

Jet Zero Council – Eighth Meeting

14:30 – 16:00, 17 April 2023

Sustainable Skies World Summit

Attendees

Ministerial Attendance

- The Rt Hon Mark Harper MP, Transport Secretary, Joint Chair
- The Rt Hon Graham Stuart MP, Minister of State – deputising for The Rt Hon Grant Shapps MP, Energy Security and Net Zero Secretary, Joint Chair
- Nusrat Ghani MP, Minister of State – deputising for The Rt Hon Kemi Badenoch MP, Business and Trade Secretary, Joint Chair
- The Rt Hon Jesse Norman MP, Minister of State (Decarbonisation and Technology)
- Baroness Vere of Norbiton, Parliamentary Under Secretary of State (Aviation, Maritime and Security)

Jet Zero Council CEO

- Emma Gilthorpe, Chief Operating Officer, Heathrow Airport

Member attendance

- Alan Newby, Director of Aerospace Technology and Future Programmes – deputising for Grazia Vittadini, Chief Technology Officer, Rolls-Royce
- Colin Tattam, Director of Applications – deputising for Dr Alicia Greated, Chief Executive Officer, Innovate UK KTN
- Chris Gadsden, Director of Government Affairs – deputising for Johan Lundgren, Chief Executive Officer, easyJet
- David Bunch, UK Country Chair, Shell
- David Lee, Professor of Atmospheric Science and Director of the Centre for Aviation, Transport, and the Environment; Manchester Metropolitan University
- Graeme Elliott, Director Government, Industry and International Affairs – deputising for Shai Weiss, Chief Executive Officer, Virgin Atlantic
- Greg Archer, Director of European Policy – deputising for Dr Jennifer Holmgren, Chief Executive Officer, LanzaTech
- Professor Iain Gray, Director of Aerospace, Cranfield University
- James Stephens, Vice President Corporate Affairs – deputising for Tom Mackle, UK Airline CEO, DHL
- Julia King, The Baroness Brown of Cambridge DBE FREng FRS, Jet Zero Council Adviser (and Crossbench Member of the House of Lords)

- Jonathon Counsell, Jet Zero Council Sustainable Aviation Fuels Delivery Group Chair (and Group Head of Sustainability, International Airlines Group)
- Jonathan Hinkles, Chief Executive, Loganair
- Karen Dee, Chief Executive, The Airport Operators Association
- Kevin Craven, Chief Executive Officer, ADS Group
- Kyle Martin, Vice President, European Affairs, General Aviation Manufacturers Association
- Maria Laine, President of Boeing UK, Ireland and Nordic region, Boeing
- Matt Gorman MBE, Chair, Sustainable Aviation
- Neville Hargreaves, Vice President, Waste to Fuels, Velocys
- Omar Zin Abidine, European Analyst – deputising for Stuart Gregg, UK & Ireland Country Manager, Carbon Engineering
- Dr Oliver Taylor, Head of Country Business Development (UK) – deputising for Louise Kingham OBE, UK Head of Country and Senior Vice President for Europe, bp
- Oriel Petry, Senior Vice President Head of Public Affairs UK – deputising for Julie Kitcher, Executive Vice President Communications and Corporate Affairs, Airbus
- Air Vice-Marshal Paul Lloyd CBE, Chief of Staff Support and Chief Engineer – deputising for Air Chief Marshal Sir Mike Wigston KCB CBE ADC, Chief of the Air Staff, Royal Air Force
- Rachel Gardner-Poole, Jet Zero Council Zero Emission Flight Delivery Group Chair (and Chief Operating Officer, Connected Places Catapult)
- Russ Dunn, Chief Technology Officer and Head of Strategy, GKN Aerospace
- Professor Sarah Sharples, Chief Scientific Adviser, Department for Transport
- Sean Doyle, Chief Executive Officer, British Airways
- Sophie Lane, Chief Relationships Officer – deputising for Gary Elliott, Chief Executive Officer, Aerospace Technology Institute
- Daniel Walker, General Manager Sustainability – deputising for Stephen Heapy, Chief Executive Officer, Jet2
- Tim Alderslade, Chief Executive, Airlines UK
- Tim Hawkins, Chief of Staff – deputising for Charlie Cornish, Group Chief Executive, Manchester Airports Group
- Tim Johnson, Director, Aviation Environment Federation
- Tim Johnson, Strategy and Policy Director – deputising for Richard Moriarty, Chief Executive Officer, Civil Aviation Authority
- Val Miftakhov, Chief Executive Officer, ZeroAvia

Department for Transport official attendance

- David Silk, Director, Aviation
- Holly Greig, Deputy Director, Aviation Decarbonisation
- Debbie Stockwell, Deputy Director, Low Carbon Fuels

Department for Energy Security and Net Zero Secretary official attendance

- Jonathan Hoare, Deputy Director, Net Zero Strategy

Additional attendees

- Professor Piers Forster, Committee member, Committee on Climate Change
- Andy Johnston, Jet Zero Communications & Engagement Network Chair (and External Relations Manager, GKN Aerospace)
- Richard Coates, Special Adviser to the Secretary of State for Transport
- Ministerial Private Secretaries
- Jet Zero Council Secretariat

Apologies

- John Holland-Kaye, Chief Executive Officer, Heathrow Airport
- Rannia Leontaridi, Director General, Aviation and Maritime Security, Department for Transport
- Fred Perry, Director of Advanced Manufacturing, Department for Business and Trade
- Paul Griffiths, Head of Aerospace & Defence Team, Department for Business and Trade

Actions

- Jet Zero Council (JZC) Secretariat to consider including aviation's future hydrogen demands for discussion at a future Council meeting.
- Council members with an interest in joining the non-CO₂ impacts task and finish group are to contact the JZC Secretariat by 21 May.
- JZC Secretariat to consider holding a future Council meeting at the Carbon Capture, Utilization and Storage (CCUS) cluster.

Summary of Meeting

- The Secretary of State for Transport, Nusrat Ghani MP and Graham Stuart MP highlighted the progress made on decarbonising aviation since the last meeting, followed by a summary from the Department for Transport (DfT) on recent announcements regarding sustainable aviation fuels (SAF).
- Matt Gorman MBE gave an overview of [Sustainable Aviation's Net Zero Carbon Road-Map](#).
- Council members discussed aviation's non-CO₂ impacts and next steps.

Readout

1. Opening remarks

The Secretary of State for Transport highlighted the Government's [SAF announcements](#) made that day, [Zero Emission Flight \(ZEF\) Infrastructure project outcomes](#); and publication of the [JZC Delivery Group \(DG\) Two-Year Plan](#). He also outlined key [developments by Council members](#) since the last meeting.

Nusrat Ghani MP gave an overview of her experience that morning on the [RAF Voyager which refuelled mid-air with a 43% blend of SAF, commenting that](#) it had showcased the UK's aviation excellence. The Minister reiterated government's record support for the Aerospace Technology Institute programme and said that she will champion work to deliver a positive funding outcome for future years out to 2031. She re-affirmed the commitment of the Business & Trade Secretary to the Council on her behalf and thanked ADS Group for hosting the meeting.

Graham Stuart MP said the Energy Security and Net Zero Secretary looks forward to co-chairing the Council. He said that the government recognised the challenges in decarbonising aviation which is why it had made [£20 billion available for CCUS](#) and would [extend the Climate Change Agreement scheme](#) to make energy and carbon savings.

2. Update and reflections on recent Sustainable Aviation Fuel announcements

Debbie Stockwell gave an overview of progress made across the Government's SAF workstream. She said the [second SAF mandate consultation](#) which had been published that month built on commitments made in the previous year and would be a key mechanism for providing carbon savings within aviation. She highlighted the Government's announcements that the University of Sheffield had been chosen to deliver the [UK's SAF Clearing House](#) and the [launch of the second application window for the Advanced Fuels Fund](#) which made £56 million available to support a UK SAF industry. She also highlighted the publication of [Philip New's independent report into developing a UK SAF industry, and the Government's response](#); outlining commitments to continue reviewing options to secure investment in SAF in the UK, and if needed, a formal consultation. She also noted that in early May there would be sessions with stakeholders to run the report and options to address it's recommendations.

Key discussion points included:

- Council members welcomed the Philip New report and asked what government needs to further progress work on a revenue certainty mechanism. The Secretary of State for Transport said reassurance from the sector that they recognised that any funding for such a mechanism would be industry provided would be beneficial.
- Council members suggested that the Government needed to remain focused on the end goal of delivering more sustainable flight whilst bringing economic benefits. The Secretary of State for Transport noted this and said this was the Government's goal.

- Council members said the second SAF mandate consultation provided a great framework for industry but noted that key investment decisions needed to be taken within a year and so moving at pace was crucial.
- Council members asked about possible contingencies if SAF could not be supplied in the UK. The Secretary of State for Transport said that whilst importing SAF was an option, the Government intended to deliver its target of 5 new SAF plants as importing SAF would not deliver the long-term industrial benefit to the UK.
- Council members asked under what circumstances a consultation would be needed on a revenue certainty mechanism. The Secretary of State for Transport said that further work is needed to scope out different options before a decision on a consultation can be taken. Debbie Stockwell asked industry to further consider how such a mechanism could work alongside a SAF mandate, given this had not been done before.

3. Sustainable Aviation's decarbonisation roadmap

Matt Gorman MBE gave an overview of [Sustainable Aviation's Net Zero Carbon Road-Map](#) noting that it aligned with the Government's [Jet Zero Strategy](#), and that the key challenge would be delivering at scale with speed. He said their assessment was that SAF could provide 75% of aviation fuel by 2050, of which at least 2/3 of that could be made in the UK with the right policy support. He explained that the findings highlighted that making power-to-liquid SAF alongside hydrogen for ZEF and carbon removals could require 20% more zero-carbon electricity in the UK. He said the roadmap assumes that narrow-body hydrogen planes would enter service in 2035 providing ATI matched-funding ran until 2031, and he welcomed the most recent uplift in funding from the Government. He said aviation would require carbon removals and that including them in the [UK Emissions Trading Scheme](#) could help accelerate progress. He also said that the [UK's airspace modernisation](#) should be accelerated, with completion by the end of the decade. He summarised by saying that the UK needed to secure the economic opportunities presented by the decarbonisation of the sector, in particular by accelerating SAF timelines to bring investment into the UK.

Key discussion points included:

- Council members said that the ambition in the roadmap on green hydrogen did not match the current pace of production. The JZC CEO said the next Council meeting would focus on CCUS but set an action to consider hydrogen supply and demand at a future meeting.
- Council members asked if aviation had been factored in appropriately to planning across government. Graham Stuart MP said the Government was quadrupling offshore wind and had made £20 billion available for CCUS, but had more work to do to ensure aviation was well accounted for within that.
- Council members said that airspace modernisation was a good opportunity to make short term carbon emission savings, and that this work could be accelerated. The Secretary of State for Transport said he would take this on board.

4. Addressing aviation's non-CO₂ impacts

David Lee gave an overview of aviation's non-CO₂ impacts noting that they are quantified using the climate metric effective radiative forcing (ERF). He said that the latest impact assessment had identified that contrail cirrus had the largest impact on the climate at that time, followed by carbon dioxide, nitrogen oxides, water vapor emissions in the stratosphere, and aerosols. He said if the current rate of aviation fuel use increase were to continue, the net non-CO₂ impacts would remain at about 2/3 the total climate impact (as measured by ERF), but noted that this comes with eight times more uncertainty compared to that of CO₂. He highlighted that more research would be needed to better understand aviation's non-CO₂ impacts and inform mitigation options, including the trade-offs with CO₂.

The Secretary of State for Transport asked if there were sectors with comparable non-CO₂ impacts. David Lee said that maritime impacted low-level clouds through sulphur dioxide emissions and also emitted nitrogen oxides but these emissions tended to have a cooling impact on the climate. Other sectors, such as agriculture can also have significant non-CO₂ emissions (e.g., nitrous oxide, methane, both greenhouse gases)

Holly Greig gave an overview of the Government's research proposal to address aviation's non-CO₂ impacts. She outlined potential areas for research, including a literature review of existing research, methodologies for measuring aviation's non-CO₂ impacts, reducing the aromatic content of kerosene, improving our understanding by reducing scientific uncertainties, and mitigations. She highlighted that the aim was to carry out the first three of these this financial year, with a multi-year research programme to follow.

Key discussion points included:

- Council members voiced support for the research proposals, noting that the approach aligned strongly with the messages from the science community.
- Council members said that aviation's non-CO₂ impacts should not take precedence over CO₂, but there was a need to focus on measures that will tackle both.
- Council members said they needed to understand the level of certainty around the impacts of different technologies so that their delivery could be prioritised.
- Council members said that action should be taken quickly rather than waiting to find the perfect solutions, including assisting the Department for Transport with its research proposals by drawing on academic networks.
- The Secretary of State for Transport said that clarity was needed around aviation's non-CO₂ impacts and the Government's research proposals were the best first step in addressing them.

Rachel Gardner-Poole summarised the discussion and outlined the next steps, including forming a JZC non-CO₂ task and finish group. She encouraged Council members to express their interest to the JZC Secretariat.

5. Closing remarks & AOB

Emma Gilthorpe provided final remarks and comments, highlighting the positive step forward of the recent Government SAF work, reiterating the action on the non-CO2 group, and suggesting a discussion on CCUS at the next JZC meeting.

The Secretary of State for Transport suggested that the next meeting could be hosted in Bristol's South-West Aerospace cluster and welcomed other suggestions from the Council.

Graham Stuart MP also suggested the Net Zero Teesside Carbon Capture, Utilization and Storage (CCUS) cluster.