Technology Collaboration Programme
by IEA

August 2025

Advanced Motor Fuels News

Photo by Harrison Kugler on Unsplash

Several decisions taken by the US government but also by particular companies are putting the ambitions towards a fossil-free future of advanced motor fuels under pressure.

Read more…

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CONTENTS

IEA-AMF Technology Collaboration Programme on Advanced Motor Fuels

DEMONSTRATION / IMPLEMENTATION / MARKETS

Developing Biomethane Production in the Palm Industry

Palm Oil Mill Effluent (POME) contains a large amount of organic matter, from which methane gas is naturally generated, leading to the issue of greenhouse gas emissions into the atmosphere. IPC (IHI Group Company) owns technology knowhow of anaerobic wastewater treatment system, which is used for the treatment of high-concentration organic wastewater. They plan to explore the development of an integrated treatment system that combines MTCO's anaerobic cover lagoon technology, which utilizes the activity of microorganisms thriving under anaerobic conditions, to maximize biogas production from POME.

Source:

https://www.ihi.co.jp/all_news/2025/resources_energy_environment/1201464_13752.html

INERATEC opens e-Fuel production plant in Frankfurt

In June 2025, the German cleantech company INERATEC officially inaugurated ERA ONE, a Power-to-Liquid plant for the production of e-Fuels and e-Chemicals. The plant in Frankfurt-Höchst is the largest of its kind in Europe with an annual production capacity of up to 2,500 tons of carbon-neutral e-Fuels. This will make commercial-scale volumes of synthetic fuels available in Europe for the first time and helps to achieve the EU's 2030 and 2050 climate targets.

The new ERA ONE plant strives to offer solutions for significant challenges related to emissions in sectors that are hard to electrify, like aviation and shipping. Climate-neutral e-Fuels are not just technologically possible, ERA ONE also intends to demonstrate their market-readiness.

Source:

https://www.ineratec.de/en/news/ineratec-opens-era-one-europes-largest-e-fuel-production-plant-goes-operation-frankfurt

US car manufacturer GM shifts back to V-8 engines production

General Motors announced plans to invest $888 million in its Tonawanda Propulsion plant to support the production of the sixth generation of GM's V-8 engines, used in full-size trucks and SUVs. This new generation of engines is expected to deliver better performance than current engines while benefiting fuel economy and reducing emissions. New combustion and thermal management innovations are a key factor driving these improvements.

The decision to shift investment from EV drive units produced in the same plant to V-8 construction reflects GM´s ambition to adapt to slower-than-expected market demands for EVs. Further, it follows a lobbying campaign addressing the Congress to rescind California EV rules.

Source:

https://news.gm.com/home.detail.html/Pages/news/us/en/2025/may/0528-GM-invest-888-million-Tonawanda-Propulsion-plant.html

Liquefied Petroleum Gas synthesized directly from CO_2

In January, Kanadevia and AIST succeeded in synthesizing LPG directly from CO2 under low pressure conditions of less than 1 MPa, using a newly developed special catalyst and synthesis process and equipment. Based on the result of this study, Kanadevia and AIST Group plan to examine the possibility of scaling up, and start a year-long demonstration test for annual production of 3 to 4 tons.

Source:

https://www.aist.go.jp/aist_e/list/latest_research/2025/20250130/en20250130.html

UPM to terminate its ambitions on a second biomass-to-fuel refinery

Europe´s largest paper company UPM and producer of tall-oil based renewable diesel plans to discontinue the development of its potential second biomass-to-fuels refinery at the Port of Rotterdam. The decision is based on extended technical, commercial and strategic evaluations.

Giving up the plans for the Rotterdam biofuel refinery does not imply that UPM steps back from its bio-refinery and biofuel ambitions at all. The biofuel refinery in Lappeenranta is further operated and remains the core of the UPM´s biofuel platform.

Source:

https://www.upm.com/about-us/for-media/releases/2025/05/upm-sharpens-its-focus-on-biofuels-growth-strategy-and-plans-to-discontinue-the-rotterdam-biofuels-refinery-project/

EIB and Eni sign agreement to convert Livorno refinery into a biorefinery

The European Investment Bank (EIB) and Eni have signed a €500 million 15-year finance contract to support the conversion of Eni's Livorno refinery in Tuscany into a biorefinery. Eni's project involves the construction of new plants to produce hydrogenated biofuels at the Livorno refinery site, including a biogenic pre-treatment unit and a 500 000-tonne/year Ecofining™ plant.

Source:

https://www.eni.com/en-IT/media/press-release/2025/07/eib-eni.html

POLICY / LEGISLATION / MANDATES / STANDARDS

US Senate ends California´s mandate on electric vehicles

The US Senate has blocked emissions regulations in the state of California that provide for an end to the sale of new fossil-fuel-powered cars in 2035. The Republican-dominated body voted by a majority to repeal an exemption that allowed the state to enact its own rules under the federal Clean Air Act. The waiver for the 2020 ban on internal combustion vehicles had only been granted in December 2024 under previous President Joe Biden.

At the same time, the Senate blocked two other Californian regulations aimed at reducing the proportion of combustion engines in trucks and limiting nitrogen oxide emissions from heavy vehicles. The House of Representatives, the second legislative chamber of the US Congress, also decided to end state subsidies for the purchase of electric cars.

Source:

https://www.epw.senate.gov/public/index.cfm/2025/5/senate-passes-capito-resolution-to-end-california-s-ev-mandate

Europe: concerns regarding fraudulent biodiesel and feedstock imports

COPA and COCEGA, the largest umbrella organizations in the agriculture sector in Europe, representing European farmers and agri-cooperatives, are seriously concerned. They state that the energy content multiplier — or double counting — applied under the Renewable Energy Directive (RED) transport targets is increasingly being misused, turning into an entry point for a wave of fraudulent feedstock imports, ranging from used cooking oil, palm oil mill effluents and advanced ethanol. This would clearly contravene its original objective, to support the green transition in the EU.

COPA and COCEGA insist that waste vegetable oils are widely traded globally, what makes them particularly vulnerable to fraud and lack of traceability. This results in unfair competition against biofuels from EU crops and waste, while the mechanism unintentionally creates incentives for the demand of palm oil and increase the risk of land use change.

Both associations issued a letter to the President of the Council and the European Commissioner for Energy, calling for immediate and coordinated action to restore market integrity, rebuild trust in certification schemes, and safeguard the EU's long-term energy and environmental objectives.

Source:

https://copa-cogeca.eu/publications

Japan: Seventh Strategic Energy Plan

The Government of Japan formulates the Strategic Energy Plan under the Basic Act on Energy Policy to show the basic directions for Japan's energy policies. The Advisory Committee for Natural Resources and Energy started discussions on the Seventh Strategic Energy Plan in May 2024 and presented the draft version of the plan on December 17, 2024. Following this, a Cabinet Decision was made on the Seventh Strategic Energy Plan on February 18, 2025, today, after going through the Public Comment Procedure and other processes. The Plan strongly supports the construction of the hydrogen supply chain, in line with the Hydrogen Society Promotion Act enacted in May 2024. Hydrogen and its derivatives (including ammonia, synthetic methane, and synthetic fuels) are identified as key to achieving carbon neutrality. The Plan also promotes the introduction of biofuels and aims to enhance the business and financial environments to secure investment in decarbonised power sources. This includes developing and utilising cutting-edge technologies, improving data centre efficiency, and supporting the renewal of advanced equipment in factories.

Source:

https://www.meti.go.jp/english/press/2025/0218_001.html
https://www.ashurst.com/en/insights/japans-new-energy-plan/#:~:text=On%2018%20February%202025%2C%20the%20Japanese%20government%20approved,primary%20focus%20on%20achieving%20carbon%20neutrality%20by%202050.

Japan`s GX2040 Vision2

Towards Green Transformation (GX), which will simultaneously achieve a stable energy supply, economic growth, and decarbonization, a growth-oriented carbon pricing initiative has been launched to attract public and private investment of 150 trillion yen over 10 years. Amid growing uncertainty about the investment environment, including the increasingly tense international situation and the possibility of increased electricity demand due to the progress of GX and Digital Transformation (DX), the Government of Japan has formulated the GX2040 Vision. The mid- to long-term outlook revises the Strategy for Promoting the Transition to a Decarbonized Growth-Oriented Economic Structure (GX Promotion Strategy).

Link:
https://www.meti.go.jp/press/2024/02/20250218004/20250218004.html (in Japanese)

SPOTLIGHT SHIPPING

Green Ammonia used to refuel vessel in China

Green ammonia from the world's largest operating renewable hydrogen project — Envision's 500MW scheme in Chifeng in Inner Mongolia — has been used to refuel a medium-sized vessel at a port in China, just two weeks after the plant began production.

The operation, carried out by refuelling (or "bunkering") specialist China Shipping and Sinopec Suppliers at the port of Dalian in northeastern China, was claimed by Envision as the "world's first" to use green ammonia.

Source:

https://www.hydrogeninsight.com/production/worlds-first-green-ammonia-ship-refuelling-completed-using-molecules-from-giant-500mw-hydrogen-plant/2-1-1850453

SPOTLIGHT BIOGAS

Japan's Gas Industry Allows Gas with Carbon Capture in 2050 Net Zero Plan

The Japan Gas Association stated that it aimed to supply 50-90% by 2050 of its gas from biogas or e-methane, with 10-50% coming from natural gas and carbon capture. The group, including city gas suppliers had originally set an initial target of 90% e-methane produced from green hydrogen, CO2, and 5% biogas by 2050. The updated plan includes a greater role for natural gases, paired with carbon-offsetting technologies, such as carbon storage and capture, carbon capture, and utilization, and forest absorption. This could cover 10-50% future supply.

Source:

https://www.worldenergynews.com/news/japan-gas-industry-allows-gas-with-carbon-761888

SPOTLIGHT BIOFUELS

Thailand new premium biodiesel "H-FAME"

National Energy Technology Center (ENTEC) under National Science and Technology Develop Agency in Thailand, has started providing premium biodiesel H-FAME. H-FAME stands for Partially Hydrogenated FAME and is produced after partial hydrogenation of current FAME. Properties and emissions improvements are as follows: oxidation stability of neat H-FAME; more than 100 h by Rancimat method and less than 0.12 mgKOH/g by ΔTAN method. Emissions; reduction of PM by 86% and slight increase of NOx by 2.9%, compared to petroleum diesel emissions. 10,000 km on-road test using a pickup truck (EURO IV) with B100H-FAME revealed no problems. Based on these results, ENTEC has started providing H-FAME samples to companies.

Source:

https://www.entec.or.th/th/news-entec-2025-03-11-entec-nstda-nedo-premium-h-fame/

Indonesia to fully implement B40

Energy ministry official Eniya Listiani Dewi said the distribution of the palm oil-based biodiesel this year has reached around 1.2 million kilolitres, Reuters reported. Indonesia had planned to launch the mandatory B40 mix, containing 40% of palm oil fuel, from 1 January 2025 but faced some delays due to regulatory issues and so fuel distributors were given until the end of February as a transition period. Indonesia, the world's biggest palm oil producer, has allocated 15.6 million KL of biodiesel for distribution in 2025, up from around 13 million KL last year.

Source:

https://biofuels-news.com/news/indonesia-to-fully-implement-b40-biodiesel/

Malaysia expands biodiesel usage at KL airport

Malaysia is ramping up its biodiesel initiative by increasing the blend used in ground transport vehicles at its main international airport, in a bid to reach net-zero carbon emissions by 2050. Plantation and Commodities Minister Johari Abdul Ghani announced that the country will upgrade from the current B10 biodiesel blend — comprising 10% palm-based biodiesel — to B20 for airport ground transport vehicles.

Source:

https://biofuels-news.com/news/malaysia-expands-biodiesel-usage-at-kl-airport/

e-Methanol Production in the US Midwest

Australian engineering company Worley has entered into a collaboration with Danish technology company Topsoe to develop modular e-methanol production plants in the U.S. using green hydrogen and biogenic CO2. The collaboration will use CO2 from bioethanol production in the US Midwest as a key feedstock. The partnership aims to support the shipping industry transition to low-carbon fuels while addressing growing demand, with each facility expected to produce up to 600 tonnes of e-methanol per day.

Source:

https://www.worley.com/en/insights/our-news/chemicals-and-fuels/2025/accelerating-emethanol-production-with-topsoe-in-the-us-midwest

Corn Ethanol Production Growth in Brazil

Starting August 1, 2025, Brazil will increase the blend of ethanol in gasoline from 27% to 30% and of biodiesel in diesel from 14% to 15%. While Brazil is the world's largest producer of sugarcane, production has flattened recently. However, corn ethanol production has more than tripled in the past five years and now represents 23% of ethanol production in Brazil. The growth has been attributed to corn yields doubling over the past twenty years. Corn ethanol is expected to grow to account for 40% of the fuel's output over the next decade.

Source:

https://www.reuters.com/sustainability/climate-energy/brazil-corn-ethanol-boom-covers-demand-country-hikes-biofuel-mandate-2025-06-27/

SPOTLIGHT AVIATION

SAF for Amazon Cargo Operations

Neste will provide 7,500 metric tons of SAF for Amazon Air cargo operations at San Francisco International Airport and Ontario International Airport in California, through to the end of 2025. The agreement to use SAF in California is part of a broader cooperation between the companies which began when Neste delivered SAF to Amazon at Cologne Bonn Airport in 2021. Neste's SAF is blended with conventional jet fuel and supplied to the Amazon Air network at both airports. The fuel is delivered directly to San Francisco via existing pipeline infrastructure, while in Ontario, the SAF is delivered to the airport by trucks using Neste's renewable diesel.

Source:

https://www.neste.com/news/neste-extends-sustainable-aviation-fuel-saf-supply-to-ontario-international-airport-through-deal-with-amazon-air

Feasibility Study for SAF Plant in Colombia

LanzaJet and BioD are launching a feasibility study to develop the first SAF production plant in Colombia using the alcohol-to-jet technology developed by LanzaJet. The feasibility study will assess the technical, economic, and operational requirements of a SAF plant in Columbia. The project aligns with Colombia's national SAF roadmap that has a strategy to develop sustainable industries in rural areas.

Source:

https://www.lanzajet.com/news-insights/biod

SPOTLIGHT HYDROGEN

ANDRITZ engineers another 100 MW Green Hydrogen Plant for Germany

The international technology group Andritz, based in Graz, has been awarded the contract for the engineering services for the construction of a 100 MW plant to produce green hydrogen in Rostock, Germany. The client is Repco (Rostock Energyport Cooperation GmbH), a joint venture between RWE Generation SE, EnBW Neue Energien GmbH, Rheinenergie AG and Rostock Port GmbH. Subject to the investment decision planned for mid-2025, Repco intends to make the investment decision in mid-2025 and then give Andritz the green light to deliver the plant.

The 100 MW hydrogen plant in Rostock is to be one of the first plants in Germany to feed hydrogen into the German hydrogen core network and the future European Hydrogen Backbone. After its planned commissioning in 2028, this pipeline network is also expected to supply large parts of Europe with green hydrogen. In addition, the new plant will supply local industrial companies and the transport sector.

Source:

https://www.andritz.com/newsroom-en/environmental-solutions/2025-03-03-hyros

JCB´s hydrogen drive receives full approval in Europe

The need for zero-emission solutions in the non-road mobile machinery sector, especially in construction and agricultural sectors, has accelerated the necessity for innovative alternatives to traditional diesel engines. JCB, a leader in construction equipment manufacturing, made history with the official approval of its hydrogen combustion engine for sale and use across Europe. This milestone indicates a major step in sustainable engineering and positions JCB as the pioneer in hydrogen-powered machinery.

JCB's hydrogen combustion engine has received certification from 11 European licensing authorities, including those in major economies like Germany, France, and the UK. This approval means the technology meets stringent safety and performance standards, allowing it to be commercially deployed across the continent. The significance of this certification can hardly be overrated, as it opens doors for widespread adoption in construction and agricultural applications.

Source:

https://drivinghydrogen.com/2025/05/29/jcbs-hydrogen-engine-granted-full-type-approval-in-europe/

India nodal agency SECI cancels green hydrogen hubs tender

The Solar Energy Corporation of India (SECI), a government agency that runs renewables tenders, has cancelled a call for proposals to set up at least two green hydrogen hubs with minimum 100 kt capacity each, by the end of March next year, presumably due to challenges in relation to technical feasibility, capacity demand and limited private sector interest

The agency had launched its call in August last year, offering two billion rupees ($23.3m) in total.

Source:

https://energynews.biz/india-pulls-plug-on-green-hydrogen-hub-tender-amid-capacity-and-feasibility-concerns/#:~:text=The%20Solar%20Energy%20Corporation%20of%20India%20%28SECI%29%20has,capacity%20demands%2C%20and%20possibly%20lukewarm%20private%20sector%20interest.

SPOTLIGHT (Public) Transport

Latin America Electric Bus Fleet Reaches 6,000 Vehicles

Latin America's electric bus fleet reached 6,055 vehicles in 2024, an increase of 13% from 2023. The fleet has grown since 2017 from 800 vehicles, nearly all trolleybuses. However, electric buses are concentrated in a few cities with Santiago, Chile and Bogotá, Columbia accounting for over 65% of the total. 72% of new electric buses deployed in 2024 were deployed in Santiago (34%), São Paulo, Brazil (30%), and Mexico City, Mexico (8%). About 85% of the electric bus fleet were supplied by Chinese manufacturers, while Latin American manufacturers supplied 9%.

Source:

https://theicct.org/publication/latin-america-ebus-market-monitor-2024-may25/

Clean Trucks and Buses for California

California's Clean Truck and Bus Voucher Incentive Project (HVIP) experienced a growth of 177% in voucher redemptions soaring from 2023 to 2024. Over the last 15 years, HVIP has provided $750 million to support the purchase of 10,000 medium- and heavy-duty clean trucks and buses. California public agencies and small businesses make up about 80% of orders. Currently, 6,000 HVIP-funded vehicles have been ordered and are in production. In 2024, school buses were the most requested vehicle, followed by vans and straight trucks.

Source:

https://californiahvip.org/news/hvip-hits-record-growth-as-zero-emission-truck-and-bus-market-expands/

1,000 Zero-Emission School Buses in California

California has awarded $500 million to 133 school districts for 1,000 zero-emission school buses and related charging infrastructure. Awardees receive up to $375,000 to replace internal combustion engine school buses with zero-emission vehicles, in addition to awards up to $95,000 per school bus to purchase and install associated charging infrastructure. Awardees are required to scrap an old internal combustion engine school bus for every new school bus purchased. To date, California has provided a total of $1.3 billion in incentives to school districts, funding more than 2,300 zero-emission school buses, of which 1,100 are already in use.

Source:

https://ww2.arb.ca.gov/news/california-awards-500-million-funding-1000-zero-emission-school-buses-0

AMF NEWS

AMF ExCo Meeting in Vienna

From 26th to 28th May, 24 experts from the 14 AMF member countries came together in Vienna for the 69th AMF Executive Committee meeting.

The meeting started off with an international conference on sustainable aviation fuels (SAF), hosted by Diamond Aircraft and Austro Engine in their hangar. The conference featured a policy session and an industry and research session, along with a tour through the facilities of both companies. The conference presentations are available here.

On the following two days, AMF ExCo delegates discussed progress in ongoing AMF Tasks, ideas for new Tasks (such as work on alternative shipping fuels), and kicked off a new Task on End-use Aspects of Hydrogen Application in Transportation. Also, for the Task on Exhaust After-Treatment Systems, which is a joint Task of AMF with the Sustainable Combustion TCP, Ramin Mehrabian of LEC in Austria was appointed as new Task Manager.

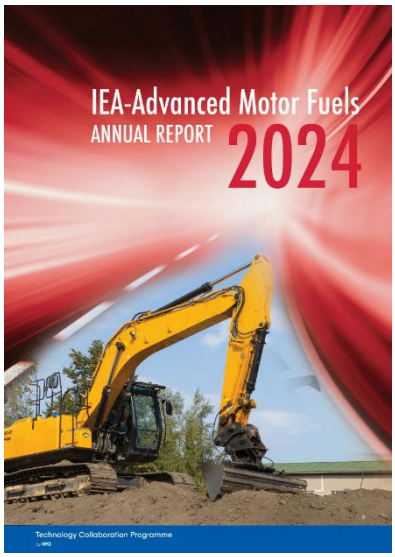
Ongoing AMF Tasks

The full list of ongoing AMF projects includes:

- End-use Aspects of Hydrogen Application in Transportation
- Exhaust After-Treatment Systems (EATS)
- Task 66: Recent Progress in SAF Research
- Task 65: Powertrain options for non-road mobile machinery
- Task 28: Information Service and AMF Website

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

AMF Annual Report 2024



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. In addition, the AMF Chairman provides an outlook on advanced motor fuels, and the Chair of the Strategy & Technology Sub-Committee provides recent highlights.

Link: https://iea-amf.org/annualreport

AMF Task 66 webinar series

The central activity of Task 66: Recent Progress in SAF Research is a series of thematic online seminars about recent research work on sustainable aviation fuels.

Two webinars have already been conducted:

- Enable the use of drop-in unblended SAF and SAF blends up to 100%
- Identification of production process parameters and desirable end-use properties, relevant to mixture preparation, combustion, stability and emission formation through experiments and simulations

The related presentations are available on the AMF website.

The next topics to be covered include:

- Monitoring of SAF R&D, demonstration projects and production deployment
- Status and developments of engine technology in aircrafts using SAF
- Recommendations of new policy measures to further promote SAF production and utilization

Dates and connection details will be published on the Task 66 website and per email.

https://iea-amf.org/content/events/web_seminars/webinars_task66/

PUBLICATIONS

The EU Green Deal - 2024 edition

In this report, the EU Commission focuses on the fundamentals of energy and climate policy as reformulated in the EU Green Deal. The 2024 edition of this report includes updates following the adoption of the Fit for 55 Package, the REPowerEU Plan and the recent reforms of electricity and gas markets in Europe. The reader is guided through the landscape of EU policies to achieve climate neutrality by 2050.

Source:

https://op.europa.eu/en/publication-detail/-/publication/281c9412-ffcb-11ef-9503-01aa75ed71a1/language-en?WT.mc_id=Selectedpublications&WT.ria_c=41957&WT.ria_f=6394&WT.ria_ev=search&WT.URL=https%3A%2F%2Fop.europa.eu%2Fen%2Fweb%2Fgeneral-publications%2Fenvironment-2025

Global energy and climate outlook 2024 – updating NDCs and closing the ambition gap: indicators for 1.5°C alignment

This edition of the Global Energy and Climate Outlook (GECO 2024), in its 10th year of publication, presents an updated view of the implications of energy and climate policies worldwide, finding that the world is still not on track to achieve its climate targets. Whilst emissions peak in the coming years in all scenarios, the world is currently, in the absence of additional action, on track for 2.6°C of warming by the end of the century. Accelerating the power sector transition towards renewable energy sources is crucial to decarbonise the whole energy sector via simultaneous electrification of end uses. Decarbonising remaining sectors that are more costly to electrify requires ramping up the production of low-carbon fuels such as biomass, hydrogen and e-fuels, alongside deploying more mature technologies such as carbon capture and sequestration.

Source:

https://op.europa.eu/en/publication-detail/-/publication/b438292e-e2b2-11ef-be2a-01aa75ed71a1/language-en?WT.mc_id=Selectedpublications&WT.ria_c=41957&WT.ria_f=8962&WT.ria_ev=search&WT.URL=https%3A%2F%2Fop.europa.eu%2Fen%2Fweb%2Fgeneral-publications%2Fclimate

EU biomass supply, uses, governance and regenerative actions

This report is the fourth comprehensive public report by the European Commission's Joint Research Centre (JRC) entirely dedicated to the topic of biomass in its many shapes and forms. This is the ten-year anniversary edition of the JRC Biomass Mandate. The report discusses the competing requirements for biomass, and why this makes it so important to address biomass governance.

The central chapters of the report quantify biomass supply from forests, agriculture, and marine ecosystems, as well as waste streams for a wide range of uses in the European Union. The second half of the report is dedicated to a presentation and discussion of various possible actions to address biomass governance. It is concluded by highlighting the need for system's level assessments to facilitate policy coherence. This report reflects the direct work of JRC scientific staff and their collaborators, bringing together expertise from several units of the organisation, all united by a common attention to biomass.

Source:

https://op.europa.eu/en/publication-detail/-/publication/97ebf16d-4dbf-11f0-a9d0-01aa75ed71a1/language-en?WT.mc_id=Selectedpublications&WT.ria_c=41957&WT.ria_f=6394&WT.ria_ev=search&WT.URL=https%3A%2F%2Fop.europa.eu%2Fen%2Fweb%2Fgeneral-publications%2Fenvironment-2025

Clean Energy Technology Observatory, Impacts of enhanced learning for clean energy technologies on global energy system scenarios

This study examines the impacts of enhancing technology progress in clean energy technologies on the global energy system and economy. The analysis focuses on eight thematic technology groups, including wind, solar, batteries, hydrogen and fuel cells, carbon capture, direct air capture and synfuels, biofuels, and heat pumps. The results show that enhanced learning can lead to significant reductions in greenhouse gas emissions, investment needs, and energy supply costs.

Source:

https://op.europa.eu/en/publication-detail/-/publication/ce6b23d2-ffc6-11ef-9503-01aa75ed71a1/language-en?WT.mc_id=Selectedpublications&WT.ria_c=41957&WT.ria_f=6394&WT.ria_ev=search&WT.URL=https%3A%2F%2Fop.europa.eu%2Fen%2Fweb%2Fgeneral-publications%2Fenvironment-2025

Trends of bioenergy in the member countries of IEA Bioenergy: Country reports – 2024 update

The updated IEA Bioenergy Country Reports show the trends of bioenergy in the IEA Bioenergy member countries up to 2022, highlighting the role of bioenergy in their energy mix. The analysis is based on data from the 2024 IEA World Energy Balances and Renewables Information, combined with input provided by the IEA Bioenergy Executive Committee members.

Source:

https://www.ieabioenergy.com/wp-content/uploads/2025/01/CountriesReport2024_final.pdf

The role of bioenergy in the energy transition, and implications on the global use of biomass

This commentary by experts involved in IEA Bioenergy provides insights into the amount of bioenergy in the IEA Net Zero Emissions for 2050 roadmap, the associated sourcing of biomass, the specific role of biomass in different sectors and the importance of biogenic carbon management.

Source:

https://www.ieabioenergy.com/wp-content/uploads/2025/01/Commentary_RoleBioenergy_Dec2024l.pdf

Biomass gasification for hydrogen production

This report explores ongoing commercial initiatives, highlighting key techno-economic opportunities, challenges, and knowledge gaps. By providing valuable insights, the study aims to enhance understanding of biomass gasification's future potential and the advancements needed for its further development. One of the technological features is, that the CO_2 separation process is an integral part of the gasification system, which means that negative CO_2-emissions can be obtained if carbon capture and storage (CCS) is applied.

Source:

https://www.ieabioenergy.com/wp-content/uploads/2025/03/IEA-Bioenergy_T33_Bio-H2_Final_v2.pdf

Annual European Union greenhouse gas inventory 1990-2023 and inventory document 2025

The EU GHG inventory results from the compilation of the direct sum of emissions and removals from the national inventories of the EU Member States. Energy data from Eurostat are used for the reference approach for CO_2 emissions from fossil fuels, developed by the Intergovernmental Panel on Climate Change (IPCC). Total GHG emissions - including

Land Use, Land Use Change and Forestry (LULUCF) and indirect CO_2 emissions - in the EU amounted to 2 908 million tonnes CO_2 equivalent in 2023. All GHG emission totals provided in this report include indirect CO_2 emissions. In 2023, total GHG emissions were 37 % (1 728 million tonnes CO_2 equivalents) below 1990 levels. Emissions decreased by 8.9 % or 285 million tonnes CO_2 equivalents between 2022 and 2023.

Source:

https://www.eea.europa.eu/en/analysis/publications/annual-european-union-greenhouse-gas-inventory-2025/eu-nid-2025-1.pdf/@@download/file

Imagining a sustainable Europe in 2050

This foresight report looks at how Europe's food, energy and mobility systems and the built environment could evolve. The report takes four imagined futures, or 'imaginaries', developed by the EEA and its network – Eionet, and explores how Europe's key systems might evolve under each possible future.

Source:

https://www.eea.europa.eu/en/analysis/publications/imagining-a-sustainable-europe-in-2050/imagining-a-sustainable-europe-report_2025-th-01-25-005-en-n.pdf/@@download/file

IEA publishes Northwest European Hydrogen Monitor 2025

The third edition of the Northwest European Hydrogen Monitor provides an annual update of low-emissions hydrogen market developments in Northwest Europe and is the result of collaboration among the countries involved in the Hydrogen Initiative of the Clean Energy Ministerial (CEM-H2I) work stream entitled "Roundtable on the North-West European Region" and the hydrogen working group of the Pentalateral Forum. The countries analyzed in this Monitor are Austria, Belgium, Denmark, France, Germany, Luxemburg, the Netherlands, Norway, Switzerland and the United Kingdom.

Source:

https://iea.blob.core.windows.net/assets/e77d3543-065d-49d8-b74c-e6a0283281ee/NorthwestEuropeanHydrogenMonitor2025.pdf

DBFZ publishes comprehensive monitoring of renewable energies in transport

The European Union and large parts of the world are pursuing the ambitious goal of achieving climate neutrality by 2050 at the latest. With an average of 20 % of annual greenhouse gas emissions, the transport sector has a key role to play. The DBFZ, in cooperation with the Technology and Support Centre (TFZ), the Technical University of Hamburg (TUHH), the Paul Scherrer Institute (PSI) and the Fraunhofer Centre for Chemical-Biotechnological Processes (CBP), has compiled a comprehensive monitoring report on the topic of 'Renewable energies in transport'. The study, which has now been published and is freely available, describes the current status of the energy transition in the transport sector in Germany, Europe and worldwide.

Source:

https://www.dbfz.de/en/press-media-library/press/press-releases/dbfz-publishes-comprehensive-monitoring-of-renewable-energies-in-transport

Austria's Annual Greenhouse Gas Inventory 1990-2023

In the 'Austria's Annual Greenhouse Gas Inventory 1990–2023' report, the Umweltbundesamt presents updated greenhouse gas (GHG) emissions in Austria. In 2023, total GHG emissions amounted to 68.6 Mt CO2e (without LULUCF). This corresponds to a 13.6% decrease compared to 1990 and a 6.5% decrease compared to 2022. Key drivers for the development 2022–2023 were the lower natural gas and gasoil consumption, as well as lower diesel oil sales in category Transport.

Emissions of GHG covered by EU Regulation No. 2018/842 ('Effort Sharing Regulation') amounted to around 44.2 Mt CO_2e in 2023 and were thus below the annual emission allocation for that year.

Source:

https://www.umweltbundesamt.at/fileadmin/site/publikationen/rep0952.pdf

Examining the Impact of Electric Vehicle Transition on Jobs in Brazil

This report examines the impact of transitioning Brazil's road vehicle fleet to battery electric vehicles to combine the development of new domestic industries in vehicle assembly and battery manufacturing. The researchers evaluate job and income creation potential from the production of EVs. They developed two scenarios for the evolution of Brazil's national vehicle fleet through 2050, one with significant EV deployments and a baseline with ICE vehicles dominating sales. The results show the electrification scenario would generate more than twice as many jobs as the baseline scenario by 2050. The potential for job creation is due to an increase in aggregate demand that results from growth in EV sales and the expansion of the domestic production of automotive batteries.

Source:

https://theicct.org/publication/the-transition-to-electric-vehicles-in-brazils-automotive-industry-and-its-effects-on-jobs-and-income-june25/

Potential of Brazilian Ports as Renewable Marine Fuel Bunkering Hubs

Researchers analysed the readiness of Brazilian ports to support the production, bunkering, and deployment of renewable hydrogen, ammonia, and methanol. They identified 6 candidates: 3 public ports and 3 private ports. The public ports scored higher in infrastructure, strategic location, and connectivity. They found that five of ten major shipping routes could be completed using liquid hydrogen, while all routes were feasible using ammonia and methanol. To support shipping on these routes, between 1,785 and 1,911 tonnes of renewable hydrogen would be required. This would be approximately 0.2% of Brazil's planned renewable hydrogen production.

Source:

https://theicct.org/publication/the-potential-of-brazilian-ports-as-renewable-marine-fuel-bunkering-hubs-june25/

Impact of Vehicle Electrification on Mexico's Climate Goals

Mexico has a target for 50% of new LDV sales to be zero-emission by 2030 but these targets are not aligned with their current CO_2 emissions standards. The researchers modelled alternative policy scenarios to identify the potential stringency level of the CO_2 standard that could help Mexico achieve its electrification target by 2030. They found that to reach the EV sales goal, the fleet-average gCO_2/km emissions of new LDVs would need to drop by 50% to 70%, compared to 2016.

Source:

https://theicct.org/publication/co2-emission-standards-to-achieve-mexicos-2030-electrification-target-for-ldvs-jan25/

Japan´s Energy White Paper 2025

The Japanese Agency for Natural Resources and Energy published its 2025 White Paper.

Source:

https://www.enecho.meti.go.jp/about/whitepaper/2025/pdf/whitepaper2025.pdf (Japanese)

https://www.enecho.meti.go.jp/en/category/whitepaper/ (English version available here)

ERIA Annual Report 2024

The Economic Research Institute for the ASEAN countries and East Asia published its Annual Report for 2025.

Source:

https://www.eria.org/uploads/AR_2024-23_Jun_2025-web2.pdf

German Board of Trustees for Technology and Construction in Agriculture (KTBL) presents results on agricultural machinery and drive energy

The KTBL working group "Drive systems for agricultural machinery" has examined the options for a climate-friendly design of drive systems. The results were documented in a free publication in 2023. This includes an analysis of fuel requirements for agricultural work and a classification of the suitability and availability of energy sources and drive technologies. In addition to the technical aspects, the authors also consider the necessary changes to the legal framework, the need for research and development and economic aspects.

The document is now available in English.

Source:

https://www.ktbl.de/fileadmin/user_upload/Artikel/Energie/Antriebsenergien/12650_Renewable-drive-energy.pdf

German UBA publishes report on Policy incentives for the uptake of sustainable aviation fuels

Despite policies promoting SAF uptake, their current share in aviation fuel consumption remains minimal: SAF comprises only about 0.1% of total consumption. The report analyses the reasons behind the limited uptake and identifies necessary changes in the reporting and claiming framework to better incentivise SAF adoption and reporting under the EU Emissions Trading System (EU ETS).

Source:

https://www.umweltbundesamt.de/publikationen/policy-incentives-for-the-uptake-of-sustainable

Life Cycle Assessment of New Fuels for for Maritime Transport

IFP Energies Nouvelles in France has conducted a life cycle assessment for a range of new sustainable fuels (e-/bio- methanol and e-/grey-/blue- ammonia) for maritime transport. The fuels were assessed across multiple production pathways, to determine real-world emissions performance and compliance with regulatory frameworks.

Source:

https://www.ifpenergiesnouvelles.fr/sites/ifpen.fr/files/inline-images/20250310_IFPEN_CMACGM_ok.pdf

EVENTS

Latam Mobility Summit Tour

26 – 27 August 2025, Santiago, Chile

13 – 14 October 2025, CDMX, Mexico

https://latamobility.com/en/summit/

New Mobility Congress

23 – 25 September 2025, Katowice, Poland

https://kongresnowejmobilnosci.pl/

North American SAF Conference & Expo

22 – 24 September 2025, Minneapolis, Minnesota, USA

https://saf.bbiconferences.com/ema

Electric & Hybrid Vehicle Technology Expo

6 – 9 October 2025, Detroit, Michigan, USA

https://evtechexpo.com/

2025 JSAE Congress

15 – 17 October 2025, Kitakyusyu, Japan

https://www.jsae.or.jp/2025aki/english/

Biohydrogen Europe 2025

29 – 30 October 2025, London, UK

https://www.wplgroup.com/aci/event/biohydrogen-europe/

Future of Biogas Europe 2025

26 – 27 November 2025, Seville, Spain

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

RNG Conference

1-4 December 2025, Dana Point, California, USA

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

COMODIA 2025 - 11th International Conference on Modelling and Diagnostics for Advanced Engine Systems

15 – 18 December 2025, Chiba, Japan

https://www.ec-convention.com/COMODIA2025/index.html

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 Jan Schmidt, FNR. 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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