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Jet Zero Council

The Jet Zero Council (JZC) is a partnership between industry and government to bring together ministers and chief executive officer-level stakeholders, with the aim of delivering zero-emission transatlantic flight within a generation, driving the ambitious delivery of new technologies and innovative ways to cut aviation emissions.

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The Jet Zero Council (JZC) will be the catalyst for zero emission passenger flight across the Atlantic. To achieve this, it will focus on developing UK capabilities to deliver both net zero and zero emission technologies by:

- developing and industrialising zero emission aviation and aerospace technologies
- establishing UK production facilities for sustainable aviation fuels (SAF) and commercialising the industry by driving down production costs
- developing a coordinated approach to the policy and regulatory framework needed to deliver net zero aviation by 2050

The objectives of the JZC are to:

- provide ministerial and senior industry leadership on efforts to deliver UK capabilities for net zero aviation
- identify and optimise the strategic, economic and international benefits of developing these industries in the UK, and overcome the barriers industry face in achieving these goals
- accelerate the design, manufacture, testing, certification, infrastructure and commercial operation of zero emission aircraft and aviation systems in the UK through sustained investment in applied research and development (R&D) and fostering greater collaboration across sectors
- accelerate the delivery of SAF by supporting the investment in first-of-a-kind SAF plants, supporting research and development of new pathways and driving down production costs through upscaling and innovation
- support grassroots innovation in these areas and make the UK the best place in the world to develop new aviation technology

- challenge existing approaches by involving disruptors and innovators in the dialogue

Chairs

- Rt Hon Grant Shapps MP, Transport Secretary
- Rt Hon Kwasi Kwarteng MP, Business Secretary

CEO

Emma Gilthorpe, Chief Operating Officer, Heathrow Airport

Members

Members are:

- Rachel Maclean MP, Parliamentary Under Secretary of State for Transport
- Robert Courts MP, Parliamentary Under Secretary of State for Transport
- Paul Scully MP, Parliamentary Under Secretary of State for Business, Energy and Industrial Strategy
- Andrew Griffith MP, UK Net Zero Business Champion
- Dr Alicia Greated, Chief Executive Officer, Knowledge Transfer Network
- Anna Mascolo, President of Global Aviation, Shell
- Charlie Cornish, Group Chief Executive, Manchester Airports Group
- Dom Hallas, Executive Director, The Coalition for a Digital Economy
- Gary Elliott, Chief Executive Officer, Aerospace Technology Institute (and Jet Zero Council Zero Emission Aircraft Delivery Group Chair)
- Professor Iain Gray, Director of Aerospace, Cranfield University
- Jacqueline de Rojas CBE, President, techUK
- Baroness Brown Julia King DBE FREng FRS, Crossbench Member of the House of Lords (and Jet Zero Council Adviser)
- Dr Jennifer Holmgren, Chief Executive Officer, LanzaTech
- Johan Lundgren, Chief Executive Officer, easyJet
- John Holland-Kaye, Chief Executive Officer, Heathrow Airport
- Jonathon Counsell, Group Head of Sustainability, International Airlines Group (and Jet Zero Council Sustainable Aviation Fuels Delivery Group Chair)
- Jonathan Hinkles, Chief Executive, LoganAir
- Julie Kitcher, Executive Vice President Communications and Corporate Affairs, Airbus
- Kyle Martin, Vice President, European Affairs, General Aviation Manufacturers Association
- Malcolm Sutherland FRAeS, Accountable Manager, TUI Airways
- Sir Mike Wigston KCB CBE ADC, Air Chief Marshal, Royal Air Force
- Neville Hargreaves, Vice President, Waste to Fuels, Velocys
- Nina Skorupska CBE, Chief Executive, The Association for Renewable Energy and Clean Technology
- Paul Stein, Chief Technology Officer, Rolls-Royce
- Professor Peter Littlewood, Executive Chairman, The Faraday Institution

- Peter Mather, UK Head of Country and Senior Vice President for Europe, BP
- Richard Moriarty, Chief Executive Officer, Civil Aviation Authority
- Russ Dunn, Chief Technology Officer and Head of Strategy, GKN Aerospace
- Sean Doyle, Chief Executive Officer, British Airways
- Shai Weiss, Chief Executive Officer, Virgin Atlantic
- Simon Crabtree, Investment Manager, Mercia Asset Management
- Tim Johnson, Director, Aviation Environment Federation
- Tony Wood, Chief Executive, Meggitt and ADS President
- Trevor Woods, Independent Consultant
- Val Miftakhov, Chief Executive Officer, ZeroAvia

Delivery Groups

To accelerate progress on the objectives of the JZC, we have established focused Delivery Groups. These reflect the priorities of the JZC and may change over time as policy evolves. The current Delivery Groups are:

Sustainable Aviation Fuels (SAF)

The SAF Delivery Group, chaired by Jonathon Counsell (JAG), provides advice on how government and industry can work together to establish UK production facilities and accelerate the delivery of the fuel to market. It is currently focusing on 4 specific areas:

- development of a SAF mandate
- commercialisation of SAF
- technologies and feedstocks required for SAF production
- supply of SAF at UK airports for COP26

For any enquiries or to request meeting minutes, contact KTN, the SAF Delivery Group secretariat, at jzcsafdg@ktn-uk.org.

Jet Zero Council: Sustainable Aviation Fuels Delivery Group terms of reference

(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/997394/jet-zero-council-saf-delivery-group-terms-of-reference.pdf) (PDF, 41.2KB, 3 pages)

Zero Emission Flight

Work to deliver zero-carbon emission flight is led by the Aerospace Technology Institute (ATI), and its CEO Gary Elliott, who developed the UK's Aerospace Technology Strategy 'Accelerating Ambition' (<https://www.ati.org.uk/publications-tools/publications/>).

The strategy's objective is to maintain UK competitive advantage in aerospace manufacturing as the sector accelerates environmental performance of aircraft, while developing potentially transformative low and zero-carbon emission technologies.

An early focus is the ATI's FlyZero project – an in-depth £15 million study into the potential for commercial aircraft that do not emit carbon emissions by 2030, funded by government and led by Chris Gear, FlyZero Project Director. It will set out detailed plans for how the UK aerospace sector might best contribute to zero-carbon emission aircraft.

The intensive 12-month strategic research programme is bringing experts together from across the UK to focus efforts on finding the best path towards zero emissions flight.

The FlyZero team is conducting a detailed study of the design challenges, manufacturing demands, operational requirements and market opportunity of potential zero-carbon emission aircraft concepts.

FlyZero will deliver:

- an assessment of the potential market, economic and environmental impact for a zero-carbon emission commercial aircraft by 2030
- a preliminary design for a zero-carbon emission commercial aircraft to maximise environmental impact and drive deeper understanding of the economic, technical and industrial challenges
- technology roadmaps, identifying key development issues
- a requirement specification as the basis for future industrialisation and industrialisation roadmap
- a baseline assessment of the UK's current industrial footprint and capability
- a sustainability assessment

JZC meeting minutes

- Meeting of 22 July 2020
(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935604/jet-zero-council-meeting-minutes-22-july-2020.pdf) (PDF, 295KB, 4 pages)
- Meeting of 16 March 2021
(https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/979107/jet-zero-council-meeting-minutes-16-march-2021.pdf) (PDF, 350KB, 6 pages)

Terms of reference

Purpose

The Jet Zero Council will provide advice on the government's ambitions for clean aviation, with the aim of delivering zero emission transatlantic flight within a generation. A dynamic government and industry partnership, the council will focus on developing UK capabilities to deliver both net zero and zero emission technologies by:

- developing and industrialising zero emission aviation and aerospace technologies, including those that support our potential 'moon-shot' programme
- establishing UK production facilities for sustainable aviation fuels (SAF) and commercialising the industry by driving down production costs
- developing a coordinated approach to the policy and regulatory framework needed to deliver net zero aviation by 2050

Objectives

To:

1. Provide Ministerial and senior industry leadership on efforts to deliver UK capabilities for net zero aviation.

2. Identify and optimise the strategic, economic, and international benefits of developing these industries in the UK and overcome the barriers and constraints industry face in achieving these goals.
3. Accelerate the designing, manufacturing, testing, certification, infrastructure and commercial operation of zero emission aircraft and aviation systems in the UK through sustained investment in applied research and development and fostering greater collaboration across sectors.
4. Accelerate the delivery of SAF by supporting the investment in first-of-a-kind SAF plants, supporting research and development of new pathways and driving down production costs through upscaling and innovation.
5. Support grassroots innovation in these areas and make the UK the best place in the world to develop new aviation technology. Challenge existing approaches by involving disruptors and innovators in the dialogue.

Scope

The council will advise on efforts to deliver net zero and zero emission aviation through UK production of zero emission flight and SAF, recognising the role of all current and future forms of commercial aviation in the technology pathway. Wider decarbonisation levers will be considered in DfT's Net Zero Aviation consultation.

The council will establish delivery groups to accelerate progress on the objectives, utilising existing structures where possible. The council will work with relevant bodies, including the Net Zero Transport Board, the Hydrogen Advisory Council, and the Carbon Capture, Utilisation and Storage Council.

The primary focus will be on reducing carbon dioxide emissions, while taking into account wider sustainability issues, including non-CO₂ effects.

Glossary of terms

Net zero (carbon dioxide) emission flight – can be achieved by deploying zero emission technologies or by reducing emissions and balancing out any remaining carbon dioxide emissions produced by the aircraft by an equal share of negative emissions elsewhere. This could be achieved through zero emission aircraft, or through low emission aircraft in combination with sustainable aviation fuels with at least 100% lifecycle emission savings or offsetting against greenhouse gas removals.

Commercial flight – all current and future forms of air services carrying people or goods for financial reward. This includes scheduled and unscheduled, manned and unmanned aviation services.

Zero Emission aircraft – do not emit any tailpipe carbon emissions. This could be achieved through a range of electric- or hydrogen-based propulsion technologies. This definition does not account for carbon emissions during manufacturing or aircraft maintenance.

Sustainable Aviation Fuels – a wide range of sustainable alternatives to conventional fossil-derived kerosene. This includes all alternative fuels which have the potential to reduce carbon emissions.

Net Zero Aviation consultation – the government consultation, led by DfT, on the policies and mechanisms to achieving net zero aviation by 2050. This will be launched later in 2020.

Non-CO₂ effects – aviation produces a small amount of non-CO₂ emissions which have climate impacts. This includes very small amounts of methane and N₂O, both of which are regulated under the Climate Change Act, and aerosol particles and water vapour (which are not covered by either UK

or international climate change policy). These emissions affect aerosols, clouds and atmospheric composition and can have both a positive and negative warming effect on climate.

Press releases and government publications

Jet Zero Council keeps up momentum with £3 million government funding for zero emission flight infrastructure as UK pioneers first-ever net zero carbon freighter flights (<https://www.gov.uk/government/news/jet-zero-council-keeps-up-momentum-with-3-million-government-funding-for-zero-emission-flight-infrastructure-as-uk-pioneers-first-ever-net-zero-carbo>) (published 30 June 2021).

Bill to modernise airspace and tackle illegal use of unmanned aircraft receives Royal Assent (<https://www.gov.uk/government/news/bill-to-modernise-airspace-and-tackle-illegal-use-of-unmanned-aircraft-receives-royal-assent>) (published 29 April 2021).

Consultation outcome: Implementing the Carbon Offsetting and Reduction Scheme for International Aviation (<https://www.gov.uk/government/consultations/implementing-the-carbon-offsetting-and-reduction-scheme-for-international-aviation>) (published 28 April 2021).

General Aviation Roadmap (<https://www.gov.uk/government/publications/general-aviation-roadmap>) (published 23 April 2021).

UK enshrines new target in law to slash emissions by 78% by 2035 (<https://www.gov.uk/government/news/uk-enshrines-new-target-in-law-to-slash-emissions-by-78-by-2035>) (published 20 April 2021).

£5.5 million to drive improvements to UK's 'motorways in the sky' (<https://www.gov.uk/government/news/55-million-to-drive-improvements-to-uks-motorways-in-the-sky>) (published 19 March 2021).

Jet Zero launches £15 million competition to reduce aviation emissions (<https://www.gov.uk/government/news/jet-zero-launches-15-millioncompetition-to-reduce-aviation-emissions>) (published 16 March 2021).

£90 million boost to fire up aerospace manufacturing (<https://www.gov.uk/government/news/90-million-boost-to-fire-up-aerospace-manufacturing>) (published 12 March 2021).

Build Back Better: our plan for growth (<https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth>) (published 3 March 2021).

£84 million boost for technology to power a green aviation revolution (<https://www.gov.uk/government/news/84-million-boost-for-technology-to-power-a-green-aviation-revolution>) (published 27 January 2021).

New aviation technology can boost economy and benefit society (<https://www.ukri.org/news/new-aviation-technology-can-boost-economy-and-benefit-society/>) (published by UK Research and Innovation, 25 January 2021).

Sustainable fuels to power RAF jets (<https://www.gov.uk/government/news/sustainable-fuels-to-power-raf-jets>) (published 12 December 2020).

The ten point plan for a green industrial revolution (<https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>) (published 18 November 2020).

Prepare for lift-off: Jet Zero Council to deliver carbon-free flight (<https://www.gov.uk/government/news/prepare-for-lift-off-jet-zero-council-to-deliver-carbon-free-flight>) (published 25 September 2020).

PM commits £350 million to fuel green recovery (<https://www.gov.uk/government/news/pm-commits-350-million-to-fuel-green-recovery>) (published 22 July 2020).

UK aerospace sector to benefit from £400 million funding to go green (<https://www.gov.uk/government/news/uk-aerospace-sector-to-benefit-from-400-million-funding-to-go-green>) (published 20 July 2020).

Contact details

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