

January 2025

# Advanced Motor Fuels News



Photo by Harrison Kugler on Unsplash

“PoWer” project investigates the cross-application use of hydrogen engine powertrain concepts for off-road applications in the construction and agricultural sector.

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## DEMONSTRATION / IMPLEMENTATION / MARKETS

### Brazilian Hydrogen Hub Development

Brazil's Ministry of Mines and Energy announced the selection of 12 low-carbon hydrogen hub projects, which include the production of hydrogen from various sources, such as wind, solar, ethanol, and other biomass. The production capacity of each project ranged from 1,000 and 350,000 tons of hydrogen per year. These projects will be able to compete for resources from the Climate Investments Funds – Industry Decarbonization program.

Source:

<https://brazilenergyinsight.com/2024/12/26/brazil-mme-announces-the-selection-f-12-projects-for-the-creation-of-hydrogen-hubs/>

### First South American Hydrogen Train

Antofagasta PLC will become the first mining company to use a hydrogen-powered locomotive in South America with operation beginning in 2025 between the city of Antofagasta, Chile and the regional port. The 1,000-kilowatt train was developed by CRRC Qishuyan and features a high-capacity battery and a 35 MPa on-board hydrogen storage system. The locomotive will transport sulfuric acid, copper concentrate, anodes, cathodes and other minerals.

Source:

<https://www.mining.com/antofagasta-unveils-south-americas-first-hydrogen-train/>

### Winter canola as biomass-based feedstock: Bayer and Neste to cooperate

The companies have signed a memorandum of understanding (MOU) to jointly scale winter canola in the US as a biomass-based feedstock to meet growing demand for renewable fuel. Bayer aims to launch hybrid TruFlex winter canola in the US in 2027, delivering excellent product stability and performance. Overall goal is to help decarbonize the transportation sector with advancing innovative crops for renewable fuels, such as sustainable aviation fuel and renewable diesel.

Source:

<https://www.bayer.com/media/en-us/bayer-and-neste-to-collaborate-on-developing-feedstocks-for-renewable-fuels>

### Developing hydrogen engines for off-road applications

In the decarbonization of the transport sector, heavy commercial vehicles and non-road mobile machinery (NRMM) are increasingly coming to the fore.

Vehicle and engine manufacturers, suppliers and the scientific community have therefore joined forces in

the “PoWer” project to comprehensively investigate the cross-application use of hydrogen engine powertrain concepts for construction and agricultural applications. The project is led by MAHLE. Further project partners are DEUTZ, KIT, the German Aerospace Aerospace Center (DLR), Pures, Claas, Braunschweig University of Technology, Liebherr Nagel, Umicore, NGK and Castrol. The project is scheduled to run for three years and is funded by the German Federal Ministry for Economic Affairs and Climate Protection with 5.1 million Euros and supported by TÜV Rheinland. MAHLE has been commissioned to manage the project.

Source:

<https://www.mahle.com/en/investor-relations/financial-news/consortium-led-by-mahle-develops-hydrogen-engines-for-off-road-applications-106496>

### Euglena develops next-generation biodiesel fuel with a 51% HVO blend

Compliant with diesel standards, achieving the highest blend ratio for use on public roads, Euglena has developed and will begin supplying "SUSTEO," a next-generation biodiesel fuel made by blending diesel with 51% HVO (Hydrotreated Vegetable Oil).

SUSTEO complies with diesel fuel standards and can be used on public roads in diesel-engine vehicles, just like diesel fuel. Currently, they are promoting a project to construct and operate a commercial biofuel plant in Malaysia with a production capacity of up to 12,500 barrels per day (equivalent to approximately 725,000 KL per year)

Source:

<https://www.euglena.jp/en/news/20241218-3/>

### Bayer acquires Camelina Assets

The companies have closed a deal where Bayer acquires camelina germplasm and intellectual property assets from Smart Earth Camelina Corp. to meet growing demand for renewable fuel. With the addition of camelina crops to Bayer's portfolio, Bayer expands its leadership position in biomass-based feedstock while providing growers with an additional revenue stream. Overall, the goal is to help decarbonize the transportation sector with advancing innovative crops for low-carbon biofuels, including renewable diesel and sustainable aviation fuel.

Source:

<https://www.bayer.com/media/en-us/bayer-acquires-camelina-assets-from-smart-earth-camelina-corp-to-advance-biofuels/>

## POLICY / LEGISLATION / MANDATES / STANDARDS

### The 2nd Asia Zero-Emission Community (AZEC) Leaders Meeting

At this meeting, the leaders of the AZEC partner countries adopted the AZEC Leaders' Joint Statement and its Action Plan for Next Decade. The Joint Statement reaffirmed that the AZEC partner countries intend to contribute to the global decarbonization by accelerating implementation of their regional strategies to promote energy transition and decarbonization through various and practical pathways, according to each country's circumstances.

In addition, leaders concurred in the Action Plan for Next Decade, which consists of the following three pillars: (1) promoting "AZEC solutions" such as developing rules to promote activities that contribute to decarbonization in Asia; (2) launching initiatives for decarbonization and emission reductions in the sectors with high GHG emissions; and (3) promoting tangible projects.

Source:

[https://www.mofa.go.jp/ic/ch/pageite\\_000001\\_00614.html](https://www.mofa.go.jp/ic/ch/pageite_000001_00614.html)

### Indonesia signs 15.6 mln kilolitres biodiesel allocation for 2025

Indonesia Energy and Mineral Resources Minister signed a decree allocating 15.6 million kilolitres (KL) of biodiesel for 2025 distribution, while giving the industry until the end of next month to adapt to the higher level of the fuel in the mix. Indonesia, the world's largest exporter of palm oil, had planned to launch the mandatory requirement of 40% palm oil fuel in biodiesel on Jan. 1, up from 35% now.

Source:

<https://www.reuters.com/markets/commodities/indonesian-firms-get-1-12-months-implement-new-b40-biodiesel-mix-2025-01-03/>

## SPOTLIGHT SHIPPING

### \$3 Billion for U.S. Clean Port Projects

The U.S. Environmental Protection Agency selected 55 applicants across 27 states to receive nearly \$3 billion to support the deployment of zero-emission equipment and infrastructure. Selected projects cover a wide range of zero-emission port equipment, including over 1,500 units of cargo handling equipment, 1,000 drayage trucks, 10 locomotives and 20 vessels, as well as shore power systems, battery electric and hydrogen vehicle charging and fueling infrastructure, and solar power generation. Estimates of tailpipe reductions from this new equipment are estimated to be over 3 million metric tons of CO<sub>2</sub>,

12,000 short tons of NO<sub>x</sub> and 200 short tons of PM<sub>2.5</sub> in the first 10 years of operation.

Source:

<https://ngtnews.com/u-s-epa-chooses-55-applicants-for-nearly-3-billion-in-clean-port-funds>

## SPOTLIGHT AVIATION

### Progress on starting production of SAF from waste oils and other raw materials

Idemitsu has completed the Feasibility Study of its SAF (Sustainable Aviation Fuel) production project using HEFA (Hydroprocessed Esters and Fatty Acids) technology at its Tokuyama Complex, and has decided to move to the next phase, FEED (Front-End Engineering & Design). With the goal of establishing a domestic supply system of 500,000 kL per year by 2030, they aim to start producing 250,000 kL of SAF per year at the Tokuyama Complex in FY2028.

Source:

[https://www.idemitsu.com/jp/news/2024/240802\\_en.pdf](https://www.idemitsu.com/jp/news/2024/240802_en.pdf)

### First SAF Plant in Argentina

The Bahía Energía Group will invest \$200 million in the first Sustainable Aviation Fuel (SAF) plant in Argentina. The project will use corn as a feedstock and has three phases:

1. produce 150,000 cubic meters/yr of ethanol for domestic consumption,
2. produce 150,000 cubic meters/yr of SAF, and
3. produce 200,000 tons/yr of biomethanol and DDGS for animal feed.

Source:

<https://advancedbiofuelsusa.info/us-200-million-investment-bah-a-blanca-will-have-the-first-sustainable-fuel-plant-for-airplanes>

### SAF Production Plant Development

Avina Clean Hydrogen will invest \$820 million in the development of a sustainable aviation fuel production facility in Illinois, capable of producing 120 million gallons per year. The facility will take advantage of Southwest Illinois' existing rail and pipeline infrastructure, enabling efficient delivery of SAF to major airports in the Midwest, including Chicago O'Hare International Airport.

The plant will use KBR's alcohol-to-jet technology, which begins with a dehydration of the individual alcohols or their mixtures to a mixture of the corresponding olefins. Higher olefins are saturated to yield the corresponding paraffin, while a portion can be condensed into aromatics for blending with the final product.

Source:

<https://www.greencarcongress.com/2024/12/20241227-avina.html>

## SPOTLIGHT HEAVY DUTY VEHICLES

### Fuel Cell Vehicle Sets Record for Longest Distance Without Refueling

Accelera by Cummins has set a Guinness World Records title for the longest distance traveled by a hydrogen fuel cell electric heavy-duty truck without refueling. The H2Rescue truck, a Kenworth T370 prototype designed for emergency response missions, completed an 1,806-mile trip on a single fill in central California. The truck was equipped with an Accelera fuel cell and a 250-kW traction motor and consumed 168 kilograms of onboard hydrogen.

The Class 7 heavy-duty demonstration vehicle, weighing about 33,000 pounds, is the result of an collaboration between Accelera, the U.S. Department of Homeland Security, the U.S. Department of Energy and the U.S. Department of Defense. The truck offers several benefits for disaster relief sites and can power 20 to 25 Federal Emergency Management Agency trailers, support shelters or homes for up to 72 hours without refueling.

Source:

<https://ngtnews.com/accelera-hydrogen-fuel-cell-vehicle-sets-record-for-longest-distance-without-refueling>

## SPOTLIGHT (Public) Transport

### MOU for Electric Vehicles in Mexico

VinFast and the Durango Drivers' Union in Mexico signed a Memorandum of Understanding to purchase 3,000 VF 5 electric cars and 300 electric buses for public passenger transport Durango City, Mexico. Additionally, VinFast and the union will collaborate on installing charging infrastructure to meet the needs of both personal and public transport vehicles in the city.

Source:

<https://www.automotiveworld.com/news-releases/vinfast-and-the-durango-drivers-union-sign-strategic-mou-on-green-transition-of-public-transport-in-mexico/>

## AMF NEWS

### Ongoing AMF Tasks

The full list of current AMF projects includes:

- New Task: 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 & AMF Website

Link: [https://www.iea-](https://www.iea-amf.org/content/projects/ongoing_projects)

[amf.org/content/projects/ongoing\\_projects](https://www.iea-amf.org/content/projects/ongoing_projects)

### Task 66 Webinar Series

The central activity of Task 66: Recent Progress in SAF Research will be a series of thematic online workshops about recent research work on sustainable aviation fuels, with the goal to realize the potential of SAF and their emission reduction contribution to the net-zero target.

In 2025, the following topics are planned:

- 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
- Monitoring of SAF R&D, demonstration projects and production deployment
- Status and developments of engine technology in aircrafts using SAF

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

Link: [https://iea-amf.org/content/projects/map\\_projects/66](https://iea-amf.org/content/projects/map_projects/66)

## PUBLICATIONS

### US Federal Agencies Publish SAF Grand Challenge Progress Report

As part of the Biden-Harris Administration's Investing in America agenda, an interagency team led by the U.S. Department of Energy (DOE), U.S. Department of Agriculture (USDA), and the U.S. Department of Transportation's (DOT) Federal Aviation Administration (FAA) today released the Sustainable Aviation Fuel (SAF) Grand Challenge 2021-2024 Progress Report.

Source:

<https://www.energy.gov/eere/bioenergy/articles/federal-agencies-publish-sustainable-aviation-fuel-grand-challenge-progress>

## Arrival of Electric and Hybrid Vehicles in Brazil

The supply of battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and hybrid electric vehicles (HEVs) was analyzed for Brazil between 2021 and 2024. From the first quarter of 2021 to the first quarter of 2024, the market share of BEVs grew from 0.1% to 3.0%, the share of PHEVs grew from 0.4% to 2% and the share of HEVs grew from 0.4% to 1.3%. In 2023, the growth of these vehicles accelerated, with their sales reaching 5% of all vehicles in the first quarter of 2024. The average price of BEVs sold fell 46% between 2023 and 2024, largely due to the increased supply of compact and mid-size car segments.

Source:

<https://theicct.org/publication/evolucao-recente-do-mercado-brasileiro-de-veiculos-leves-a-chegada-de-eletricos-e-hibridos-2021-2024-dec24/>

## ASEAN Oil and Gas Updates 2024

ASEAN Oil and Gas Updates 2024 examines the current state and emerging trends in ASEAN's oil and gas industry. It provides key statistics and analyses the oil and natural gas situation in ASEAN, covering reserves, production, consumption, trade, infrastructure, policy trends, investments, and energy transition initiatives.

Source:

<https://aseanenergy.org/publications/asean-oil-and-gas-updates-2024/>

## Just sustainability transitions - From concept to practice

This report considers how justice is tackled in the policies which are currently in place to deliver the European Green Deal. It summarises the lessons learnt for policymakers seeking to achieve a fair green transition, by moving from the concept of justice to the practice of embedding fairness in the design and implementation of policies.

Source:

European Environment Agency (EEA) - Publications  
<https://www.eea.europa.eu/en/analysis/publications/just-sustainability-transitions>

Download:

<https://www.eea.europa.eu/en/analysis/publications/just-sustainability-transitions/just-sustainability-transitions-from-concept-to-practice/@@download/file>

## Annual EU greenhouse gas inventory 1990–2022 and inventory document 2024

The document published on 13 December 2024 represents part 1 of the first official inventory submission of the European Union (EU) for 2024 under the Paris Agreement and the United Nations Framework Convention on Climate Change

(UNFCCC) and follows the modalities, procedures and guidelines (MPGs) under the Enhanced Transparency Framework (ETF) of the Paris Agreement (according to Decisions 18/CMA.1 and 5/CMA.3).

Source:

European Environment Agency (EEA) - Publications  
<https://www.eea.europa.eu/en/analysis/publications/annual-european-union-greenhouse-gas-inventory>

Download:

[https://www.eea.europa.eu/en/analysis/publications/annual-european-union-greenhouse-gas-inventory/eu-nid-2024\\_f/@@download/file](https://www.eea.europa.eu/en/analysis/publications/annual-european-union-greenhouse-gas-inventory/eu-nid-2024_f/@@download/file)

## Trends and projections in Europe 2024

The EEA's annual report on Trends and Projections in Europe explores historical trends, most recent progress and projected future progress on climate change mitigation through reduced GHG emissions, renewable energy gains and improved energy efficiency. It builds upon data reported by the EU-27 Member States, five EEA member countries and nine Contracting Parties of the Energy Community.

Source:

European Environment Agency (EEA) - Publications  
<https://www.eea.europa.eu/en/analysis/publications/trends-and-projections-in-europe-2024>

Download:

<https://www.eea.europa.eu/en/analysis/publications/trends-and-projections-in-europe-2024/trends-and-projections-in-europe-2024/@@download/file>

## Third-generation biomass for bioplastics: a comprehensive review

Bio-based plastics, primarily polyhydroxyalkanoates (PHAs), offer a hopeful alternative to petroleum-derived plastics. Third-generation (3G; microalgae/cyanobacteria) biomass has gained significant importance due to its rapid biomass productivity and metabolic versatility. Microalgae can produce PHAs by utilizing CO<sub>2</sub> and wastewater, establishing them as highly promising and eco-friendly systems for bioplastic production.

Source:

[https://www.biofueljournal.com/issue\\_26351\\_29000.html](https://www.biofueljournal.com/issue_26351_29000.html)

Download:

[https://www.biofueljournal.com/article\\_210403\\_ecc283b458993ce388f39ea1f026ddc1.pdf](https://www.biofueljournal.com/article_210403_ecc283b458993ce388f39ea1f026ddc1.pdf)

## Methane emissions in the biogas and biomethane supply chains in the EU

The report summarizes the current knowledge on the state of methane emissions from biogas plants. It delves into modern methods to detect and quantify biomethane emissions as well as best practices to mitigate them. Based on recent initiatives and good examples, the report defines a methodology to

consider biomethane emissions within the greenhouse gas emissions assessment of biogas for CHP and biomethane pathways, consistent with the EU Renewable Energy Directive.

Source:

<https://op.europa.eu/en/publication-detail/-/publication/e3d8fbaa-b5de-11ef-acb1-01aa75ed71a1/language-en>

### Clean Energy Technology Observatory, Bioenergy in the European Union

The report provides a detailed examination of the bioenergy sector within the European Union (EU), highlighting its significance in the global context and its role in the transition towards a low-carbon economy. The report is an update of the CETO 2023 report. It offers insights into the development and status of various bioenergy technologies, funding landscapes, economic contributions, and employment trends within the EU. The report also contrasts the EU's bioenergy sector with that of other regions, particularly the US and China.

Source:

<https://op.europa.eu/en/publication-detail/-/publication/4f8d944f-a7c1-11ef-acb1-01aa75ed71a1/language-en>

### Clean Energy Technology Observatory, Advanced biofuels in the European Union

The report provides a detailed examination of the biofuel sector and advanced biofuel sector within the European Union (EU), focusing on its economic, environmental, and technological dimensions. The report is an update of the CETO 2023 report. The EU is highlighted as the central point of view, with specific references to EU Member States showcasing their roles in the sector. The report is essential for understanding the multifaceted role of advanced biofuels in the EU's strategy to reduce greenhouse gas emissions and enhance energy security.

Source:

<https://op.europa.eu/en/publication-detail/-/publication/f70a757a-a7bd-11ef-acb1-01aa75ed71a1/language-en>

### The 16th IEEJ Webinar for the world “IEEJ Outlook 2025”

On 22 November 2024 the Institute of Energy Economics Japan (IEEJ) implemented its 16th Webinar for the World in which it provided an outlook for the coming year. The webinar materials and recordings are now available online.

Source:

[https://eneken.ieej.or.jp/en/movie\\_detail.php?movie\\_info\\_\\_id=504](https://eneken.ieej.or.jp/en/movie_detail.php?movie_info__id=504)

### Sustainable Consumption Considering Planetary Boundaries

The concept of 'Planetary Boundaries' quantifies the limits on the Earth system. The report explores the question on how consumption patterns could look like which are globally transferable, compatible with German consumption levels and remain within planetary boundaries. The report examines this question based on average consumption patterns in Germany. It develops and outlines six exemplary consumption patterns as personas which are possible within planetary boundaries.

Source: UBA Deutschland

<https://www.umweltbundesamt.de/publikationen/limits-to-consumption>

Download:

[https://www.umweltbundesamt.de/sites/default/files/medien/11850/publikationen/165\\_2024\\_texte.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/11850/publikationen/165_2024_texte.pdf)

## EVENTS

### **Future of BioLNG: Europe 2025**

29 – 30 January, Amsterdam, Netherlands

<https://www.wplgroup.com/aci/event/future-bio-lng-europe/>

### **Latam Mobility Summit Tour**

20 February 2025, Monterrey, Mexico

7-8 May 2025, Sao Paulo, Brazil

4-5 June 2025, Medellin, Columbia

26-27 August 2025, Santiago, Chile

30 September - 1 October 2025, CDMX, Mexico

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

### **Clean Fuels Conference**

20-23 January 2025, San Diego, California, USA

<https://www.cleanfuelsconference.org/>

### **Lignofuels 2025**

11 -13 February 2025, Helsinki – Finland

<https://www.wplgroup.com/aci/event/lignocellulosic-fuel-conference-europe/>

### **Renewable Fuels Association National Ethanol Conference**

17-19 February, 2025, Nashville, Tennessee, USA

<https://www.nationalethanolconference.com/>

### **International Biomass Conference & Expo**

18-20 March 2025, Atlanta, Georgia, USA

<http://www.biomassconference.com>

### **The Work Truck Show & Green Truck Summit**

4-7 March 2025, Indianapolis, Indiana, USA

<https://www.worktruckweek.com/>

### **WCX SAE World Congress Experience**

8-10 April 2025, Detroit, Michigan, USA

<https://www.sae.org/highlights/wcx>

### **Canadian Hydrogen Convention**

22-24 April 2025, Edmonton, Canada

<https://www.hydrogenexpo.com/>

### **Advanced Clean Technology (ACT) Expo**

28 April - 1 May 2025, Anaheim, California, USA

<https://www.actexpo.com/>

### **The 7<sup>th</sup> International Electric Vehicle Technology Conference – EVTec 2025**

19-21 May, Pacifico Yokohama, Japan

<https://evtec.jsae.or.jp/2025/>

### **Annual Congress of the Society of Automotive Engineers of Japan (JSAE)**

21-23 May, Yokohama, Japan

<https://www.jsae.or.jp/2025haru/english/>

### **33<sup>rd</sup> European Biomass Conference & Exhibition**

9 – 12 June, Valencia, Spain

<https://www.eubce.com>

### **International Fuel Ethanol Workshop & Expo and Biodiesel Summit**

9-11 June 2025, Omaha, Nebraska, USA

<https://few.bbiconferences.com/ema>

### **Electric & Hybrid Vehicle Technology Expo**

6-9, October 2025, Detroit, Michigan, USA

<https://evtechexpo.com/>

### **RNG Conference**

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

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

## 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](http://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.

## CONTACT

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