

ALLIANCE FOR ZERO-EMISSION AVIATION

TERMS OF REFERENCE

1. BACKGROUND

The civil aeronautical industry is one of Europe's leading high-technology sectors. In 2020, it employed about 400 000 high-skilled people across Europe and generated 130 billion Euros in revenues¹. Commercial aircraft "made in Europe" made up 65% of worldwide deliveries in 2021²

The aeronautical industry provides transport solutions that respond to the need for individual and collective mobility by providing intra-EU and international connectivity. They underpin economic growth, jobs, trade and exchanges between cultures³. These solutions are easily adaptable to changing needs and rely on infrastructure paid for a larger part by the industry itself⁴.

Commercial aviation has seen continuous technological advances that have made flying safer, more comfortable, more efficient and more accessible, and European industry has been at the forefront of these developments. Europeans have come to rely on air travel for business, leisure or for visiting friends or relatives.

Today, aviation is facing a new challenge: climate change. With aviation accounting for 2-3% of global CO₂ emissions (at the EU level: 3.6%), it has become the second biggest source of transport greenhouse gas emissions after road transport. Despite the COVID-19 crisis, international aviation emissions could rise by up to 150% by 2040 compared to 2020. Therefore, to continue to provide essential national and international connectivity, the aviation sector must mitigate its negative effects on the climate. Speeding up the take-up of renewable energy and diminishing the sector's reliance on fossil fuels will also decrease dependence on Russian fossil fuels.⁵

A number of actions are already being taken to mitigate aviation's effect on climate change. These include aircraft efficiency improvements, flight routings⁶, promoting the uptake of sustainable aviation fuels⁷ and emission offset schemes, such as the EU ETS⁸ and CORSIA⁹. While these will substantially mitigate CO₂ emissions, to become climate-neutral aviation will also have to rely on new aircraft designs. Amongst those innovative designs, aircraft powered by electricity or hydrogen, such as those developed

¹ ASD "2020 Facts and Figures", https://www.asd-europe.org/sites/default/files/atoms/files/ASD_FactsFigures_2020.pdf

² Calculation based on manufacturers' annual reports

³ See also Commission Communication "An Aviation Strategy for Europe", COM/2015/0598, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=COM:2015:598:FIN>

⁴ 'European governments provide around €50 billion per year in State aid to rail, compared with around €0.5 billion to aviation for public service obligation routes', ATAG Report "Waypoint 2050", p 38

⁵ https://ec.europa.eu/commission/presscorner/detail/en/ip_22_3131

⁶ <https://www.eurocontrol.int/environment>

⁷ Including by the Renewable and Low-Carbon Fuels Value Chain Industrial Alliance, https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/alternative-fuels-sustainable-mobility-europe/renewable-and-low-carbon-fuels-value-chain-industrial-alliance_en

⁸ https://ec.europa.eu/clima/eu-action/european-green-deal/delivering-european-green-deal/aviation-and-eu-ets_en

⁹ <https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx>

and tested under the EU's Horizon Europe research programme and its precursors, will not only bring a substantial contribution to the decarbonisation of European aviation by 2050 but will also contribute to its overall climate neutrality. Indeed, those technologies bring solutions that not only reduce to zero actual carbon emissions by the aircraft but may also contribute to reducing non-CO₂ emissions (soot particles, SO₂, NO_x and water vapour), globally responsible for a warming effect on the climate¹⁰. They therefore constitute an important path towards true zero emission aviation provided that electricity and hydrogen are produced from zero carbon sources.

The European aviation industry is ready to tackle the climate challenge¹¹. In particular, the aircraft manufacturing industry has expressed the ambition to transform this challenge into an opportunity by becoming the global leader in electric and hydrogen-powered aircraft. The market potential of such electric and hydrogen-powered aircraft has been estimated at € 5000 billion¹².

In contrast to previous innovation cycles, electric and hydrogen-powered aircraft will require adaptations from almost all actors in the air transport system, including energy suppliers, regulators and certification authorities, overhaul and maintenance companies, as well as airports, air traffic management, airlines and passengers. These actors will need to prepare for the advent of electric and hydrogen powered aircraft if the transition to aviation's climate neutrality is to succeed.

Similarly, this transition will also require an adaptation of the skill sets throughout the air transport system. Up-skilling and re-skilling will therefore be a priority for the ecosystem¹³.

2. PURPOSE

The purpose of the Alliance is to prepare the aviation ecosystem so that electric and hydrogen-powered aircraft can enter into service as soon as possible, as outlined in the Destination 2050 Roadmap. The Alliance should facilitate the leveraging of the necessary investments and development of leading edge technologies in this field under aviation research programmes (especially the Clean Aviation and SESAR3 Joint Undertakings), which will contribute to Europe's 2050 climate neutrality target in the framework of the European Green Deal. The Alliance will contribute to achieving the objectives reaffirmed by the Toulouse Declaration on future sustainability and decarbonisation of aviation¹⁴.

The Alliance calls on interested stakeholders in all parts of the air transport system, research and technology organisations and networks, standardisation organisations, public and private investors, NGOs, trade unions, national and regional authorities, etc. to join forces to identify barriers to the entry into service of electric and hydrogen-powered aircraft, make recommendations on how to address them, promote the necessary investments and maximise synergies across the ecosystem.

The Alliance will comply with all applicable EU and national regulations, including EU competition rules, in particular Article 101 TFEU, in both its setting-up and its activities.

¹⁰ See SWD(2020) 277, Updated analysis of the non-CO₂ climate impacts of aviation and potential policy measures pursuant to the EU Emissions Trading System Directive Article 30(4)

¹¹ See the analysis "Destination 2050 – A route to net zero European aviation" and industry's commitment, <https://www.destination2050.eu/>

¹² The Clean Aviation Partnership's Strategic Research and Innovation Agenda, <https://clean-aviation.eu/clean-aviation/strategic-rationale-for-clean-aviation/strategic-research-and-innovation-agenda-sria>

¹³ See the Pact for Skills Large Scale Partnership on Aerospace and Defence, <https://ec.europa.eu/social/PactforSkills>

¹⁴ https://presidence-francaise.consilium.europa.eu/media/2hkh2v33/declaration-de-toulouse-pfue-ang_fr.pdf

3. TASKS

The tasks of the Alliance are:

A. Analysis and Planning:

- to identify the challenges of the entry into service of electric and hydrogen-powered aircraft. The analysis will cover aspects such as access to renewable energy, readiness of airport infrastructures, standardisation, certification, regulatory requirements, skill sets needed and the implications for air traffic management and for business models as well as for the air transport system as a whole,
- to prioritise the challenges and establish a roadmap, including milestones, for the introduction of hydrogen and electric aircraft, taking into account where the Alliance can best add value.

B. Investments and synergies:

- to foster new collaboration and partnership across the Alliance's membership, including SMEs, reinforcing the ecosystem and bringing about new investment opportunities,
- to coordinate efforts with related European initiatives, in particular with the Clean Aviation Joint Undertaking, the Advisory Council for Aviation Research and Innovation in Europe (ACARE), the SESAR 3 Joint Undertaking, the Clean Hydrogen Alliance and the Renewable and Low-Carbon Fuels Value Chain Industrial Alliance,
- to encourage partnerships between prospective project owners and investors,
- to identify and assess existing relevant public and private financing opportunities as well as to determine the suitability of additional instruments (in particular in relation to cross-border projects, including possible Important Projects of Common European Interest) and draw conclusions on their suitability.

C. Recommendations and Outreach:

- to identify policy, regulatory and standardisation needs,
- to consider how to promote the introduction of electric and hydrogen-powered aircraft globally,
- to identify and address existing and future labour shortages and skills shortages and gaps, in cooperation with the Pact for Skills Large Scale Partnership on Aerospace and Defence¹⁵,
- to inform the broader public on the Alliance and the potential for zero-emission flight.

This list of tasks may be adapted according to the needs identified during the work of the Alliance in order to best achieve its objectives.

In addition to the above-mentioned tasks, the Commission may consult the Alliance on other matters related to the purpose of the Alliance.

4. DELIVERABLES

The objectives of the Alliance will be achieved through the following possible deliverables:

¹⁵ The Pact for Skills Large Scale Partnership on Aerospace and Defence through its Up-Skilling/Re-skilling Programmes will work to develop and implement solutions allowing to up-skill and re-skill around 200,000 employees (30% of current workforce) in the EU by 2026.

A. Analysis and Planning Reports:

- Target scenario(s) for the entry into service and commercial operation of electric and hydrogen-powered aircraft in the European air transport system, including target dates.
- Gap analyses to identify the areas where further action is required, established in consultation with relevant initiatives such as the Clean Aviation Joint Undertaking and the SESAR 3 Joint Undertaking. These gap analyses should also cover the quality of jobs and the skills dimension.
- Roadmap(s), including milestones, describing the work to be undertaken to facilitate the entry into service of electric and hydrogen-powered aircraft and their interaction with air transport subsystems such as airports, energy providers, air traffic management

B. Investments and synergies:

- Identification of financing gaps, and opportunities;
- Pipeline of projects contributing to the objectives of the Alliance;
- Information and match-making efforts to bring together project owners and investors.

C. Recommendations and Outreach:

- Recommendations for actions, which may include policy or legislative actions, including at international level.
- Communication material and campaigns to promote zero-emission aviation and the potential for zero-emission flight.

This list of deliverables may be adapted in the course of the work of the Alliance.

The roadmap and recommendations will be updated as appropriate to take into account the progress towards the objectives of the Alliance.

5. MEMBERSHIP ELIGIBILITY CRITERIA

The following membership eligibility criteria shall apply:

1. Membership of the Alliance is intended for legal entities (“Member Organisations”). Membership will not be open to individuals appointed in a personal capacity.
2. The Alliance is open to all public and private entities with activities relevant to the introduction and take-up of electric and hydrogen-powered aircraft, including associations.
3. An organisation’s membership of the Alliance will be conditional on the signature of the Alliance’s Declaration. The list of signatories to the Declaration will be published and kept updated regularly.
4. Applicants shall provide all relevant information necessary for the assessment of fulfilment of the eligibility criteria to the European Commission, including how they intend to contribute concretely to its objectives outlined under *Chapter 2 - Purpose* above and notably the deployment of electric and hydrogen-powered aircraft, and what their ongoing or concretely envisaged activities are to this end.
5. In the event of a change during the membership which might put into question the fulfilment of the eligibility criteria, the relevant legal entity shall inform the European Commission sufficiently in advance, which shall assess whether these eligibility criteria and conditions continue to be met and shall address the potential impact on the organisation’s membership of the Alliance.

6. Before joining the Alliance applicants shall provide a written commitment that they have no conflict of interest¹⁶ whatsoever with the Alliance's objectives or with specific objectives of the working groups to which it participates.
7. Member Organisations who no longer act in accordance with the principles set forth in the Alliance Declaration, or are no longer capable of doing so, upon request of the Commission, shall no longer be invited to participate in any meetings of the Alliance and may be replaced for the remainder of their term of office.
8. Without prejudice to membership, the Commission, including upon proposal of the Steering Committee, may restrict discussions related to certain essential strategic tasks affecting security interests of the Union to Member Organisations not subject to control by a third country, acting either directly or by way of measures addressed to a third-country entity.

6. GOVERNANCE

General Assembly

The European Commission will support the organisation of a General Assembly of the members of the Alliance. The General Assembly will meet at least twice per year, to facilitate cooperation and engagement of all stakeholders and maintain the dialogue with all Member Organisations.

The General Assembly of the Alliance will be made up of high-level representatives of every Member Organisation.

The European Commission may invite Member States representatives to participate in the General Assembly of the Alliance.

Steering Committee

The Steering Committee is composed of a balanced group of representatives of Member Organisations not subject to control by a third country, acting either directly or by way of measures addressed to a third country entity, including SMEs.

Members of the Steering Committee are appointed by the European Commission on the basis of Member Organisations' proposals. A representative of the Governing Board of the Clean Aviation Joint Undertaking and the Chairs of the working groups will be members of the Steering Committee. The European Commission will act as Chair of the Steering Committee. The Steering Committee elects two co-chairpersons for a two-year term.

The Steering Committee prepares the General Assemblies, ensures consistency and integration of the work of the different working groups and supports the European Commission in facilitating and monitoring the work of the Alliance. It coordinates the work of the different Working Groups. Based on their inputs, it prepares and maintains a roadmap and associated milestones towards the introduction of electric and hydrogen-powered aircraft and, if necessary, adapts the tasks of the Alliance to ensure their alignment with this. It plans the work of the Alliance, monitors its achievements and proposes corrective actions. It validates the deliverables before publication.

¹⁶ This involves any actual, potential and perceived conflict of interest.

The Steering Committee may adopt opinions, recommendations or reports. When adopting opinions, recommendations or reports, the Steering Committee shall do so by consensus. In the event of a vote, the outcome of the vote shall be decided by simple majority of the members. Members who have voted against shall have the right to have a document summarising the reasons for their position annexed to the opinions, recommendations or reports.

Working Groups

The European Commission may establish working groups as appropriate to conduct the operational work of the Alliance. As a priority, it shall consider the establishment of working groups addressing one or more of the following topics:

- Airport Infrastructure supporting the operations of electric and hydrogen powered aircraft,
- Renewable energy requirements and supply,
- Certification, standards and regulation,
- Investment needs,
- Operations of electric and hydrogen-powered aircraft,
- Business cases of airlines, airports, aircraft manufacturers, energy providers,
- Skills,
- Financing (private investments as well as funding through the EU and national programmes),
- Outreach and International partnerships.

Member Organisations may apply for participation in the working groups. The Commission shall nominate the organisations participating in the working groups on the basis of their activities and expertise in relation to the working groups' area of work. Member Organisations representative(s) shall have the appropriate competence.

Each working group shall elect a Chair and a Vice Chair from among the representatives of the Member organisations not subject to control by a third country, acting either directly or by way of measures addressed to a third country entity.

The working groups may adopt opinions, recommendations or reports. When adopting opinions, recommendations or reports, the working groups shall do so by consensus. In the event of a vote, the outcome of the vote shall be decided by simple majority of the members. Members who have voted against shall have the right to have a document summarising the reasons for their position annexed to the opinions, recommendations or reports.

Observers and their representatives may be permitted by the Chair, with the agreement of the Commission, to take part in the discussions of a working group and provide expertise. However, they shall not have voting rights and shall not participate in the formulation of recommendations or advice of the group.

The Commission reserves the right to act as an observer to all working groups of the Alliance.

Member States representatives are invited to participate in the work of the Alliance in relevant working groups. In addition, the Commission may establish a State Representative Group to create an interface with national and regional authorities and to provide advice and linkage to relevant national and regional initiatives.

Rules of Procedure

The Steering Committee shall adopt its rules of procedure by simple majority of its members.

7. PROTECTION OF PERSONAL DATA

The European Commission, DG DEFIS will publish on the Register a privacy statement providing information about the processing and the protection of personal data.

The European Commission is committed to protect personal data and to respect privacy. The European Commission collects and further processes personal data pursuant to Regulation (EU) 2018/1725 of the European Parliament and of the Council of 23 October 2018 on the protection of natural persons with regard to the processing of personal data by the Union institutions, bodies, offices and agencies and on the free movement of such data.