



IEA-AMF:
Contributing to Solutions for
Alternative and Advanced
Transportation Fuels

International Energy Agency –
Advanced Motor Fuels Implementing Agreement

2013



What is IEA-AMF?

IEA-AMF is a multilateral technology initiative, set up within the International Energy Agency's Energy Technology Network. The IEA-AMF mission is to provide a fuel-neutral platform for international collaboration in R&D, deployment and dissemination of clean, energy efficient and sustainable fuels and related vehicle technology.

The Advanced Motor Fuels Implementing Agreement (AMF) is an activity of the International Energy Agency (IEA) which, itself, is linked to the Organization for Economic Co-Operation and Development (OECD), founded in 1961. The IEA is an intergovernmental organization which acts as energy policy advisor to 28 member countries in their effort to ensure reliable, affordable and clean energy for their citizens. Founded during the oil crisis of 1973-74, the IEA's initial role was to co-ordinate measures in times of oil supply emergencies. As energy markets have changed, so has the IEA. Its mandate has broadened to incorporate the "Three E's" of balanced energy policy making: energy security, economic development and environmental protection. The IEA conducts a broad program of energy research, data compilation, publications and public dissemination of the latest energy policy analysis and recommendations on good practices.



Visit to Oceanic Institute in Hawaii

Within the IEA, the Committee on Energy Research and Technology (CERT) co-ordinates and promotes the development, demonstration and deployment of technologies to meet challenges in the energy sector. The CERT has established four expert bodies: the Working Party on Fossil Fuels; the Working Party on Renewable Energy Technologies; the Working Party Energy End-Use Technologies and the Fusion Power Co-coordinating Committee. The Energy End Use Working Party (EUWP) is the focus for the IEA's extensive international network for RD&D of technologies to increase the efficiency of energy end use. The network comprises 14 "Implementing Agreements, also called "Technology Initiatives" on individual technologies, for cooperative research, development and demonstration in buildings, industry, transport and electricity network technologies. AMF is one of those implementing agreements (under "transport"). Starting in 1984 with five countries as members, AMF and growing to 16 member countries in 2013. They are listed below:

AMF Member Countries

Austria	Canada
China	Denmark
Finland	France
Germany	Italy
Israel	Japan
Korea	Spain
Sweden	Switzerland
Thailand	USA

Membership in IEA-AMF is not restricted to countries who are members of the IEA. In fact, The People's Republic of China and Thailand are members of IEA-AMF but not members of the IEA.



Visit to Bus Facility in Beijing

The original name of the IEA-AMF was “Alcohols and Alcohol Blends as Motor Fuels,” but as the scope of interests in substitute motor fuels expanded over the years, so did the activities in this group. Thus, in 1990 the name was changed to “Alternative Motor Fuels.” Before the end of the decade the name was changed again to the current name, “Advanced Motor Fuels,” clearly reflecting the continual expansion of the scope of interests in motor fuels.

The AMF is governed by an Executive Committee (ExCo) comprised of delegates from each member country. They manage the R&D work of the Committee in meetings that are held approximately every six months in member countries or in countries who are contemplating joining the AMF.

The activities of AMF relate to R&D, deployment and dissemination of advanced motor fuels. AMF looks at transport fuel issues in a systemic way, taking into account production, distribution and end-use related aspects. As fuels, engines and exhaust after-treatment systems have to be considered as interactive systems, the scope of AMF also covers propulsion systems (vehicles) using advanced motor fuels.

Within AMF, “Advanced Motor Fuels” have been defined as fuels fulfilling one or more of the following criteria:

- Low toxic emissions
- Improved life cycle efficiency
- Reduced greenhouse gas emissions
- Enabling fuels for new propulsion systems
- Fuels contributing to sustainability in transportation
- Fuels contributing to security of supply

How Does IEA-AMF Carry Out R&D?

The ExCo, which consists of the delegates representing the individual participating countries, has a very important role in directing the work of the Agreement and generating new activities. The delegates themselves come from a wide range of organizations including government agencies, universities, research institutes, and industry.

The work of the ExCo is carried out within individual projects called Annexes. Over the years, 46 Annexes have been initiated. A number of different fuels have been covered in these annexes including:

- Reformulated fuels (gasoline and diesel)
- Biofuels (ethanol, biodiesel etc.)
- Synthetic fuels (methanol, Fischer-Tropsch, DME etc.)
- Gaseous fuels (natural gas, biogas, LPG, hydrogen etc.)

Likewise, a number of different drive trains and emission control systems have been covered in the annexes including:

- Light duty spark-ignition engines
- Light and heavy duty compression ignition engines
- Hybrid power systems
- Emission control systems – catalysts, particulate traps, and eco-driving practices

The AMF mission is to become a leading international player in the promotion of international collaboration in R&D, deployment and dissemination of clean, energy efficient and sustainable fuels and related vehicle technology. It will continue to provide a fuel-neutral platform for co-operative R&D, deployment and dissemination, making use of the multifaceted expertise of its partners and networks, and provide a respected clearing-house for information facilitating the wide spread deployment of technologies for sustainable transport. This is our special strength, providing unbiased data and recommendations.

ExCo Meeting in Progress



The current objectives and goals of the AMF are:

- **Information & Membership**: Gather, evaluate and disseminate information on advanced motor fuels and act as a clearing-house on related information. This provides an easy-access platform for interested parties to join AMF as members.
- **Co-operative R&D, Deployment and Dissemination**: Create, maintain and make use of networks among partners involved in research, development, demonstration and deployment related to advanced motor fuels.
- **Markets and General Co-operation**: Contribute to the removal of technical and economic barriers and to provide solid data to decision makers..



Light-Hearted Moment in Austria

At AMF Executive Committee meetings the delegates hear new proposals for annexes and progress reports for existing annexes. Annexes are created through both top-down and bottom-up processes. The ExCo initiates pre-studies as well as actual Annexes. A minimum of two countries is required to support any annex proposal as an annex. One annex deals with information dissemination and the AMF web site maintenance and is supported from the annual membership dues, and thusly is supported by all members of the ExCo.

Annex final reports can be held confidential by the supporting countries for a period to be determined by the supporting countries. Many annex reports go on to be distributed widely without any restrictions after the period of confidentiality has passed.

Role of IEA-AMF Member Nations in Providing Solutions to Transportation Fuels' Challenges:

The fifteen countries that are members (currently) of the IEA Advanced Motor Fuels Agreement account for over 50% of total global fuel consumption. Seven of the fifteen countries are in the top ten rankings for gross domestic product. Thus, disruptions and shortages in fuel supplies will have serious consequences on the AMF member countries. This also suggests that the AMF member countries justifiably have the greatest obligation to find solutions to the challenge of dwindling petroleum supplies and rising prices. It is in this backdrop of world conditions – economic health, energy use, greenhouse gases and emissions that the IEA-AMF operates to help solve the challenges facing the world in the present and future.

Current Annexes

Current annexes include subjects ranging from biomass-derived fuels, measurement technologies for characterizing and measuring emissions from varying fuels, fuels and technologies for buses, environmental impacts and enhanced fuels efficiencies and emissions reductions. Interested persons can find descriptions of all annexes of the past as well as current annexes at the IEA-AMF web site - www.iea-amf.org There, you can also see and download many reports of findings from annexes.

How to Join the IEA-AMF

Participation in the multilateral technology initiative (IEA-AMF Implementing Agreement) is based on mutual benefit to the **Implementing Agreement** and the **Interested Newcomer**. Below is an outline of the steps involved.

Interested Newcomer (IN)

Let's Talk:

The IN contacts the IA

The IN provides information on what contribution (expertise) it can bring to the IA

Advanced Motor Fuels IA

The IA provides information on current activities and member contributions

The IN and the IA agree to go to the next step

Let's Meet:

The IN attends an IA executive Committee meeting

The IN is interested in becoming a signatory to the IA

The IA invites IN to attend and Executive Committee (Board of Directors) Meeting

The IA is interested in having IN become a signatory

Let's Agree:

The IA Executive Committee and the IN discuss the terms and conditions of participation

The current IA members vote to invite the IN

Let's Formalize:

The IA sends a letter of invitation to the IN outlining the agreed terms and conditions of participation

The IEA sends a signature page to IN

The IN sends a letter of acceptance to the IEA Executive Director

Let's Begin!