

# ADVANCED MOTOR FUELS

## Technology Collaboration Programme

June 2023

### WHO WE ARE

Advanced Motor Fuels Technology Collaboration Programme (AMF TCP) is one of the actors putting transport on track to sustainability and reducing the impacts of transport on the environment. Established in 1984, AMF has a strong international network that serves to foster collaborative research, development, and deployment (RD&D) and to provide unbiased information on clean, energy-efficient, and sustainable fuels and related engine and vehicle technologies.

### OUR VISION

Advanced motor fuels, applicable to all modes of transport, significantly contribute to a sustainable society around the globe.

### OUR MISSION

The mission of AMF is to advance the understanding and appreciation of the potential of advanced motor fuels toward transport sustainability. We provide sound scientific information and technology assessments to facilitate informed and science-based decisions regarding advanced motor fuels at all levels of decision-making.

### HOW TO JOIN AMF

Participation in one of the International Energy Agency's technology collaboration programs, such as the AMF TCP, is based on mutual benefit, is based on mutual benefit to the program and to the interested newcomer.

Each contracting party is represented by a delegate and an alternate delegate. The respective [contact details](#) are listed on the AMF [website](#).

The Secretary will provide details on the AMF and invite newcomers to attend an Executive Committee (ExCo) meeting as observers. By attending or even hosting an ExCo meeting, interested newcomers will become familiar with our organization.

Please visit output products like the [AMF Annual Report](#), [Project Reports](#), and [Fuel Information](#) on the AMF [website](#), and follow the AMF on [LinkedIn](#) and [Twitter](#).

### OVERVIEW OF ACTIVITIES

AMF examines transport fuel issues in a systemic way, taking into account production, distribution, and end-use related aspects. AMF liaises with other IEA Technology Collaboration programmes (such as IEA Bioenergy and IEA Combustion) and works in close collaboration with important players within the field of AMF (for example, the International Transport Forum and the Methanol Institute). Because fuels, engines, and exhaust after-treatment systems must be considered as interactive systems, AMF's scope also covers propulsion systems that use advanced motor fuels.

### MOST RECENT PROJECTS (TASKS)

Work within AMF is carried out in individual projects (known as Tasks). Detailed information on each of the projects can be assessed on the AMF [website](#).

#### Task 28 Information Service and AMF Website

#### Task 60 The Progress of Advanced Marine Fuels

#### Task 61 Remote Emission Sensing

#### Task 62 Wear in Engines Using Alternative Fuels

#### Task 63 Sustainable Aviation Fuels

#### Task 64 E-fuels and End-use Perspectives

### CONTACT

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Technology Collaboration Programme on  
Advanced Motor Fuels



## PARTICIPANTS

Currently AMF has 16 contracting parties from 14 countries worldwide. Japan has designated three contracting parties.



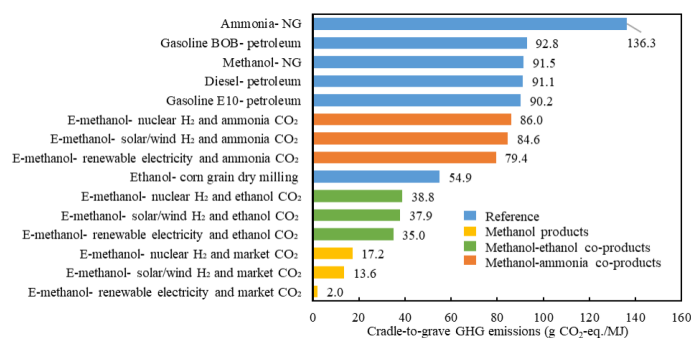
## PROJECT HIGHLIGHTS

### Task 63 – Sustainable Aviation Fuels

Main barriers for implementing sustainable aviation fuels (SAF) were confirmed — namely, sustainable feedstock limitations, comparably high production costs, and a lack of clear (international) regulations. Scaling-up SAF capacities requires huge investments and risk sharing among stakeholders. Offtake agreements are one possibility for airlines to support SAF producers while securing their SAF supply. The number of [offtake agreements](#) has increased sharply in recent years, and this trend is expected to continue.

### Task 64 – E-fuel and End-use Perspectives

Some electro-fuels, such as FT fuels or methanol, can be produced from high TRL or mature technologies. The key cost driver for electro-fuel production is the production cost of H<sub>2</sub> or syngas. LCA results show that using renewable electricity and hydrogen is key to having low-carbon e-fuels. Incentives are offered in various countries to promote the production of e-fuels or hydrogen. The research and development of SAF is pushed in different countries.



Source: Zang, G., Sun, P., Elgowainy, A., & Wang, M. (2021). Technoeconomic and life cycle analysis of synthetic methanol production from hydrogen and industrial byproduct CO<sub>2</sub>. *Environmental Science & Technology*, 55(8), 5248-5257.



## STRATEGIC WORK PLAN 2020–2024

Several fuel-related organizations operate internationally, but these focus solely on a specific fuel or group of fuels — for example, alcohols, natural gas, liquid petroleum gas, and synthetics. In addition, other organizations promote electro-mobility. In the field of transport fuels, AMF is the only internationally recognized, technology-neutral clearinghouse for fuels-related information. To learn more, please download the [Work Plan](#) from the AMF website.

### Fuels

- Performance evaluation (energy efficiency, GHG, air quality) of new fuels and technology platforms
- Focus on fuels substituting diesel (including substitution of marine fuels)
- (Pre) studies on emerging fuels (electrofuels, ammonia, SAF)

### Vehicles

- Real driving emissions, including deterioration of emission performance over distance
- Efficiency of heavy-duty vehicles (with possible spill-over toward non-road machinery)
- Range extender options for EVs

### System analysis

- Comparison of different energy carriers for transport applications (timeline, impact, cost)
- Assessment of drop-in types of fuels vs. fuels requiring new vehicles and technologies and new infrastructure

### Communication and dissemination

- Information on AMF publications on the AMF website
- Information on advanced motor fuels via AMF platforms and channels
- Topical workshops to exchange information and deepen understanding