October 2023

Advanced Motor Fuels News

Sustainable Aviation Fuels (SAF) Production on the Rise

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ADVANCED MOTOR FUELS
IEA-AMF
Technology Collaboration Programme on
Advanced Motor Fuels

DEMONSTRATION / IMPLEMENTATION / MARKETS

Green methanol for Melbourne

Danish A.P. Moller Maersk and ANL, a subsidiary of French shipping major CMA CGM, signed a Memorandum of Understanding (MoU) to explore the commercial feasibility of establishing a green methanol bunkering hub at the Port of Melbourne, Australia. There is growing momentum around methanol as a marine fuel, with over 106 methanol-fueled ships on order as of the end of March according to analysis from class society DNV. This includes container lines, dry bulk and tanker orders, as well as leading names from the cruise sector.

Source: https://www.offshore-energy.biz/maersk-cma-cgm-exploring-green-methanol-bunkering-potential-in-australia/

Joint study on a biomass-based methanation

Osaka Gas Co.,Ltd. (Osaka Gas) announced that it has entered into an agreement with IHI Corporation (IHI) and PETRONAS Global Technical Solutions Sdn Bhd the technical solutions arm of global energy group petronas. A feasibility study will be conducted for a methanation project to produce e-methane from underutilised biomass in Malaysia.

Source:https://www.osakagas.co.jp/en/whatsnew/__icsFiles/afieldfile/2023/04/10/230410.pdf

Spain's first RNG plant opens

Representatives from CycleØ Group, and FNX, together with Domingo Serret from Granja La Carbona held a ribbon-cutting ceremony to mark the completion of Spain's first biomethane production facility with integrated ammonia stripping. Ammonia stripping technology will produce ammonium nitrate and sulfate from the liquid fraction of the waste byproduct of the biomethane production process. This will reduce the need for carbon-intensive mineral fertilisers on the farmCycleØ plans to have 20 biomethane plants underway or operating in Spain by the end of 2024. These facilities represent a total investment of €50 million and will produce 240 GWh of biomethane annually.

Source: https://www.globenewswire.com/news-release/2023/09/15/2743770/0/en/Cycle%C3%98-Inaugurates-Spain-s-First-Biomethane-Plant-with-Ammonia-Stripping.html

POLICY / LEGISLATION / MANDATES / STANDARDS

Global Biofuel Alliance launched

Leaders of India, Singapore, Bangladesh, Italy, USA, Brazil, Argentina, Mauritius and UAE launch the Global Biofuel Alliance (GBA) on the sidelines of the G20 Summit in New Delhi.

GBA is an initiative by India as the current G20 Chair. The Alliance intends to expedite the global uptake of biofuels through facilitating technology advancements, intensifying utilisation of sustainable biofuels, shaping robust standard setting and certification through the participation of a wide spectrum of stakeholders. The alliance will also act as a central repository of knowledge and an expert hub. GBA aims to serve as a catalytic platform, fostering global collaboration for the advancement and widespread adoption of biofuels.

Source: https://www.g20.org/pt/media-resources/press-releases/september-2023/gba/#:~:text=Prime%20Minister%20Shri%20Narendra%20Modi,G20%20Summit%20in%20New%20Delhi.

100% ZEV heavy-duty trucks for California

The California Air Resources Board (CARB) has approved the Advanced Clean Fleets, which will require a phased-in transition to zero-emission medium- and heavy-duty vehicles (MHDVs), including an end to internal combustion truck sales by 2036. For example, government fleets and fleet owners of last-mile delivery vehicles will be required to start transitioning their MHDVs to zero-emission vehicles (ZEVs) starting in 2024. Fleet owners of short and medium distance (drayage) trucks will need to be 100% ZEVs by 2035, while work trucks and day cab tractors must be ZEVs by 2039, and sleeper cab tractors and specialty vehicles must be ZEVs by 2042.

CARB estimates about 1.7 million zero-emission trucks will be on California roads by 2050. The new rule is expected to generate $27 billion in health savings and save fleet owners $48 billion in total operating costs.

Source: https://ww2.arb.ca.gov/news/california-approves-groundbreaking-regulation-accelerates-deployment-heavy-duty-zevs-protect

Mandatory 35% biodiesel blending in Indonesia

Indonesia raised mandatory biodiesel blending to 35% in order to reduce fuel imports amid high global energy prices and to shift to cleaner energy, the energy ministry said. The estimated demand for biodiesel to support B35 implementation is 13.15 million m^3, or around a 19% increase compared to 2022 allocation of 11.03 million m^3.

Source: https://biofuelscentral.com/indonesia-implement-mandatory-35-biodiesel-blending-starting-jan-1-2023/

https://www.reuters.com/world/asia-pacific/indonesias-biodiesel-policy-dry-weather-keep-palm-oil-prices-elevated-2023-03-08/

SPOTLIGHT SHIPPING

U.S. looking at alternative fuels for shipping

The U.S. Department of Energy Bioenergy Technologies Office (BETO) has released a Request for Information (RFI) seeking to understand the maritime industry's current alternative fuels trajectory, the driving forces behind it, and key barriers to achieving the transition to zero-emission fuels. The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, and government agencies on maritime industry alternative fuel advancement and strategies on getting to net zero GHG emissions. This feedback will also supplement the Global Maritime Forum's recently released 2022 survey, "The Shipping Industry's Fuel Choices on the Path to Net Zero".

Source:https://www.energy.gov/eere/bioenergy/articles/department-energy-releases-request-information-progression-clean-fuels

Methanol-enabled container vessel named

Danish shipping and logistics company AP Moller-Maersk held a naming ceremony for the world's first methanol-enabled container vessel in the presence of European Commission President Ursula von der Leyen. The vessel was named "Laura Mærsk". Maersk plans to achieve net-zero greenhouse gas emissions in 2040 across the entire business, and transport a minimum of 25 per cent of ocean cargo using green fuels by 2030, compared to a 2020 baseline.

Source:https://www.maersk.com/news/articles/2023/09/14/eu-commission-president-names-landmark-methanol-vessel-as-laura-maersk

First $2bn green methanol factory

Gasification systems manufacturer SunGas Renewables announced plans to construct a new green methanol production facility in central Louisiana, US, as it gears up to fuel Maersk's new fleet of methanol-powered container ships. The syngas supplier will form a new company, called Beaver Lake Renewable Energy (BLRE), to carry out the construction of the facility, which is expected to generate nearly 400,00 metric tons of green methanol for marine fuel per year.

Source: https://www.ship-technology.com/news/sungas-green-methanol-factory-maersk-partnership/

SPOTLIGHT AVIATION

Flying hydrogen laboratory acquired

The German Aerospace Center (DLR) has received a new D328 UpLift research aircraft. The procurement, conversion and use of the aircraft for research into hydrogen technologies in air transport is part of the UpLift project, funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK). The flying testbed will translate research into practical applications on the way to climate-friendly air transport and points the way towards a new generation of aircraft in the regional class. Importantly, the research aircraft will be made available to as many interested industrial and research partners as possible, with an open technology policy.

Source: https://www.dlr.de/en/latest/news/2023/03/dlr-acquires-flying-hydrogen-laboratory-and-demonstrates-integrated-solutions

SAF+ Consortium and eFuel Alliance join forces

SAF+ Consortium and the eFuel Alliance are cooperating on the ramp-up of e-SAF. The two organisations plan to leverage their respective efforts, strengthen connections and deliver a unified and global message about the many benefits of e-SAF with the collaboration. It is expected that an ambitious ramp-up of e-SAF will also have a positive impact on the transformation of other transport applications as such projects benefit from the commercial momentum to transition to low carbon alternative fuels and complimentary infrastructure

Source: https://www.efuel-alliance.eu/fileadmin/Downloads/Pressemitteilungen_2023/20230821_Press_release_SAF_Consortium_eFuel_Alliance_FINAL_EN.pdf

Renewable diesel and SAF production in Brazil

Brazil's Acelen will invest $2.4 billion over the next 10 years in the production of renewable diesel and sustainable aviation fuel through the hydrotreatment of vegetable oils and animal fat. The new biorefinery, which the company plans to begin building in January 2024, will have the capacity to produce about 1 billion liters per year. The company is expected to start production in the first quarter of 2026. In the first phase of the project, soybean oil, while in the in the second stage, Macaúba oil and palm oil will be used, with a forecast to start planting in 2025.

Source:https://www.greencarcongress.com/2023/04/20230418-acelen.html

Methanol-to-Jet fuel plant to be developed

Danish renewables developer European Energy A/S will partner with Swiss cleantech firm Metafuels AG to develop a methanol-to-jet fuel plant in Denmark.

The plant will use Metafuels' aerobrew technology for the conversion of green methanol to SAF.

Source: https://renewablesnow.com/news/european-energy-metafuels-plan-methanol-to-jet-fuel-plant-in-denmark-827145/

Vegan technology for SAF

Shandong Haike Chemical Co. Ltd, a Chinese refining and petrochemical company, has selected Axens'

Vegan technology to produce low carbon, cost competitive SAF by retrofitting its existing assets.

The technology is a second-generation HVO solution, which processes up to 100% of any kind of lipid, including wastes from agriculture and food industry to produce renewable fuels that are able to reduce greenhouse gas emissions by up to 80% compared with a conventional jet fuel production scheme.

Source: https://www.axens.net/resources-events/news/pr-axens-will-provide-veganr-technology-haike-chemicals-its-sustainable#:~:text=This%20new%20contract%20with%20Haike,European%20and%20North%20American%20markets.

Jet Zero Australia and LanzaJet partner up

LanzaJet, a sustainable fuels technology company and producer, announced it is collaborating with Jet Zero Australia to start project development to progress towards the deployment of its leading LanzaJet Alcohol-to-Jet (ATJ) technology for a SAF production plant in Queensland, Australia. The Queensland Government, Qantas, and Airbus support the plant. The SAF produced in Queensland will grow the supply for the Australian domestic market, including the nation's flag carrier, Qantas Group, which has committed to using 10% SAF in its overall fuel consumption by 2030 and achieving net zero emissions by 2050.

Source: https://www.lanzajet.com/sustainable-aviation-fuel-readies-to-take-flight-in-australia/

Repsol and Ryanair sign SAF agreement

Repsol and Ryanair have signed a strategic agreement to promote the use of SAF in Spain and Portugal. Thereby reinforcing their role as relevant players in the decarbonisation of the aviation sector and establishing a collaboration framework for the coming years to move towards sustainable air transport. With this agreement, Repsol will provide Ryanair with access to a maximum of 155,000 tons of SAF between 2025 and 2030, equivalent to the fuel used on more than 28,000 flights between Dublin and Madrid.

Source: https://www.repsol.com/en/press-room/press-releases/2023/repsol-and-ryanair-sign-agreement-to-promote-renewable-fuels/index.cshtml

SPOTLIGHT PUBLIC TRANSPORT

Canadian electric transit bus deployment

The Canadian government is supporting the purchase of 5,000 buses through its Zero Emission Transit Fund. For example, Quebec recently announced the largest electric transit bus project in North America, with $2.1 billion CAD funding from the Canada and Quebec governments will see up to 1,229 Nova buses deployed among Quebec's 10 transit providers. The City of Calgary has received $490 million CAD from the Canadian government and Canada Infrastructure Bank to purchase up to 259 electric buses. While the Toronto Transit Commission awarded a new five-year, contract to purchase 186 New Flyer electric transit buses, with the option for an additional 435 buses over the duration of the contract.

Source: https://www.cbc.ca/news/canada/montreal/nova-bus-quebec-canada-electric-buses-1.6836326

Zero emissions transport promoted in Colombia

The World Resources Institute in Colombia and VGMobility through the TUMI E-Bus Mission Initiative have proposed the creation of a platform to encourage the decarbonisation of transport public in Columbia. This initiative seeks to provide solutions to improve public transport conditions, make its operation more efficient, reduce greenhouse gas emissions, solve traffic problems and address other challenges that affect the quality of life of service users. Currently, 406 electric busses are in operation in Bogota. The initiative aims to procure 100,000 e-buses in the Global South.

Source: https://wrimexico.org/news/bolet%C3%ADn-de-prensa-impulsan-transporte-cero-emisiones-en-ciudades-colombianas

https://sustainablemobility.iclei.org/tumi/

SPOTLIGHT HYDROGEN

U.S. National Clean Hydrogen Strategy and Roadmap

The U.S. Department of Energy released its U.S. National Clean Hydrogen Strategy and Roadmap. It provides a current snapshot of hydrogen production, transport, storage, and use and presents a strategic framework for achieving large-scale production and use of clean hydrogen in the future.

The document explores opportunities for clean hydrogen to contribute to national decarbonisation goals across multiple sectors of the economy, including transportation. It highlights the potential for direct use of hydrogen use in heavy-duty vehicles, maritime applications and ports, aviation, and rail. In addition, it discusses the potential to produce hydrogen from biomass and the need for hydrogen in the advanced biofuels industry, particularly for the production of sustainable aviation fuel and power-to-liquid fuels.

Source: https://www.hydrogen.energy.gov/clean-hydrogen-strategy-roadmap.html

German National Hydrogen Strategy updated

The Federal cabinet of Germany adopted the update of the National Hydrogen Strategy. The National Hydrogen Strategy from 2020 remains in place in principle, but is now being further developed with the update to the increased level of ambition in climate

protection and the new challenges on the energy market. It sets state guidelines for the generation, transport and use of hydrogen and its derivatives and consolidates the measures of the Federal Government. The stated aim of the German government is to ensure a reliable and sustainable supply of green hydrogen.

Source: https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2023/07/20230726-federal-cabinet-update-national-hydrogen-strategy.html

AMF NEWS

AMF ExCo meetings

AMF held its 65th ExCo meeting in June 2023 online. During the meeting, a new project was started, focusing on "Powertrain options for Non-Road Mobile Machinery". The project is led by Finland and will conduct engine tests and real-world test of NRMM as well as assess modelling methods for the evaluation of CO2 emissions and fuel consumption.

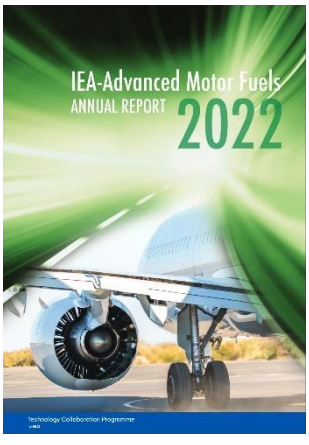
Discussions are ongoing to also create projects on exhaust after-treatment systems, and on sustainable aviation fuels (as follow-up on Task 63 that will be closed).

Since 2024 will mark the 40th anniversary of the AMF TCP, AMF is working on a jubilee publication, which shall highlight the impact that AMF work has had in the past and might have in the future.

The next ExCo meeting will take place 24-27 October 2023 in Leipzig, Germany, and will include a workshop on renewable fuels (see events) and information exchange with IEA Bioenergy Task 39 "Biofuels to decarbonize transport".

Recent AMF Publications

AMF Annual Report 2022



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 (Tasks). In addition, the AMF Chairman provides an outlook on advanced motor fuels.

Link: www.iea-amf.org/annualreport

Task 60 Key messages

Work on the AMF project "The Progress of Advanced Marine Fuels" was recently completed, and the final report and the key messages have been published on the AMF website. The USA are reporting activities to make low-carbon fuels available at US ports, calculate their GHG emissions, assess and improve their end-use properties, and identify novel pathways of production. China´s contribution focused on the potential of converting their fishing vessels to the use of methanol. Austria presented a hydrogen-methanol propulsion concept with onboard pre-combustion CO2 removal, and Korea presented ammonia dual fuel approaches.

Link: https://iea-amf.org/content/projects/map_projects/60

Task 63 Key messages

Austria, Brazil, China, Denmark, Germany, Switzerland, and the US worked together to assess the status quo of sustainable aviation fuels, identify the main challenges, and highlight best practice example. The main conclusion of the project was that the implementation of SAF is, first and foremost, an economic problem, not a technical one. If we want to achieve the aviation sector´s ambitious targets, we need to start investing now. The SAF price can be lowered only with a learning curve, and technologies can only be improved and optimized once they are in operation. Compliance with sustainability must be ensured along the entire value chain.

Link: https://iea-amf.org/content/projects/map_projects/63

Task 63 Key messages

The full list of current AMF projects includes:

- NEW TASK: Powertrain options for Non-Road Mobile Machinery
- Task 64: E-fuels and End-Use Perspectives
- Task 63: Sustainable Aviation Fuels
- Task 62: Wear in engines using alternative fuels
- Task 61: Remote Emission Sensing
- Task 60: The Progress of Advanced Marine Fuels
- Task 28: Information Service & AMF Website

Link: https://www.iea-amf.org/content/projects/ongoing_projects

PUBLICATIONS

Role of biogas and biomethane in pathways to net zero

Biogas is produced as the main product of anaerobic digestion (AD) of wet biomass. Biogas can be used locally for heat purposes or for power and heat production (CHP); as an alternative, biogas can be upgraded to bio-methane to replace natural gas. As such, it is one of the means to reduce the consumption of fossil fuels and contribute to the transition towards a net zero energy system.

This position paper – developed by members of IEA Bioenergy Task 37 ("Energy from Biogas") – provides central knowledge and features of biogas and biomethane. The main conclusion is that biogas and biomethane have plenty of options to be used in a pathway to net zero. They provide sustainable flexible

systems that play essential roles in circular economy, energy, and environmental systems.

Link:https://www.ieabioenergy.com/blog/publications/position-paper-the-role-of-biogas-and-biomethane-in-pathways-to-net-zero/

Marine methanol: Future-proof shipping fuel

The Methanol Institute published the first comprehensive guide to methanol as a marine fuel. The report provides information on how methanol can help the shipping industry navigate the transition towards low carbon and carbon neutral shipping in a cost-effective and practical manner.

Link: https://www.methanol.org/wp-content/uploads/2023/05/Marine_Methanol_Report_Methanol_Institute_May_2023.pdf

SAF Roadmap

The Sustainable Aviation Fuel Grand Challenge Roadmap was developed by an interagency team. U.S. DOE, U.S. DOT, and USDA worked with the U.S. Environmental Protection Agency, other government agencies, and stakeholders from national labs, universities, nongovernmental organizations, and the aviation, agricultural, and energy industries. The roadmap lays out six action areas spanning all activities with the potential to affect the SAF Grand Challenge objectives of (1) expanding SAF supply and end use, (2) reducing the cost of SAF, and (3) enhancing the sustainability of SAF.

Link:https://www.energy.gov/eere/bioenergy/articles/sustainable-aviation-fuel-grand-challenge-roadmap-flight-plan-sustainable

Sustainability of renewable hydrocarbon fuels

Researchers at multiple Department of Energy national laboratories teams conducted in-depth supply chain sustainability analysis for the production of renewable hydrocarbon transportation fuels via a range of conversion technologies. Including (1) renewable hydrocarbon fuels via hydrothermal liquefaction (HTL) of wet sludge from a wastewater treatment plant; (2) renewable hydrocarbon fuels via biochemical conversion of herbaceous lignocellulosic biomass; (3) renewable hydrocarbon fuels via HTL of an algae/woody biomass blend; and (4) renewable hydrocarbon fuels via combined algae processing. The report examines greenhouse gas emissions, water consumption, and air pollutant emissions of both biomass feedstock production and biofuel production.

Link: https://greet.es.anl.gov/publication-renewable_hc_fuel_2022_update

Renewable electrolysis hydrogen for maritime applications in Brazil

The study estimates renewable electrolysis hydrogen production costs and life-cycle GHG emissions for maritime applications in Brazil. It compares life-cycle GHG emissions to that of conventional fuel marine gas oil (MGO) and among different pathways to produce, transport, store, and use hydrogen in maritime applications.

Link: https://theicct.org/publication/maritime-brazil-hydrogen-costs-mar23/

Energy security and climate change perspectives in Southeast Asia

This policy brief aims to highlight the importance, benefits, and challenges that Southeast Asia faces in implementing hydrogen technologies to support the power generation, industry and transport sectors. According to the 7th ASEAN Energy Outlook (AEO7), Southeast Asia will face many different kinds of energy security concerns in the coming years. Much of the electricity in Southeast Asia today is generated from natural gas. However, gas production has been declining in the Region for many years and there are no sufficiently large deposits of natural gas left. Hence, the Region is predicted to become a net natural gas importer by 2025.

Link: https://aseanenergy.org/sea-hydrogen/

Outlook on ASEAN energy 2023

The report lists the key insights about the energy landscape and trends in ASEAN countries. Key insights include:

- Re-emergence of ASEAN Energy Security under the Global Crisis: Ensuring energy security during the crisis
- ASEAN's Global Commitments to Energy Transition: Looking at the climate action plans and strategising international public supports
- Tracking ASEAN Energy Targets and Policies: Monitoring the energy transition while maintaining energy adequacy
- ASEAN Energy Priorities 2022-2023: Trailing ASEAN Chairmanship's achievements and priorities

Link: https://aseanenergy.org/outlook-on-asean-energy-2023/

Innovative biomethane for REPowerEU

Europe's energy security is under pressure from rising costs, climate change, domestic and international energy policy, and conflict. Biomethane – natural gas produced from renewable sources such as municipal and agricultural waste – offers a reliable, drop-in fuel that can meet the energy needs of citizens. This Projects Info Pack displays the research being carried out to grow Europe's biomethane industry, boosting energy security and helping to deliver on the EU's ambitions for a competitive, low carbon economy.

Link: https://op.europa.eu/en/publication-detail/-/publication/c4651f9b-eaf2-11ed-a05c-01aa75ed71a1/language-en/format-PDF/source-289210229

2023 EU biomethane country fiches

The biomethane country fiches published by the Directorate-General for Energy aim to encourage and

support further cooperation between EU countries and/or industry stakeholders, also in the light of the ongoing process to update the National Energy and Climate Plans.

Link: https://energy.ec.europa.eu/publications/2023-biomethane-country-fiches_en

Biomass production, supply, uses and flows in the EU

The European Union (EU) uses biomass to meet its needs for food and feed, energy, and materials. The demand and supply of biomass have environmental, social, and economic impacts. Understanding biomass supply, demand, costs, and their associated impacts is particularly important for relevant EU policy areas, to facilitate solid and evidence-based policymaking. As the European Commission's (EC) in-house science service, the role of the EC's Joint Research Centre (JRC) is to provide EU policies with independent, evidence-based, scientific, and technical support throughout the whole policy cycle, thereby contributing to coherent policies. To provide a sound scientific basis for well-prepared EC policy making, the JRC was requested by Commission services to periodically provide data, processed information, models, and analysis on EU and global biomass supply and demand and its sustainability. This report is the third public-facing report under this mandate.

Link: https://op.europa.eu/en/publication-detail/-/publication/85a85036-1c6c-11ee-806b-01aa75ed71a1

EVENTS

DATAGRO International Conference on Sugar and Ethanol

23-24 October 2023, São Paulo, Brazil

https://www.datagroconferences.com/eventos/conferencia-internacional-datagro/

International expert workshop "Ten times more renewable fuels"

24 October 2023, Leipzig, Germany

https://www.dbfz.de/en/events/international-expert-workshop

Green Shipping Conference

2 November 2023, Vancouver, Canada

https://vmcclimate.ca/greenship2023

Zero CO_2 Mobility

7-8 November 2023, Berlin, Germany

https://fev-live.com/zero-co2-mobility/

Heavy-Duty, On- and Off-Highway Engines 2023

7-8 November 2023, Nuremberg, Germany

https://www.atzlive.de/en/events/heavy-duty-on-and-off-highway-engines/

Alternative Fuels and Chemicals Coalition Global Biobased Economy Conference & Exhibit

12-14 November 2023, Washington, DC, USA

https://www.altfuelchem.org/2023-afcc-biobased-economy-co

A3PS Conference Eco-Mobility 2023

16-17 November 2023, Vienna, Austria

https://www.a3ps.at/event/eco-mobility-2023

The Future of Biogas Europe Summit 2023

22-23 November 2023, Amsterdam, the Netherlands

https://www.wplgroup.com/aci/event/future-biogas-europe/#tabs-2

London EV Show

28-30 November 2023, London, UK

https://londonevshow.com

RNG Conference

11-14 December 2023, Dana Point, California, USA

https://www.rngcoalition.com/rng-conference/

Fuels for the Future

22-23 January 2024, Berlin, Germany

https://www.fuels-of-the-future.com/en

Clean Fuels Conference

5-8 February 2024, Fort Worth, Texas, USA

https://www.cleanfuelsconference.org/

Lignofuels 2024

7-8 February 2024, Helsinki, Finland

https://www.wplgroup.com/aci/event/lignocellulosic-fuel-conference-europe/#tabs-2

International Biomass Conference & Expo

4-6 March 2024, Richmond, Virginia, USA

http://www.biomassconference.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 Robert ROSENITSCH, TU Vienna, Shinichi GOTO, AIST, and Andy BURNHAM, ANL. It is edited by Lena HUCK, FNR and Dina BACOVSKY, BEST – Bioenergy and Sustainable Solutions. 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.

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