

IEA-Advanced Motor Fuels ANNUAL REPORT 2024

Task 66



Task 66: Recent progress in SAF research

Project Duration	October 2024–September 2027
Participants Task sharing Cost sharing	Austria, Brazil, China, Denmark, Germany, Spain, Switzerland, USA
Total Budget	290,000€ (314,542\$)
Task Manager	Doris Matschegg BEST (Bioenergy and Sustainable Technologies GmbH) Email: Doris.matschegg@best-research.eu
Website	https://iea-amf.org/content/projects/map_projects/66

Purpose, Objectives and Key Question

Sustainable aviation fuels (SAF) are being promoted as an important way to reduce greenhouse gas (GHG) emissions from the aviation sector, which is responsible for about 2% of global GHG emissions, 14.4% of EU transport emissions, and 11% of US transport emissions. However, there is a gap between supply and demand of SAF as such fuels currently represent only about 0.1% of global aviation fuel consumption (about 0.27 million t in 2022). IEA's 2023 update to the Net Zero by 2050 Roadmap shows the need for a significant ramp-up of biofuels, hydrogen, and hydrogen-based fuels in the aviation sector to almost 15% of energy consumed in 2030 and 80% in 2050. In October 2022, member states of the International Civil Aviation Organization (ICAO) agreed to a long-term aspirational goal (LTAG) of net-zero carbon dioxide (CO₂) emissions from aviation by 2050, with a simultaneous increase in traffic volume of about 3% per year. To achieve this ambitious target and to fill the gap between supply and demand, further research on SAF production as well as on end-use aspects of SAF utilization needs to be conducted. Task 66 will organize information exchange on recent research on sustainable aviation fuels between researchers and other stakeholders in the field of aviation.

The purpose of the SAF follow-up Task is to facilitate information exchange between the participating countries on recent SAF research through a series of online workshops. Topics for the online workshops will be jointly defined during scoping meeting(s) and will reflect the R&D interests and ongoing projects of the participants. Conducting these workshops will also serve to enlarge the existing AMF network of SAF stakeholders by including further stakeholders, to be identified during the initial stage of the proposed Task. This is important to ensure that the voice of stakeholders (industry, academia, policy makers, working groups, and initiatives) will be heard, hereby increasing the relevance of the workshop topics within this Task for stakeholders.

Three key areas of interest have been identified: SAF production, SAF utilization, and policy recommendations. A number of key workshop topics within these areas of interest have already been identified in Task 63 and during the preparation of the Task description. Prioritization, sequence, and details of the workshops will be further elaborated upon during scoping meetings during the Task implementation. For each topic at least one partner takes the lead for the workshop supported by the Task Manager.

Activities

The activities of the SAF follow-up Task will be a series of in-depth discussion in form of thematic workshops about recent research work on sustainable aviation fuels to realize the potential of SAF and their emission reduction contribution to the net-zero target. Stakeholders in the field of aviation (industry, academia, policy makers, international organizations, finance sector), which have been identified during Task 63 (as well as additional stakeholders), will be invited to participate in this information exchange.

Planned activities within this Task are listed below:

- Identification of additional stakeholders in the field of aviation (industry, academia, policy makers, international organizations, finance sector). All Task participants will contribute.
- Organization of scoping meetings with Task participants to further process already identified main barriers for market uptake and discussion on additional barriers and research needs as input for the online workshops. The topics for the online workshops will be agreed on during annual scoping meetings. The Task Manager will organize the first scoping meeting as part of the kick-off meeting. During the scoping meeting the Task participants fix the workshop topics and their sequence for the first year. The Task Manager will propose a guideline for the workshop structure and a documentation template in the first scoping meeting.
- Definition and publication of the outline of the workshop series on the Task website, based on input from Task participants and stakeholders during the scoping meetings. In order to facilitate communication and ensure that all interested parties are kept informed of upcoming events, an option will be made available on the website to subscribe to an email list. This will allow users to receive notifications of workshop announcements. The Task Manager will be in charge of the Task website.
- Organization of 10 online workshops (2 hours each). Central communication will be performed by the Task Manager based on information from Task participants. Workshop topics will be distributed among Task participants and they will act as Workshop Leaders.
 - Invitation of relevant stakeholders regarding the topic of discussion (Task participants)
 - Provision of information material to the respective topic prior to the online workshops (prepared by Workshop Leader, publication on website by Task Manager)
 - In-depth discussion on the respective topic during the workshop. If necessary, the same topic can be discussed in more than one workshop (Task participants and stakeholders)
 - Summary Information Sheets will be provided on the Task Website after the workshops, creating a central point of knowledge, on main findings, key messages, policy recommendations (if applicable), and further research needs for upcoming workshops (topics of stakeholders can be integrated in the workshop outline) (Prepared jointly by the Task Manager and the Workshop leader)
- Development of national recommendations (Task participants for their own countries, not obligatory)
- Documentation of the information gathered during the discussions at each online workshop in brief information sheets (Workshop Leader together with Task Manager)
- Compilation of a final report composed of elements of the information and summary sheets of each workshop, highlighting the most relevant findings, and creation of a key messages document (Task Manager, input from all)

Key Findings

Due to the early stage of Task 66, no key findings have yet been identified. However, the Task Participants agreed on the topics for the first online workshops during the Scoping Meeting.

- Q1 2025: Enable the use of drop-in unblended SAF and SAF blends up to 100%
- Q2 2025: Identification of production process parameters and desirable end-use properties, relevant to mixture preparation, combustion, stability and emission formation through experiments and simulations (take off, cruise etc.)
- Q3 2025: Monitoring of SAF R&D, demonstration projects and production deployment
- Q4 2025: Status and developments of engine technology in aircrafts using SAF
- Q1 2026: Recommendations of new policy measures to further promote SAF production and utilization

Main Conclusions

Not yet applicable

Publications

Not yet applicable