



COP26 Policy Brief: Innovating Electric Aircraft for Greener Global Transport

Net-Zero aviation to take flight by bringing together international research to transform the aviation industry.

KEY POLICY RECOMMENDATION:

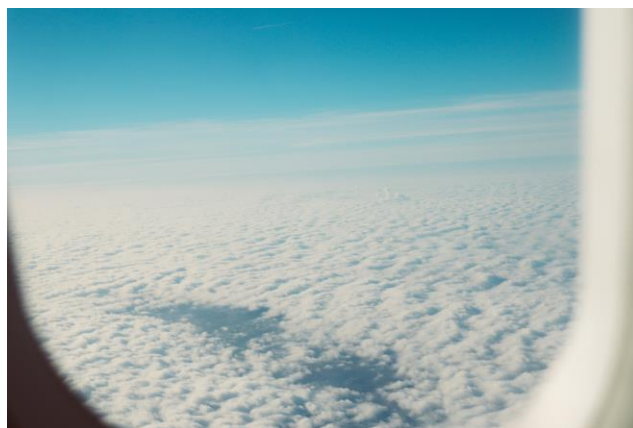
Prioritize Net-Zero Aviation cooperation on a global level, between different sectors of the aviation industry – academia, industry, regulatory bodies and policymakers – to identify and target critical challenges at pace and in a coordinated way, to ensure that innovations across the sector are compatible.

Background

Conventional aviation, relying on fossil fuels for power, is responsible for 12% of carbon dioxide emissions from all transport sources. The negative environmental impact is therefore considerable, making the development of alternative ways to power flight an essential research area. Hybrid and 'all electric' aircraft are seen as the most promising solution to date, as generating, distributing and utilising electric power on-board not only has a greatly reduced environmental impact, but also improves efficiency and performance. A move towards aircraft electrification could therefore be critical in order to meet climate objectives – and there is a clear urgency to do so.

Research at Nottingham

Solutions for Aircraft Electrification Leadership (SAEL), a world class partnership of engineers and researchers, seeks to address this challenge by creating an open technology framework to coordinate and integrate research, innovations and standards to bring sustainable aviation closer. SAEL has defined a path to lead the shift from conventional to green aviation. Some of the objectives have already been met through three workshops since 2019, which brought together over 100 world leaders in aerospace from academia, industry and regulation. SAEL will also set up project partnerships and create joint international R&D projects to accelerate development of the critical technology solutions required. The best-in-class R&D solutions will be translated into the SAEL case scenario which is to design and fly an open-source large passenger hybrid electric airplane. Stakeholders will be linked to their needs, their needs to their critical challenges, and each challenge to the required technology solutions. To assist this, the framework establishes the critical paths to sustainable aviation, and through a traffic light approach identifies the research or regulatory priorities that need to be resolved urgently to make green flight a reality.



Implications for Climate Change

Reducing greenhouse gas emissions from aviation means confronting a series of technological challenges - and doing so at pace, because the clock is ticking. SAEL aims to streamline the journey to greener aviation, supporting Europe's vision for aviation, Flightpath 2050, which aims to reduce carbon dioxide emissions by 75%, and nitrogen oxide (NOx) emissions by 90% per passenger kilometre by 2050. With funding and expertise directed to the right place at the right time, complex challenges can be addressed before it's too late for the sector to adapt.

Further Reading

Read the [full blog](#)

Visit the [SAEL project page](#). Visit the [Climateexp0 page](#). Read more about SAEL [here](#).

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