

Aviation industry targets hydrogen in sector's long-term decarbonisation strategy

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Green hydrogen could help slash the long-term carbon footprint of global air travel in the coming years, while more stringent carbon abatement targets and a decreased reliance on traditional biofuels will also be necessary to increase the pace of emissions reductions, a conference session heard Tuesday.

Hydrogen electrolysis is playing an increasing role in decarbonising hard-to-abate sectors, such as transport, with the [EU aiming to expand clean hydrogen capacity](#) sixfold to 6 GW by 2024 and 40 GW by the end of the decade.

With aviation CO₂ output also expected to continue rising after the effects of the COVID-19 pandemic subside, airplane manufacturers and carriers are viewing hydrogen as a key component in their emissions reduction plans as well.

"There's a set of different paths that we can envisage for the future. We think hydrogen in the long run has the biggest potential," Guillaume Faury, CEO of European airline manufacturer Airbus, told UN body ICAO's Stocktaking Seminar on in-sector CO₂ emissions reductions on Tuesday.

In addition to using carbon credits, ICAO's global offsetting programme CORSIA lays out several in-sector options for carriers' to achieve CO₂ neutral growth over the next 15 years, such as utilising sustainable aviation fuels (SAFs) and undertaking technological and operational improvements to aircraft.

But with the coronavirus pandemic temporarily grounding air travel and ICAO's 36-member Council [opting to drop this year](#) from CORSIA's 2019-20 emissions baseline for the scheme's three-year pilot phase (2021-23) at a minimum, [offset demand could plummet](#) compared to a pre-COVID scenario, placing a larger emphasis on the programme's other compliance strategies.

Faury explained that Airbus is working with several carriers and airports on the development of an "Airport Hydrogen Hub" to scale up hydrogen deployment in phases. The initiative will aim to decarbonise all ground transportation by 2030, after which it will become available to start fuelling aircraft.

This matches the timeline of aviation company ZeroAvia's goal of deploying its hydrogen-electric propulsion technology in 100 to 200-seat aircraft after 2030. The company already has two six-seat prototypes and hopes to execute a 300-mile flight later this year.

ZeroAvia CEO Val Miftakhov said the rapid reduction in prices for solar PV technology over the past 15 years could serve as a model for hydrogen usage in aviation.

"You will see the same kind of dynamics in the electrolysis equipment for hydrogen production, because it's mostly CAPEX-driven," Miftakhov said. "Reductions are going to be steep and quick once the volumes appear."

GREATER GOALS

Drew Kodjak, executive director at the non-profit International Council on Clean Transportation (ICCT), also endorsed hydrogen for the long-term decarbonisation of air travel, though he noted the technology required massive investments in research and development to deploy at scale.

He also expressed scepticism about the near-term contribution from SAFs that can result in indirect land-use change, are only available in small quantities, and cost over three times more than traditional kerosene.

"I don't see any airlines or manufacturers stepping up and saying, 'yes, we will agree to three [times] the cost of fuel'," Kodjak said.

However, industry members thought greater innovation and government incentives could help SAFs achieve more ambitious GHG reductions in the short term.

"If we could get beyond 50% in terms of the mix of sustainable fuel in kerosene, pushing that towards 100% would also increase...the ability for the industry to incorporate SAF," said Sean Doyle, CEO of Irish carrier Aer Lingus.

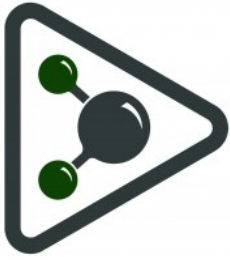
Others called on the global aviation sector to ramp up its climate ambition and pursue a net zero emissions goal by 2050, a far cry from CORSIA's mandate of only keeping emissions steady at 2019-20 levels.

Watchdog Climate Action Tracker has rated the ICAO programme's carbon neutral growth goal as "critically insufficient" to keep global temperatures within 1.5C above pre-industrial levels.

A UN-convened group of investors this summer also [called on the UN body](#) to deliver a net zero 2050 goal with minimal offsetting ahead of the rescheduled COP26 climate summit next November.

"ICAO can bring that together and show that actually there is a groundswell of support for this, and turn it into a firm commitment with a clear plan that sits behind that," said John Holland-Kaye, CEO of London's Heathrow Airport.

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