



Achieving net zero in aviation: A pipe dream or a target within reach?

25 September 2024

Overview

Access for Women in Energy (AccessWIE) organised a roundtable discussion on the sustainability of the aviation sector in the House of Lords on Wednesday 25th September 2024.

When discussing net zero and the transport sector, the focus is typically on road transport while air transport receiving less attention. This roundtable aimed to shed more light on the importance of the aviation industry in the net zero journey.

Dr Carole Nakhle, President of AccessWIE and CEO of Crystol Energy, made the opening and concluding remarks, calling for policies based on pragmatism – not dogmatism. The energy transition is complex and full of challenges; it cannot proceed unless various stakeholders, all around the world, collaborate and act in a transparent way.

Lord David Howell, Former Secretary of State for Energy in the UK & Co-Chair of AccessWIE, moderated the discussion.

An amazing line-up of speakers addressed the sector's challenges ahead, the role of different stakeholders and the outlook of this global industry, among others, including:

- **Dr Nadine Itani**, Programme Leader for Air Transport Management, University of Surrey, and Member of the Advisory Board at Crystol Energy
- **Captain Robert Seaman**, Chair of the inter-Livery Green Aviation Task Group in the City of London
- **Jane Thompson**, Deputy Chair of the British Aviation Group, and Director in ICF's Aviation, Travel and Tourism Division
- **Yasar Yetiskin**, Sustainable Aviation Manager, ICF London
- **Dhirender Malik**, Principal Consultant, Consulting International, KBR



The Speakers

The following sections summarise the key highlights of the discussion as addressed by speakers.

Dr Nadine Itani

- The UK Jet Zero Strategy presents an ambitious roadmap, aiming for net-zero aviation by 2050. However, it leans heavily on technological innovations that are not yet fully developed (e.g., Sustainable Aviation Fuels and zero-emission aircraft). Is this too ambitious given the challenges in scaling these technologies while anticipating 70% growth in air travel demand by 2050?
- On the demand-side, measures like carbon pricing, frequent flyer levies, and fuel taxes could help reduce emissions in the short term, but they may disproportionately affect lower-income travellers and economic growth, particularly in tourism-dependent regions. Under the independent committee for climate change CCC's net zero pathway, demand would be capped at 25% growth by 2050 quite different from the government's strategy.
- The supply-side focus on innovations like electric planes, hydrogen-powered aircraft, and SAFs offers long-term solutions but raises concerns about feasibility in the near term. SAF, for example, only accounted for 0.2% of all aviation fuel in 2023, and zero-emissions aircraft are not expected before 2035.
- The real challenge? Harmonising both approaches to ensure we reduce emissions effectively while managing demand fairly and driving economic growth. Sustainable aviation is not a question of one over the other - it requires a thoughtful balance.

Captain Robert Seaman

- Despite debt being available, institutional investors see SAF as high risk with low carbon impact and return on capital investment. Does the recent pause in development of Shell's Sustainable Fuels Plant in Netherlands demonstrate the unsuitability of this solution for market and a possible recession next year?
- There is not enough clean energy (nuclear + renewables) in the UK or the world to deliver net zero aviation; where will the \$2-\$10trillion required come from to deliver this if demand management and tax increases are exercised?
- How can we overcome the paradox that the Paris Agreement (e.g. CBRD) and Green Taxonomies present to aviation capital management, the market and investments?
- About 80% of the global fleet is old. New engine option aircraft are performing better than net zero transition and will do until the 2030s; why isn't unblocking supply chains and increasing system efficiency not a priority?
- Airlines are notorious for operating on slim profit margins and sustainability depends on their commercial viability. Resilience to economic shocks, natural hazards and regional security shocks is vital if aviation sustainability is to thrive; how can this be regulated?
- Can a private terminal market for carbon (i.e. commodities trading not ETS) be the turnkey solution to transition aviation? Can the City of London act as a Green Aviation Financial Centre to achieve these outcomes?

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Jane Thompson

- An 'aviation-lifer' who is passionate about the sustainable transition of the sector. Jane's contribution to the discussion centred around the importance of PEOPLE to help us make sure achieving net zero in aviation is not a pipe-dream, but becomes a reality. We need the technical solutions of course, alongside the right policy levers, and the money, but success is also

contingent upon the changing of entrenched mindsets, and accepting the fact that scepticism is often borne out of mistrust.

- But how do we do this?
 - We need a pipeline of talent from a diversity of backgrounds - the only way to access diversity of thought.
 - We need to be better at telling a story and providing the counter-narrative - the facts and figures alone are not enough.
 - We need to be honest and realistic - trust has to be earned.
 - We should accept that greenwashing does not have to be a bad thing - it is an important part of the journey towards real & meaningful action.
 - We must embrace the criticality of winning hearts and minds, which is as important in our journey to transition as technical success.



The discussion

Yasar Yetiskin

- SAF is recognized as the most important tool for decarbonizing the aviation industry by 2050, as 37-70% of aviation emission reduction is expected to come from SAF by that time.
- As a result, up to 500 million tonnes SAF is estimated to be required by 2050.
- Considering the 0.5 million tonnes SAF production in 2023, achieving 2050 targets require substantial scale up.
- This scale up can only be achieved through delivering the announced SAF capacities, which require removing policy, market and technology related barriers to enable access to large scale financing.
- Policy is particularly important in delivering SAF targets, but they need to remove uncertainties and complexities.

- UK is doing a particularly good job in developing a revenue guarantee mechanism, which can provide a longer certainty for the market.

Dhirender Malik

- Lots of interest from various locations to assess the potential of producing SAF, including all potential pathways (HVO, ATJ, Gasification F-T and E-Fuels).
- Availability of approved technologies for all the popular production pathways.
- Countries are announcing SAF related mandates or policies to boost the local SAF production.
- Integration of SAF with the existing production sites are providing multiple benefits.
- Commercially proven capacity range of approved technologies is still developing and requires further development and confidence to achieve the oncoming SAF production targets.
- There are still several challenges for SAF to scale-up, including:
 - Feedstocks quality and availability depends on different policies on various countries and geographical locations
 - Location of production plant, feed source and product disposal can be at different locations, requiring a new infrastructure
 - Availability and reliability of renewable energy source
 - Production scale of commercially proven technologies is still developing and requires further higher capacities to achieve targets for 2030 and 2050
 - Higher capex is challenging project decisions
 - More guidance required on sustainability criteria regarding overall SAF production plant
 - Local regulation and incentive plans favouring the SAF production



The networking reception