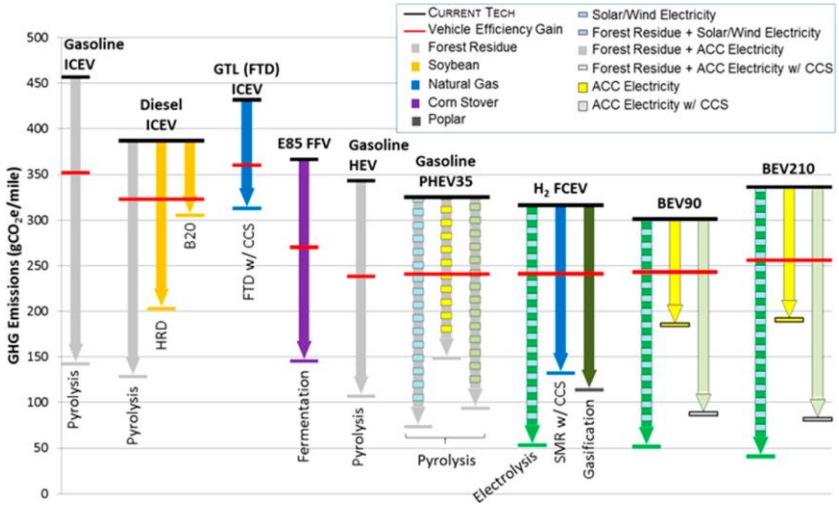
June 2018, issue no. 1/2018

AMFI Newsletter



Cradle-to-grave greenhouse gas emissions for current and future different light-duty vehicle-fuel pathways.

Figure taken from "Current and Future United States Light-Duty Vehicle Pathways: Cradle-to-Grave Lifecycle Greenhouse Gas Emissions and Economic Assessment" published in Environmental Science & Technology

Read more

CONTENTS

Production of FT-liquids

Velocys plc is developing a technology to convert residues from forestry operations into renewable transportation fuels. The process makes diesel and jet fuel through gasification and catalytic synthesis (Fischer-Tropsch process).

The joint venture ENVIA was set up to produce renewable fuels and chemicals from landfill gas and natural gas using gas-to-liquids. The ENVIA plant is located adjacent to the East Oak landfill site in Oklahoma City, USA. Finished products (renewable waxes, diesel and naphtha) are being produced and sales are being made to product offtakers. In October 2017 the plant reached an operational capacity of 200 barrels per day. The plant will continue ramping up to its target operational capacity of 250 bpd. Finished, saleable products (premium renewable waxes, diesel and naphtha) are meeting customer product specifications and sales are being made to product offtakers.

Velocys' first US biorefinery using woody biomass as feedstock is planned to be located in Natchez, Adams County, Mississippi and shall use around 1,000 dry tons per day of woody biomass feedstock. A related application to the US Department of Agriculture to obtain a loan guarantee for a commercial-scale renewable fuels plant is under preparation. Velocys has the goal of reaching final investment decision around the middle of 2019.

Source: Velocys press releases
Weblink: https://www.velocys.com/our-biorefineries/

Isobutene-derived gasoline and jetfuel from wood

A consortium of 11 project partners has received a European grant amounting to €13.9 million to demonstrate at cubic meter scale the conversion of softwood residues to hydrolysates, which are fermented to isobutene and then further processed into gasoline and jet fuel. The REWOFUEL project consists in showcasing the value chain, from residual wood to 3 high performance drop-in biofuels derived from bio-isobutene. These biofuels are full-bio-ETBE, bio-isooctane and bio-isododecane rich biofuels.

Source: Press release of Global Bioenergies
Project synopsis: https://www.cordis.europa.eu/project/rcn/215042_en.html

Neste delivers renewable propane to Europe

Neste has started up the world's first large-scale renewable propane production facility in Rotterdam in the Netherlands. The first cargo of renewable propane has been delivered to SHV Energy, who will market and sell the product to its customers across Europe as BioLPG. Neste's new facility has a production capacity of 40,000 tonnes per year and SHV Energy will be the exclusive distributor, supplying 160,000 tonnes over four years. BioLPG will enable users of existing fossil fuels to reduce their carbon footprint, without any modifications to existing gas applications technology. BioLPG can be used within a full range of existing LPG applications, from transport and commercial heating to retail leisure cylinders.

Source: Neste Corporation Press Release 19 March 2018 at 9 am (EET)
Weblink: https://www.neste.com/neste-delivers-first-batch-100-renewable-propane-european-market

Fuel types of new cars in Europe

In the first quarter of 2018, 37.9% of all new passenger cars in the EU ran on diesel. Petrol cars accounted for 55.5%. Alternatively-powered vehicles (APV) accounted for 6.5% of EU car sales in Q1 2018, with electrically-chargeable vehicles making up 1.7% of all cars sold.

Registrations of diesel cars totalled 1,574,333 units; 322,622 units (or 17.0%) less than during the same period in 2017. This drop in demand for diesel vehicles was largely offset by an increase in petrol sales. Demand for new petrol cars grew significantly (+14.6%), with petrol sales totalling 2,303,129 units – roughly 300,000 more than last year.

So far in 2018, EU demand for alternatively-powered vehicles grew by +26.9%. Registrations of battery electric (+34.3%) and plug-in hybrid electric cars (+60.2%) accounted for the strongest growth – in total, 69,898 electrically-chargeable vehicles (ECV) were registered from January to March 2018 (+47.0%). At the same time, 139,556 hybrid electric vehicles (HEV) were sold in the EU, 25.7% more than in the first quarter of 2017. The market for NGV, LPG and E85 cars also started the year strongly; demand increased by 12.0%.

Compared to one year ago, Germany saw the strongest increase in APV sales (+73.4%), followed by Spain (+53.4%) and France (+15.3%). Demand for alternatively-powered vehicles also continued to grow in the United Kingdom (+9.8%) and Italy (+9.0%), albeit at a more moderate pace.

Source: ACEA Press release, Brussels, 3 May 2018,
Weblink: http://www.acea.be/press-releases/article/fuel-types-of-new-cars-diesel-17-petrol-14.6-electric-47-in-first-quarter-o

POLICY / LEGISLATION / MANDATES / STANDARDS

Canada: funding for alternative fuel infrastructure

Canada announced a $120-million investment to expand the network of electric vehicle charging and alternative refuelling stations across the nation as part of the Government's efforts to encourage Canadians to reduce their carbon footprint. The funding will support the deployment of electric chargers; natural gas and hydrogen refuelling stations; the demonstration of new, innovative charging technologies; and the development of codes and standards.

Source: Natural Resources Canada news release January 10, 2018
Weblink: https://www.canada.ca/en/natural-resources-canada/news/2018/01/coast-to-coast_investmentshelpcanadiansdriveclean.html

New CNG Standard for U.S. & Canada

A new bi-national standard for compressed natural gas (CNG) fuel systems for road vehicles has been published in March, 2018. Such a CNG fuel system standard was included as a priority in the 2016 U.S. Department of Energy and Natural Resources Canada's Natural Gas Vehicle Work Plan, in support of the Regulatory Cooperation Council.

The new NGV 6.1 standard includes revisions to further harmonize coverage with current industry codes and standards, as well as added performance and verification test requirements for the vehicle fuel system.

Source: NGT News March 28, 2018
Weblink: https://ngtnews.com/csa-group-publishes-new-cng-standard-for-u-s-canada

Mexico: HDV emission standards

The Mexican government published final emissions standards for engines used in heavy-duty trucks and buses and complete heavy-duty vehicles on February 19, 2018. Starting January 1, 2021, all new heavy-duty vehicles sold in Mexico will be required to meet the best-in-class, filter-based standards, equivalent to those currently in place in the rest of North America and the European Union. These are the first soot-free standards adopted in Latin America that are mandatory at a national level.

Source: ICCT policy update February 22, 2018
Weblink: https://www.theicct.org/publications/mexico-heavy-duty-vehicle-emission-standards

Brazil establishes national biofuels policy

In late December 2017, Brazil published RenovaBio, the new national biofuels policy. RenovaBio aims to increase the use of all biofuels, including ethanol, biodiesel and biomethane, in Brazil with the aim of increasing energy security and reducing greenhouse gas emissions. The RenovaBio law provides for the establishment of national emissions reduction targets for the nation's fuel supply. Targets will have to be met annually by fuel distributors.

RenovaBio creates a system that allows for the certification of biofuels. The objective of the certification is to measure the exact contribution of each biofuel producer to greenhouse gas emissions reductions, in relation to their fossil substitute. The law also creates a decarbonization credit that combines the emissions reduction targets and the life cycle assessment of each biofuel producer. The credits are issued by the biofuel producer following the sale of product. Fuel distributors will meet required targets by acquiring these credits.

Brazil is currently the world's second largest producer and consumer of biofuels. In 2017, the country produced an estimated 27.7 billion liters of ethanol and 4.2 billion liters of biodiesel.

Source: Ethanol Producer Magazine, January 2, 2018
Weblink: http://ethanolproducer.com/articles/14929/brazil-establishes-national-biofuels-policy

SPOTLIGHT ASIA

Japan: GHG emissions for hydrogen

The National Institute of Advanced Industrial Science and Technology (AIST) in Japan has conducted a study on the Well-to-Tank (WtT) GHG emissions from various renewable hydrogen supply chains for Japan. The stages of the supply chains include hydrogen being produced overseas, converted into a transportable hydrogen carrier (liquid hydrogen or methylcyclohexane), imported to Japan by sea, distributed to hydrogen filling stations, restored from the hydrogen carrier to hydrogen and filled into fuel cell vehicles. For comparison, an analysis was also carried out with hydrogen produced by steam reforming of natural gas.

The analysis results indicate that some of renewable hydrogen supply chains using liquid hydrogen exhibited significantly lower WtT GHG emissions than those of a supply chain of hydrogen produced by reforming of natural gas. A significant piece of the work is to consider the impacts of variations in the energy and material inputs by performing a probabilistic uncertainty analysis. This suggests that the production of renewable hydrogen, its liquefaction, the dehydrogenation of methylcyclohexane and the compression of hydrogen at the filling station are the GHG-intensive stages in the target supply chains.

Source: MDPI- Sustainability 2017, 9(7)
Weblink: http://www.mdpi.com/2071-1050/9/7/1101

Indonesia: testing B20 in locomotives

Following a nearly yearlong pause after engine problems were discovered in the higher biodiesel blend application for the train sector, the Indonesian government will restart B20 testing on locomotives. The tests are carried out on locomotives manufactured by two American companies, General Electric (GE) and Electro-Motive Diesel (EMD), running on 20 percent-blended biodiesel on the Tarahan-Tanjung Enim railway from Lampung to South Sumatra. Six months of testing will be completed by June after which time a decision will be taken. Trains were initially mandated to run on B20 in 2016, but after sporadic cases of engine failure the mandate has been reduced to 5% blending.

Source: The Jakarta Post, 5 March 2018
Weblink: http://www.thejakartapost.com/news/2018/03/05/govt-pushing-ahead-with-locomotive-biodiesel-plans.html

Indonesia: roadmap for electric car industry

By 2025 the Indonesian government wants low carbon emission vehicles (LCEVs) to make up at least one fifth of all vehicles that are manufactured domestically. Hence, discussions about the regulatory framework - including incentives - for the electric car industry in Indonesia are ongoing. Stakeholders in the country's automotive industry are therefore eagerly waiting for results of government discussions and a roadmap before investing in manufacturing facilities for the launch of electric cars on the Indonesian market. Meanwhile, Mitsubishi Motors Corporation donated 10 electric cars as well as four low-emission electrical power sources to recharge the cars. This is a sign of its support for the development of the electric car and related infrastructure in Indonesia.

Source: Indonesian-Investments, 27 February 2018
Weblink: https://www.indonesia-investments.com/news/todays-headlines/indonesian-government-preparing-roadmap-for-electric-car-industry/item8625?

IEA & IEA-AMF NEWS

Advanced Motor Fuels 55th ExCo Meeting

The 55th AMF ExCo Meeting was held 8 - 11 May 2018 in Bangkok, Thailand. The project leaders of AMF projects (annexes) provided updates on the progress and the results of their activities. The ongoing projects (annexes) are:

- Annex 55: Real Driving Emissions and Fuel Consumption
- Annex 54: GDI Engines and Alcohol Fuels
- Annex 53-1: Sustainable Bus Systems (Phase 1)
- Annex 52: Fuels for Efficiency
- Annex 51: Methane Emission Control
- Annex 50: Fuel and Technology Alternatives in Non-Road Engines
- Annex 28: Information Service & AMF Website (AMFI)

The annexes on Methanol as Motor Fuel and on Heavy-Duty Vehicle Evaluation are still finalizing administrative issues before starting their activities.

Topics of interest for new AMF work include electrofuels, lessons learned regarding market introduction, advanced maritime fuels and the role of biofuels, electricity and hydrogen in decarbonizing the transport sector. These will be further discussed at the next ExCo meeting.

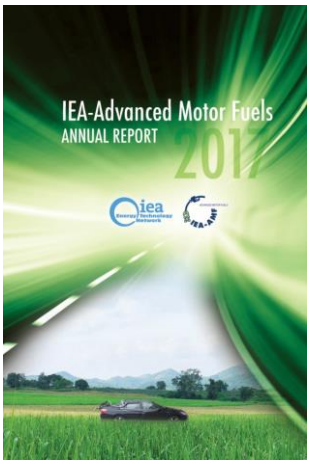
India joined AMF just in time for the ExCo Meeting, increasing the AMF membership to 18 Contracting Parties from 16 Countries:

> Austria, Canada, Chile, China, Denmark, Finland, Germany, India, Israel, Japan, Korea, Spain, Sweden, Switzerland, Thailand and the USA.

ExCo 56 will be held October 15-18 in New Delhi, India.

PUBLICATIONS

AMF Annual Report 2017



The AMF Annual Report provides information on the Advanced Motor Fuels Technology Collaboration Programme, on the status of advanced motor fuels in AMF member countries and worldwide, and on the work carried out by AMF in individual projects (Annexes). In addition, the AMF Chairman provides an outlook on advanced motor fuels.

Link: www.iea-amf.org/annualreport

Tracking Clean Energy Progress

The International Energy Agency has just released its comprehensive analysis of clean energy technologies– Tracking Clean Energy Progress (TCEP). TCEP has been transformed into a digital-only web portal with all the very latest data and analysis across 38 technologies and sectors, including investment levels, deployment rates, recent trends and what more needs to happen to achieve the targets of the IEA's Sustainable Development Scenario (SDS).

The new, interactive, free and easy-to-navigate TCEP web portal will be continually updated whenever new information becomes available, allowing all users to efficiently access the very latest IEA data and analysis across all clean technologies and sectors.

Link: http://www.iea.org/tcep

Sustainability of lignocellulosic bioenergy crops

This ICCT briefing paper reviews evidence on the environmental risks of growing lignocellulosic energy crops for biofuel production. The sustainability of energy crops such as Miscanthus,

switchgrass, and short rotation poplar is a growing concern as the European Union (EU) considers ambitious targets for advanced biofuels. Energy crops could represent a lower-carbon alternative to food-based biofuels that can potentially deliver much greater volumes of biofuel than waste and residue feedstocks.

Sustainability criteria excluding policy support for energy crops grown on converted forestland or actively used agricultural land would effectively curtail the greatest environmental risks of using these crops. This would be a pragmatic approach particularly in the EU, where sustainability criteria already apply for biofuel feedstocks.

Link: https://www.theicct.org/publications/sustainability-challenges-lignocellulosic-bioenergy-crops

Yield potential of U.S. energy crops

In an effort to learn more about how perennial bioenergy grasses perform across multiple locations and years, the U.S. Department of Energy and Sun Grant Initiative Regional Feedstock Partnership was initiated in 2008. The objectives of the Feedstock Partnership were to (1) provide a wide range of information for feedstock selection and management practice options for a variety of regions and (2) develop national maps of potential feedstock yield for each of the herbaceous species evaluated. The study expands our understanding of the bioenergy potential of switchgrass, miscanthus, sorghum, energy cane, and prairie mixtures by conducting long-term, replicated trials of each species at diverse environments in the U.S. It will be useful in making decisions about feedstock selection as well as agronomic practices across a wide region of the U.S.

Link: https://onlinelibrary.wiley.com/doi/abs/10.1111/gcbb.12493

ACEA Tax Guide 2018

ACEA's Tax Guide provides an overview of specific taxes that are levied on motor vehicles in European countries, as well as in other key markets around the world. Counting more than 350 pages, this comprehensive guide contains all the latest information about taxes on vehicle acquisition (VAT, sales tax, registration tax), taxes on vehicle ownership (annual circulation tax, road tax) and taxes on motoring (fuel tax).

Besides the 28 member states of the European Union, as well as the EFTA countries (Iceland, Norway and Switzerland), this Tax Guide also covers countries such as Brazil, China, India, Japan, Russia, South Korea, Turkey and the United States.

Link: http://www.acea.be/publications/article/acea-tax-guide

Advanced biofuels in Europe

In a study commissioned by the European Commission "**Research and innovation perspective of the mid-and long-term potential for advanced biofuels in Europe**", the potential of research and innovation (R&I) in developing advanced biofuels technologies was examined. The study finds that by improving feedstock supply and reducing conversion costs through research and innovation, feedstock availability could rise by 40-50 %. By 2050, advanced biofuels could achieve close to a 50 % share of the overall transport sector energy mix, 330 Mt of net emission savings (if replacing fossil fuels), and significantly improve energy security.

Link: https://publications.europa.eu/en/publication-detail/-/publication/448fdae2-00bc-11e8-b8f5-01aa75ed71a1/language-en

Lifecycle assessment of alternative fuel vehicles

A team from U.S. Department of Energy and national laboratories, major automakers, EPRI, and Chevron performed a cradle-to-grave assessment of greenhouse gas emissions and costs for current and future light-duty vehicles. The analysis addressed both fuel cycle and vehicle manufacturing cycle for the following fuels/vehicle types: gasoline and diesel, flex fuel, compressed natural gas, hybrid electric, hydrogen fuel cell, battery electric, and plug-in hybrid. The results were published under the title "Current and Future United States Light-Duty Vehicle Pathways: Cradle-to-Grave Lifecycle Greenhouse Gas Emissions and Economic Assessment" in the journal Environmental Science & Technology.

Link: https://pubs.acs.org/doi/10.1021/acs.est.7b06006

Future costs of electricity-based fuels

A recent study commissioned by Agora Verkehrswende and Agora Energiewende "**The Future Cost of Electricity-Based Synthetic Fuels**" investigates the costs and potential uses of fuels synthesized from renewable electricity. Both the report and an excel tool (enabling users to investigate how different underlying assumptions impact cost calculations) are available for download.

Link: https://www.agora-verkehrswende.de/en/press/news/electricity-based-fuels-as-much-as-needed-for-the-sake-of-the-climate-as-little-as-possible-for-th/

ILUC GHG emissions of biofuels

The European Commission commissioned a "**Study Report on Reporting Requirements on Biofuels and Bioliquids Stemming from the Directive (EU) 2015/1513**", with the aim to gather comprehensive information on, and to provide systematic analysis of the latest available scientific research and the latest available scientific evidence on indirect land use change (ILUC) greenhouse gas emissions associated with production of biofuels and bioliquids.

Link: https://ec.europa.eu/energy/sites/ener/files/documents/20170816_iluc_finalstudyreport.pdf

Europe's transport GHG emissions still rising

Europe's transport sector is making only mixed progress in meeting its environment, health and climate policy targets, according to a European Environment Agency (EEA) assessment "**Transport and Environment Reporting Mechanism (TERM)**", which tracks the short and long-term environmental performance of this key economic sector across the European Union. Issues covered include emissions, air pollution, noise and renewable energy and the impact of transport on ecosystems and biodiversity.

Link: https://www.eea.europa.eu/highlights/term-2017-mixed-progress-for?utm_medium=email&utm_campaign=TERM%202017&utm_content=TERM%202017+CID_07fc1931ffd0679082e3596df4a816d6&utm_source=EEA%20Newsletter&utm_term=Read%20more

Fuel quality in the EU in 2016

This report of the European Environment Agency (EEA) provides a summary of the volume and the quality of petrol and diesel (Fuels sales, types and bio component content) sold in 2016 for use in road transport in the European Union. All diesel sold in the EU contains biodiesel, whereas 85 % of petrol sold contains bioethanol. In 2016, 75 % of petrol fuel sold in the EU had up to 5 % ethanol content by volume, and 10 % had up to 10 % ethanol content. Of the diesel fuel sold, 83 % contained up to 7 % FAME and 17 % contained more.

Link: https://www.eea.europa.eu/publications/fuel-quality-in-the-eu

Commercial transport can be fossil-free by 2050

A comprehensive analysis undertaken by Scania, and reviewed by an external academic panel, shows that several pathways can be pursued to phase out carbon emissions, including smarter logistics, electrification, biofuels and fuel cell vehicles. The research covers three transport segments: long haulage, distribution and city bus, and four countries: Sweden, Germany, China and the US.

New technologies can take a long time to achieve wide adoption, as the existing stock of vehicles turns over slowly. To be fossil-free by 2050 therefore requires changes at scale already by 2025, including not only new technologies but also new infrastructure. An average global growth rate of new fossil-free powertrain technologies of at least 5 to 10 %/year is needed. To reach ambitious goals, the transport sector and adjacent industries must initiate change rapidly and immediately.

Link: https://www.automotiveworld.com/news-releases/scania-commercial-transport-can-fossil-free-2050/

Emerging technologies for advanced biofuels

On June 4th, 2018, more than 20 biofuels experts gathered in Brussels to discuss biofuel technologies at low TRL. Workshop presentations elaborated on the status of research and demonstration of various biofuel technologies. Focus was on decentral biomass conversion units at a scale compatible with regional biomass supply, and on integration with fossil refineries, either by adding bio-oil to the FCC or by upgrading raw FT products into advanced biofuels. Hydrogen from electrolysis is increasingly included in conversion processes to enhance the utilization of biogenic carbon, but can also be produced from biomass through a chemical looping technology. The Fuel Cell and Hydrogen joint undertaking (FCH JU) is financially supporting related projects.

Link: http://www.etipbioenergy.eu/ws-emerging-technologies/

EVENTS

Fuel Ethanol Workshop & Expo, 11-13 June 2018, Omaha, Nebraska, USA
Conference website: http://www.fuelethanolworkshop.com/ema/DisplayPage.aspx?pageId=Home

Advanced Biofuels Conference, 11-13 June 2018, Omaha, Nebraska, USA
Conference website: http://www.advancedbiofuelsconference.com

ACES: Automation Connectivity, Electrification and Sharing, 13-14 June 2018, Paris, France
Conference website: https://www.iea.org/workshops/automation-connectivity-electrification-and-sharing-aces-transforming-road.html

EV Roadmap 11 Conference, 19-20, June 2018, Portland, Oregon, USA
Conference website: *http://evroadmapconference.com/*

Integer Emissions Summit & AdBlue® Forum Europe 2018, 26-28 June 2018, Brussels, Belgium
Conference website: https://www.integer-research.com/conferences/integer-emissions-summit-adblue-forum-europe-2018/

Summit on Realizing the Circular Carbon Economy, 24-25 July 2018, Golden, Colorado, USA
Conference website: http://www.advancedbiofuelsconference.com

JSAE/SAE 2019 International Powertrains, Fuels and Lubricants Meeting, 26-29 August 2019, Kyoto, Japan
Conference website: http://pfl2019.jp/overview.html

IEA-TCPs Electrofuels Workshop, 10 September 2018, Brussels, Belgium

International Conference on Gas-Powered Vehicles, 11-12 September 2018, Potsdam, Germany
Conference website: *https://www.iav.com/en/events/iav-conferences/conference-gaseous-fuel-powered-vehicles?sl=1*

Emissions to Air in the LCA of Electric Vehicles, Current Status and Future Perspectives, 18-19 September 2018, Stuttgart, Germany
Conference website: https://www.electrive.com/events/f-cell/

Advanced Biofuels Conference, 18-20 September 2018, Gothenburg, Sweden,
Conference website: *www.advancedbiofuelsconference.org/*

Biofuels International Conference and Expo, 10-11 October 2018, Berlin, Germany
Conference website: *https://advancedbiofuelsusa.info/biofuels-international-conference-and-expo-october-10-11-2018-berlin-germany/*

International Biomass Congress & Expo, 10-11 October 2018, Berlin, Germany
Conference website: https://advancedbiofuelsusa.info/international-biomass-congress-expo-october-10-11-2018-berlin-germany/

International Biogas Conference & Expo, 10-11 October 2018, Berlin, Germany
Conference website: https://advancedbiofuelsusa.info/international-biogas-conference-expo-october-10-11-2018-berlin-germany/

Bioenergy Australia Conference, BIONERGY STRONG 2018 - Driving Commercial Outcomes, 17-18 October 2018, Brisbane, Australia
Conference website: https://www.bioenergyaustralia.org.au/bioenergy-events/annual-conference/

13th International Congress on Biofuels and Bioenergy (Biofuels 2018), 18-20 October 2018, Ottawa, Ontario, Canada
Conference website: http://biofuels-bioenergy.conferenceseries.com/

ABLC Global 2018, 6-9 November 2018, San Francisco, CA, USA
Conference website: *http://biofuelsdigest.com/ablcglobal/*

Future of Biogas Europe 2018, 7-8 November 2018, London, United Kingdom
Conference website: http://ibbk-biogas.de/future-of-biogas-europe-2018

NGVAmerica Meeting & Industry Summit, 13-16 November 2018, Palm Springs, California, USA
Conference website: http://ngvshow.com/

World Fuels Forum, 21-23 November 2018, Berlin, Germany
Conference website: http://worldfuelsforum.com/

Marine Fuels & Lubricants Conference, 11-12 December 2018, Dubai, United Arab Emirates
Conference website: *https://marinefuels.ticketforevent.com/*

IMPRINT

The **Advanced Motor Fuels Technology Collaboration Programme** (AMF TCP) is one of the International Energy Agency's (IEA) transportation related Technology Collaboration Programmes. These are multilateral technology initiatives that encourage technology-related activities that support energy security, economic growth and environmental protection.

AMF provides an international platform for co-operation to promote cleaner and more energy efficient fuels and vehicle technologies. This newsletter contains news articles on research, development and demonstration of advanced motor fuels, information about related policies, links to AMF projects, and an overview over publications and events.

The newsletter is prepared based on contributions from Werner TOBER and Robert ROSENITSCH, TU Vienna, Shinichi GOTO, AIST, Andy Burnham, ANL, and Manfred WÖRGETTER, BIOENERGY 2020+. It is edited by Dina Bacovsky, BIOENERGY 2020+. The Newsletter is available online at: www.iea-amf.org

AMF welcomes interested parties to make contact and to become members of the AMF family. If you wish to get in touch please contact the AMF Secretary, the AMF ExCo Chair or your national AMF Delegate, see contact information below.

AMF Secretary

Dina Bacovsky
Bioenergy 2020+
dina.bacovsky@bioenergy2020.eu
+43 7416 52238 35

AMF ExCo Chair

Magnus Lindgren
Swedish Transport Administration
magnus.lindgren@trafikverket.se

AMF Delegates

Austria
Austrian Federal Ministry for Transport, Andreas Dorda

Canada
CanmetENERGY, Niklas Ekstrom

Chile
Ministerio de Energia, Ignacio Santelices

People's Republic of China
CATARC, Donglian Tian

Denmark
DTU, Jesper Schramm

Finland
VTT, Nils-Olof Nylund

Germany
FNR, Birger Kerckow

India
Ministry of Petroleum and Natural Gas, Sandeep Poundrik

Israel
Ministry of Energy and Water Resources, Bracha Halaf

Japan
AIST, Shinichi Goto
LEVO,Yutaka Takada
NTSEL, Terunao Kawai

South Korea
KETEP, Hyun-choon Cho

Spain
IDAE,
Francisco José Domínguez Pérez

Sweden
Swedish Transport Administration, Magnus Lindgren

Switzerland
SFOE, Sandra Hermle

Thailand
PTT, Arunratt Wuttimongkolchai

The United States
DOE, Kevin Stork