transportation.

By 2016, the Navy plans to deploy a Great Green Fleet powered entirely by alternative fuels. The advanced biofuels could be made from a variety of biomass ingredients, in a number of regions across the country. Next generation fuels can be produced from a variety of ingredients including those from dedicated energy crops like switchgrass, to the non-edible parts of corn plants, to unmarketable wood from the lumber industry.

Source: <http://energy.gov/articles/fueling-navys-great-green-fleet-advanced-biofuels>

Connecting Europe: The new EU core transport network

The European Commission has adopted in December 2011 a proposal to transform the existing patchwork of European roads, railways, airports and canals into a unified transport network (TEN-T). The new core network will remove bottlenecks, upgrade infrastructure and streamline cross border transport operations for passengers and businesses throughout the EU. It will improve connections between different modes of transport and contribute to the EU's climate change objectives. The Connecting Europe Facility will invest €31.7 billion to upgrade Europe's transport infrastructure, build missing links and remove bottlenecks.

By focusing on transport modes that are less polluting, the Connecting Europe Facility will push the European transport system to become more sustainable. It will also give consumers more choice about how they want to travel. The TEN-T guidelines (incl. all modes of transport) set common requirements for the TEN-T infrastructure. The policy also fosters the implementation of adequate refuelling infrastructure for alternative fuels, which will help to reduce GHG emissions and make Europe less depending on oil used in transport.

Sources: <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/11/706&format=HTML&aged=0&language=EN>
<http://www.ngvaeurope.eu/ten-t-guidelines-include-alternative-fuels-31-billion-euros-allocated-to-transport-under-the-connecting-europe-facility>

U.S. EPA Finalizes 2012 Renewable Fuel Standards

The Energy Independence and Security Act of 2007 (EISA) established the RFS2 program and the annual renewable fuel volume targets, which steadily increase to an overall level of 36 billion gallons in 2022. To achieve these volumes, the U.S. Environmental Protection Agency EPA calculates a percentage-based standard for the following year. Based on the standard, each refiner and importer determines the minimum volume of renewable fuel that it must ensure is used in its transportation fuel.

Final Volumes for 2012

	Actual Volume	Percentage
Cellulosic Biofuel	8.65 million gallons	0.006%
Biomass-based Diesel	1.0 billion gallons	0.91%
Advanced Biofuel	2.0 billion gallons	1.21%
Renewable Fuel (includes ethanol)	15.2 billion gallons	9.23%

Table 1 - Volumes and percentage of biofuels required for U.S. Renewable Fuels Standard - 2012

Source: EPA Press release December 27, 2011

More information: www.epa.gov/otaq/fuels/renewablefuels/regulations.htm; www.epa.gov/otaq/fuels/renewablefuels/index.htm

GASEOUS FUELS

EU: CNG and LNG should be more heavily promoted in transport

The European Commission (DG Energy) established the Task Force Smart Grids with the mandate to advise the Commission on policy and regulatory directions at European level and to coordinate the first steps towards the implementation of Smart Grids under the provision of the Third Energy Package. The expected policy directions will be focused on the period 2010-2020. As part of the Task Force working packages, NGVA Europe was assisting Expert Group 4 on Smart Grid aspects related to Gas, which concluded that:

"Gas as an alternative fuel to oil-derived fuels (petrol or diesel and LPG) should be more heavily promoted at the European level. The technologies for gas-driven cars are far more advanced than for electric cars and have considerable advantages in relation to efficiency. In order to expand the market for CNG (Compressed Natural Gas) and LNG (Liquid Natural Gas) vehicles (mainly trucks), there is no need to create a new gas

distribution infrastructure as suitable gas filling stations can normally easily be connected using the existing natural gas grids. The public transport area in particular has a high potential when it comes to implementing NGVs in local communities.”

The Expert Group 4 report is available on http://ec.europa.eu/energy/gas_electricity/smartgrids/doc/expert_group4.pdf

Source: DG Energy: http://ec.europa.eu/energy/gas_electricity/smartgrids/taskforce_en.htm

Eurogas Roadmap 2050

Eurogas published its "Natural Gas" Roadmap to 2050. The Eurogas study sets out to describe what Europe's energy balance might look like in 2050, while achieving an 80% reduction of domestic greenhouse gas emissions (GHGs) in the EU, compared with 1990, as proposed by the European Commission in the "Roadmap for moving to a low-carbon economy in 2050". The study concludes that Natural Gas Vehicles should reach a market share of 13% and 33% respectively for passenger and freight transport.

The Eurogas Roadmap shows that realizing the potential of natural gas uses and technologies in all sectors is an effective way of achieving greenhouse gas emissions compliant with the European Commission's target. It considers the specific capability of natural gas to act as an important enabler of zero-carbon renewables, and provides a view to 2050 of a system that remains flexible in today's choices and keeps open options for tomorrow.

Source: <http://www.ngvaeurope.eu/eurogas-roadmap-2050-natural-gas-vehicles-should-reach-a-market-share-of-13-and-33-respectively-for-passenger-and-freight-transport>

ALCOHOLS AND (BIO)GASOLINE

U.S. Tax Credit for Ethanol expired

On Dec. 31, 2011, the tax credit for ethanol expired, ending an era in which the federal government provided more than \$20 billion in subsidies for use of the product. The tax break, created more than 30 years ago, had long seemed untouchable. But in 2011, during which Congress was preoccupied with deficits and debt, it became a symbol of corporate welfare. Fiscal conservatives joined liberal environmentalists to kill it, with help from a diverse coalition of outside groups.

Almost all ethanol produced in the United States today is made from corn, and in recent years its expansion has driven up corn and other food prices. After decades of slow growth, the fuel took off after Congress enacted the 2005 energy law, which set ambitious mandates for ethanol use.

Source: <http://topics.nytimes.com/top/reference/timestopics/subjects/e/ethanol/index.html>

U.S. Preparing for E15 in the Market

In 2011, the U.S. Environmental Protection Agency (EPA) granted two partial waivers that taken together allow but do not require the introduction into commerce of gasoline that contains greater than 10 volume percent (vol%) ethanol and up to 15 vol% ethanol (E15) for use in model year 2001 and newer light-duty motor vehicles, subject to certain conditions.

Official waiver application was filed March 6 2011 with the EPA. The reasoning behind it is that the allowance to go to E15 will open up the marketplace for next-generation fuels like lignocellulosic ethanol and restore confidence for the lending and investment community.

Now preparations are being made to properly inform consumers about E15 before bringing it out to the marketplace. The *American Coalition for Ethanol* and EPA both provide plenty of information on E15 on their websites.

More information: <http://www.epa.gov/otaq/regs/fuels/additive/e15/index.htm>
<http://www.ethanol.org/magazine/index.php?id=110&parentid=110>

BIODIESEL ESTERS

U.S. Biodiesel Production Breaks 1 Billion Gallon Mark

The U.S. biodiesel industry reached a key milestone by producing more than 1 billion gallons of fuel in 2011, according to year-end numbers released by the EPA on Friday.

The total volume of nearly 1.1 billion gallons is by far a record for the industry and easily exceeded the 800 million gallon target required under the EPA's Renewable Fuel Standard (RFS). The previous record for biodiesel production was about 690 million gallons in 2008.

The biodiesel industry's success in 2011 comes after Congress reinstated the fuel's \$1-per-gallon tax credit in December 2010 and as the EPA's RFS program for biodiesel completed its first full year of implementation. Without those policies in place in 2010, production dropped dramatically as dozens of plants shuttered and thousands of people lost jobs.

The tax incentive has since expired again, on Dec. 31, 2011, and the biodiesel industry is urging Congress to reinstate it. In addition, the industry is calling on the EPA and the Obama Administration to finalize the EPA's proposal to boost the biodiesel volume requirement under the RFS to 1.28 billion gallons in 2013.

Source: http://www.biodiesel.org/news/pressreleases/20120127_productionrecord.htm

To view the EPA's numbers, visit <http://www.epa.gov/otaq/fuels/rfsdata/2011emts.htm>

SYNTHETIC AND RENEWABLE DIESEL

Drop-in Biofuels Take Flight in Commerce City, Colorado

The U.S. DOE's Office of Energy, Efficiency and Renewable Energy works in partnership with industry to develop, build, operate, and validate integrated biorefineries at various scales (pilot, demonstration, and commercial). One such project, led by ClearFuels-Rentech, recently celebrated the completion of a pilot-scale biorefinery in Colorado. The pilot-scale facility will convert wood waste, agricultural residue, and bagasse into renewable diesel and jet fuel. ClearFuels has developed a process to thermochemically convert a variety of feedstock types—utilizing a combination of heat and chemicals to produce fuel.

The "drop-in" biofuel will provide a direct replacement to diesel and jet fuel, without any need for changes to existing fuel system. That flexibility will allow commercial and military planes to transition to domestic fuel source. This project is at the pilot scale, processing 20 tons of feedstock per day, which is an important step in scaling up the technology. The facility will lead to a final engineering design that can potentially be duplicated. The biorefinery is expected to begin producing certified renewable fuels sometime this month.

Source: <http://energy.gov/articles/drop-biofuels-take-flight-commerce-city-colorado>

UPM to build the world's first biorefinery producing wood-based biodiesel

UPM is to invest in a biorefinery producing biofuels from crude tall oil in Lappeenranta, Finland. The industrial scale investment is the first of its kind globally. The biorefinery will produce annually approximately 100,000 tonnes of advanced second generation biodiesel for transport. Construction of the biorefinery will begin in the summer of 2012 at UPM's Kaukas mill site and be completed in 2014. UPM's total investment will amount to approximately EUR 150 million.

UPM's advanced biodiesel, UPM BioVerno, is an innovation which will decrease greenhouse gas emissions of transport up to 80% in comparison to fossil fuels. The product's characteristics correspond to those of the traditional oil-based fuels and highly complement today's vehicles and fuel distribution systems.

The main raw material of UPM's hydrotreatment biorefinery in Lappeenranta is crude tall oil, which is a residue of chemical pulp production, mainly generated in the production of sulphate

cellulose from softwood. A significant part of the raw material comes from UPM's own pulp mills in Finland.

The decision to construct a biorefinery in Lappeenranta does not affect UPM's other existing biorefinery plans. UPM has planned to build another biorefinery either in Rauma, Finland, or in Strasbourg, France. This biorefinery would use energy wood as raw material and different technology to that of the Lappeenranta biorefinery.

Source: <http://www.upm.com/EN/MEDIA/All-news/Pages/UPM-to-build-the-world%E2%80%99s-first-biorefinery-producing-wood-based-biodiesel-001-Wed-01-Feb-2012-10-05.aspx>

Catalytic Conversion of Microalgal Oil to Diesel Fuel

Scientists at the Technical University of Munich propose a new process for the conversion of microalgal oil to a diesel substitute. They have developed a novel catalyst: nickel on a porous support made of zeolite HBeta. They have used this to achieve the conversion of raw, untreated algae oil under mild conditions (260 °C, 40 bar hydrogen pressure). The products are diesel-range saturated hydrocarbons that are suitable for use as high-grade fuels for vehicles.

The oil produced by the microalgae is mainly composed of neutral lipids, such as mono-, di-, and triglycerides with unsaturated C18 fatty acids as the primary component (88 %). After an eight-hour reaction, the researchers obtain 78 % liquid alkanes with octadecane (C18) as the primary component. The main gas-phase side products are propane and methane.

Analysis of the reaction mechanism shows that this is a cascade reaction. First the double bonds of the unsaturated fatty acid chains of the triglycerides are saturated by hydrogen. Then, the now saturated fatty acids take up hydrogen and are split from their glycerin component, which reacts to form propane. In the final step, the acid groups in the fatty acids are reduced stepwise to the corresponding alkane.

Original Publication: <http://onlinelibrary.wiley.com/doi/10.1002/anie.201106243/abstract>

MISCELLANEOUS

DOE Researchers Report Breakthrough for Cheaper Biofuels

Researchers at DOE's Joint BioEnergy Institute (JBEI) announced on December 22 a major breakthrough in engineering systems of RNA molecules (Ribonucleic acid) using computer-assisted design. The innovation could lead to important improvements across a range of industries, including the development of less-expensive advanced biofuels. Scientists will use these new "RNA machines" to adjust genetic expression in the cells of microorganisms. This will enable scientists to develop new strains of *Escherichia coli* (*E. coli*) that are better able to digest switchgrass biomass and convert released sugars to form gasoline, diesel, and jet fuels. JBEI is led by researchers at DOE's Lawrence Berkeley National Laboratory.



A breakthrough with *E. coli* could lower the cost of producing advanced biofuels from switchgrass or other non-food biomass plants, with the potential to replace gasoline. While the work at JBEI remains focused on the development of advanced biofuels, JBEI's researchers believe their concepts could help other researchers to develop many other desired products, including biodegradable plastics and therapeutic drugs.

JBEI is one of three Bioenergy Research Centers established by the DOE's Office of Science in 2007. See the DOE press release and the JBEI website.

Source: <http://www.jbei.org/>
<http://energy.gov/articles/doe-researchers-achieve-important-genetic-breakthroughs-help-develop-cheaper-biofuels>

SUBARU introduces diesel passenger car in Japan

FUJI HEAVY INDUSTRIES Ltd. (SUBARU) will introduce a diesel passenger car (SUV) in the Japanese market in 2013. In the Japanese market diesel passenger cars have the image of dirty emissions, and diesel car operation regulations exist in some big cities. However, the situation has started to change, and Mazda and SUBARU will release diesel passenger cars in 2012.

SUBARU already produces a boxer type diesel engine model for the European market. This boxer type diesel engine has a low vibration and very quiet performance. SUBARU will adapt the emission performance (especially NOx reduction) to Japanese 2009 emission regulation based on the European model, and then introduce this as a "Clean Diesel Vehicle".

Source: News release 10 January, 2012, Nikkan Jidosha Shimbun (Daily Automobile News)

New Instrument to Affect Emissions from Thousands of Vehicles

A combustion instability sensing instrument has been licensed and produced commercially for use in automotive test and measurement applications. The instrument allows a new level of precision in the development and calibration of new engines and emission control systems and has been adopted by industry heavyweights General Motors, Ford, Chrysler and Corning. Its use in developing new engine and aftertreatment operation strategies may ultimately have an impact on emissions from thousands of new vehicles. The instrument is also being evaluated by organizations in England and Sweden. A U.S. regular patent application was filed to cover recent improvements to the technology, and the application was recently published by the U.S. Patent and Trademark Office.

As a new development, a study is currently underway to evaluate the performance of the technology for monitoring combustion instability and misfiring at low ambient temperatures. The results could help vehicle manufacturers to improve cold starting performance. This could reduce criteria air contaminant emissions from vehicles under Canadian winter conditions.

Source: Progress on Advanced Fuels and Technologies for Emissions Reduction (AFTER)

New Research Methods Accelerate Emissions Toxicity Assessments

A new research device (VitroCell) has been adapted to allow rapid toxicological assessment of aerosol emissions from internal combustion engines. The method involves passing diluted engine emissions over a surface of human or animal cells to simulate the aerosol exposures that would occur in the lung. This instrument has become increasingly popular in jurisdictions where animal tests are not permitted (e.g., European Community).

During the 2011-2012 fiscal year the instrument was employed to assess emissions from over 100 engine runs. This would not be possible with other toxicological assessment strategies. The instrument was used to examine the comparative toxicity of emissions from a light duty diesel engine (fitted with a diesel oxidation catalyst) combusting a variety of fuel blends. Preliminary results showed that emissions produced by the combustion of biodiesel blends (e.g., 20% canola methyl ester or 20% tallow methyl ester in ultra-low sulphur diesel) were not significantly different from emissions produced by the combustion of standard ultra-low sulphur diesel.

Source: Progress on Advanced Fuels and Technologies for Emissions Reduction (AFTER)

China aims to reach 30% biofuel in aviation fuels by 2020

China Petroleum & Chemical, also known as Sinopec, has applied to China's aviation regulator with the aim to produce aviation biofuel commercially. China is expected to use 12 million metric tons of aviation biofuel a year by 2020. This will equal about 30% of projected total jet fuel consumption, which in itself is predicted to double to 40 million metric tons a year.

Sinopec currently produces nearly three-quarters of China-made aviation fuel, and is researching additional ways of producing aviation biofuel. Its rival, China National Petroleum, supplied 15 tons of biofuel made from jatropha, which used in a test flight by Air China last October. Furthermore, its subsidiary, PetroChina, plans to build a refinery to produce 60,000 tons of the biofuel a year by 2014.

Source: http://www.biofuels-news.com/industry_news.php?item_id=4658

INSTITUTION PROFILE

The Energy and Resources Institute's (TERI) Biotechnology and Management of Bioresources Division, India

TERI's initiatives in Biofuels research has focussed recently on taking Jatropha to the world.

- Project Green aimed at the establishment of a large Jatropha plantation in the southern Indian state of Andhra Pradesh spread over 10600 sq. km. TERI has researched extensively for the last 15 years and sorted 7 germplasm of high quality.
- TERI has extensive experience in biodiesel from jatropha not only going for extensive plantations to obtain the seeds but developing transesterification protocols as well.
- TERI is also actively involved in the development of a package of practices using mycorrhizal biofertilizer for jatropha and screening of superior germplasm for yield improvement for enhanced oil recovery. Molecular marker technology is being exploited for jatropha diversity analysis for germplasm management.
- Besides this, intercropping of Jatropha is being practiced with mango, coconut and cashew wherein a variety of parameters are being checked and a Jatropha improvement program has been implemented by the organization.
- Under the improvement program, DNA fingerprinting and oil analysis of over 800 accessions from all over India has been carried out to identify a diverse core germplasm, inter-specific hybrids have been developed, sequencing has been done to identify genes involved in oil biosynthesis and develop regeneration and genetic transformation protocol for Jatropha varieties while working towards developing pure lines.
- TERI has also carried out Life-cycle assessment of Jatropha based bio-diesel production in India. As network project partners of a DBT sponsored project, oil quality analysis from diverse genotypes from the entire country, have been evaluated.
- Besides collaborative plantations, TERI is also transferring the know-how of the technology to several corporate houses. Several leading industries have supported in the preparation of their respective DPRs (detailed project reports) and for conducting pre-feasibility analysis of industrial ventures with jatropha, which involves cost estimates for the entire value chain and identification and assessment of possible risks at each stage of production.

Recognizing the urgency of utilizing algal biomass for biofuel production TERI is steadily and effectively building up its capacity to achieve this goal.

- Understanding the need for a wide diversity for screening TERI has built up a large collection of algal strains from various marine and fresh water eco-climatic zones existing in India. These pure lines are being screened for high production along with the quality of lipids as well as other nutraceuticals. Extensive literature survey and market research has been carried out in TERI to identify the most lucrative bio - active compounds available from algal cultures for valorisation.
- TERI is utilizing its existing capabilities in molecular biology and bioprocessing to further explore genetic mechanisms of lipid production, technology development for extraction of other economically bio active compounds such as nutraceuticals and pigments, and exploring the use of the left-over algal biomass as protein rich and lucrative by-product as an animal feed.

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IEA & IEA/AMF News

IEA AMF ExCo 43 to be held in Zürich, Switzerland

The next IEA-AMF Executive Committee Meeting is scheduled from May 30th to June 1st, 2012, in Zürich, Switzerland.

Active Annexes to IEA AMF

- Annex XXVIII (28): Information Service & AMF Website (AMFI) and Fuel Info
- Annex XXXV-2 (35-2): Particulate Measurements: Ethanol and Butanol in DISI Engine
- Annex XXXVII (37): Fuel and Technology Alternatives for Buses
- Annex XXXVIII (38): Environmental Impact of Biodiesel Vehicles
- Annex XXXIX-2 (39-2): Emission Performance of HD Methane Engines Phase 2
- Annex XL (40): Life Cycle Analysis of Transportation Fuel Pathways
- Annex XLI (41): Alternative Fuels for Marine Applications
- Annex XLII: (42) Toxicity of Exhaust Gases and Particles from IC-Engines
- Annex XLIII (43): Performance Evaluation of Passenger Car, Fuel, and Powerplant Options

Annex 42 report published

IEA AMF Annex 42 offers information services and knowledge transfer to the existing Engine Toxicity Network. The report provides basic technical–scientific info, country-specific information, and links to more information (literature, internet) in the field of scientific investigation of the toxicity of exhaust gases and particles from IC-engines.

Download: http://www.iea-amf.vtt.fi/pdf/annex42_toxicity.pdf

PUBLICATIONS

EU DG MOVE: Infrastructure for Alternative Fuels

In December the Expert Group on Future Transport Fuels (DG MOVE) published its second report on Infrastructure for Alternative Fuels, which includes policy recommendations and highlights the stakeholders' view on necessary actions to develop an adequate refuelling infrastructure for alternative fuels. The report points out that all alternative fuels are viable options for the future fuel mix. High infrastructure investment needs would, however, only be required for electricity, hydrogen and methane in the short and medium term. Special support measures for the build-up of the required infrastructure are, therefore, only necessary for these fuel options.

Download: http://ec.europa.eu/transport/urban/cts/doc/ttf_eg_report_201112.pdf

U.S. EPA: Biofuels and the Environment: the First Triennial Report to Congress

The Energy Independence and Security Act (EISA Section 204) directs EPA to conduct a study of the environmental impact associated with current and future biofuel production and use. The mandate asks for consideration of environmental issues and resource conservation impacts of increased biofuel production and use. This report reviews impacts across the entire biofuel supply chain, including feedstock production and logistics, and biofuel production, distribution, and use.

Download: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=235881>

U.S. EPA: Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2011

This report, published in March 2012, provides data on the fuel economy, carbon dioxide (CO₂) emissions, and technology trends of new light-duty vehicles for model years 1975 through 2011 in the United States. Average CO₂ emissions and fuel economy have improved each year beginning in 2005, and are about 15 percent better than in 2004. This reverses a long-term trend of worsening CO₂ emissions and fuel economy from 1987 through 2004.

Download: <http://www.epa.gov/otaq/fetrends.htm#summary>

Reallocation of emissions from energy industries to end users 2005–2009

The objective of this report is to help improve the understanding of past greenhouse gas (GHG) emission trends in the energy sector from the demand or enduser side. To do this, the report develops a methodology to redistribute emissions from energy industries to the final users (by sector) of that energy. This reallocation is done on the basis of Eurostat's energy balances and GHG inventories for the energy sector for the period 2005–2009.

Download: http://www.eea.europa.eu/publications/end-use-energy-emissions/at_download/file

Final Report on Unconventional Gas in Europe

On 27 January 2012 the Commission published a study on the licensing and permitting procedures for shale gas projects. Based on a sample of four Member States (France, Germany, Poland and Sweden) the study concludes that there are no significant gaps in coverage in the current EU legislative framework, at least for regulating the current level of shale gas activities. The study considers it as problematic that currently public participation in the authorization process for exploration projects is often rather limited. It also stresses that the application of the Environmental Impact Assessment Directive should not be linked to gas production thresholds alone and it emphasizes that regulations should provide legal certainty for investors.

Download: http://ec.europa.eu/energy/studies/doc/2012_unconventional_gas_in_europe.pdf

Global Trends in Transport Routes and Goods Transport: Influence on Future International Loading Units

Transport of goods is a prerequisite for a prospering economy. The harmonization of loading units suffers from different legislative limits for transport equipment in different countries and different measurement standards. The ideal loading unit has to fit most requirements in terms of loading capacity rather than fitting only at any existing system. This report stimulates debate on the future of transport policy, providing a basis for discussion on how transport and transportation will evolve up until 2030.

Download: http://www.acea.be/images/uploads/files/Global_Trends_in_Transport_Routes_and_Goods_Transport.pdf

IEA: Deploying Renewables - Best and Future Policy Practice

This book provides a comprehensive review and analysis of renewable energy policy and market trends, analyzes in detail the dynamics of deployment and provides best-practice policy, and assesses the impact and cost-effectiveness of support policies.

Available for purchase: <http://www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&st1=612011271P1&LANG=EN>

New IEA HEV Website and March Newsletter

The IEA Hybrid and Electric Vehicle Implementing Agreement has refreshed its web appearance. Check the new IEA HEV website.

Website: www.ieahev.org

Newsletter: <http://www.ieahev.org/news/>

IEA Bioenergy Task 39 Newsletter

This issue of the newsletter includes a profile of Germany's biofuels programs and strategies.

Download: <http://www.task39.org/LinkClick.aspx?fileticket=CRo3qrFMOXU%3d&tabid=4348>

EVENTS

12th Automotive and Engine Technology, 13-14 March 2012, Stuttgart, Germany

Conference website: <http://www.fks.de/index.php?id=1840&L=2>

World Biofuels Markets Congress & Exhibition, 13-15 March 2012, Rotterdam, Netherlands

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

European Fuels Conference - 13th Annual meeting, 13 - 16 March 2012, Paris, France

Conference website: <http://www.wraconferences.com/european-fuels-conference-13th-annual-meeting-2012/s4/a205/>

International Biomass Conference & Expo, 16-19 April 2012, Denver, USA

Conference website : http://www.biomassconference.com/ema/DisplayPage.aspx?pagelD=Advanced_Biofuels

4th European Transport Research Arena, TRA 2012, 23-26 April 2012, Athens, Greece

Conference website: <http://www.traconference.eu/Welcome/>

European Algae Biomass, 25-26 April 2012, London, UK

Conference website: <http://www.wplgroup.com/aci/conferences/eu-eal2.asp>

33rd International Vienna Motor Symposium, 26 - 27 April 2012, Vienna, Austria

Conference website: http://www.övk.at/index_en.htm

5th Simulation and Testing for Automotive Electronics, 10-11 May 2012, Berlin, Germany

Conference website: http://www.iav.com/en/index.php?we_objectID=17872

Annual Merit Review and Peer Evaluation Meeting, 14-18 May 2012, Washington, D.C., USA

Conference website: <http://www.annualmeritreview.energy.gov/>

European Bioenergy 2012 Conference & Exhibition, 29-31 May 2012, Jönköping, Sweden

Conference website: <http://www.elmia.se/en/worldbioenergy/>

European Biodiesel Summit, 13-14 June 2012, Kraków, Poland

Conference website: <http://www.wplgroup.com/aci/conferences/eu-eaf5.asp>

20th European Biomass Conference & Exhibition, 18-22 June 2012, Milan, Italy

Conference website: <http://www.conference-biomass.com/>

3rd AEBIOM European Bioenergy Conference 2012, 25-27 June 2012, Brussels, Belgium

Conference website: <http://www.aebiom.org/conference2012>

6th Seminar on Biofuels for Latin America and the Caribbean, June 2012, Mexico City, Mexico

Conference website: <http://www.olade.org/eventos-futuros>

24th AVL Conference "Engine & Environment", 13-14 September 2012, Graz, Austria

Conference website: https://www.avl.com/engine_environment_2012_first_announcement

IEA Bioenergy Conference 2012, 13-15 November 2012, Vienna, Austria

Conference website: <http://www.ieabioenergy2012.org/>

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Sharon Rees

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