

Aviation Continues to Focus on Carbon Emissions Reduction



Responsible for about 2% of total global carbon emissions, the air freight sector is working to halve its CO₂ emissions by 2050. Here's how things are going and what still needs to be done.

Taken as a whole, air transport represents about 2% of global carbon emissions. And while it already compares favorably with other modes of transport—maritime shipping, for example, accounts for about 4% of global carbon emissions—the sector is committed to cutting its net emissions in half by 2050.

“Despite the turbulent economic times, there is a genuine desire among the whole air freight supply chain to be greener,” the [International Air Transport Association \(IATA\)](#) points out. Some of the air cargo carbon footprint reduction actions being deployed include reducing fuel consumption by reducing weight on board (e.g., going paperless with e-freight, investing in lightweight unit load devices and so forth); aircraft fleet modernization; and the use of biofuels.

In October, IATA passed the “Fly Net Zero” commitment. It says IATA member airlines are committed to achieving net-zero carbon emissions from their operations by 2050. IATA says this pledge brings air transport in line with the objectives of the Paris agreement to limit global warming to 1.5°C, and that success will depend on the “coordinated efforts of the entire industry (airlines, airports, air navigation service providers, manufacturers) and significant government support.”

It's a monumental undertaking. To be able to serve the needs of the 10 billion people expected to fly in 2050, IATA says that at least **1.8 gigatons of carbon must be abated in that year**. “Moreover,” it adds, “the net zero commitment implies that a cumulative total of 21.2 gigatons of carbon will be abated between now and 2050.”

Flying Net Zero

In *Forbes*, Deloitte's Jean-Louis Rassinoux points out that the global air transport industry has been “ahead of the decarbonization curve” for several years. To achieve its Fly Net Zero goals, however, the sector will need the buy-in and participation of its entire value chain and ecosystem—something that goes beyond just aircraft manufacturing and operation.

Rassinoux says structural evolutions on aircraft and propulsion technology are key to reducing greenhouse gas (GHG) emissions within the aviation industry, and that fleet renewal, the use of sustainable aviation fuels and hydrogen-powered aircraft are also important.

“Hydrogen-powered aircraft are expected to arrive in the next decade—which means aircraft with no CO₂ emissions at all,” Rassinoux writes. “Some major aircraft manufacturers are developing not only traditional aircraft that are hydrogen powered but also models with alternate flying wing designs that can improve overall performance.”

Pooling their Efforts

Individual companies within the aircraft production supply chain are already making inroads on the carbon emissions front and taking steps to reduce their GhGs. Airbus is one example. Last year, the aircraft manufacturer formed a partnership with a group of airline owners to launch a carbon removal scheme.

According to *AIRonline*, the partnership includes Airbus plus Air France-KLM, International Airlines Group, Lufthansa Group and Virgin Atlantic. 1PointFive, a subsidiary of Occi-

dental Petroleum's Low Carbon Ventures business, is also involved in the initiative. Through a process known as "direct air carbon capture and storage," CO2 is filtered out of ambient air using high-powered fans. Once it's been removed, the gas can be permanently stored in geologic reservoirs, the publication reports.

Those saline aquifers are located in a one megaton facility in the Permian Basin in Texas, an underground area around 86,000 square miles in size. "As the aviation industry cannot capture CO2 emissions released into the atmosphere at source, a direct air carbon capture and storage solution would allow the sector to extract the equivalent amount of emissions from its operations directly from atmospheric air," Airbus said in a [press release](#).

As part of the agreements, the airlines have committed to engage in negotiations on the potential "pre-purchase" of verified and durable carbon removal credits starting in 2025 through to 2028. Airbus says the carbon removal credits will be issued by 1PointFive, a subsidiary of Occidental's Low Carbon Ventures business. Airbus' partnership with 1Point-Five includes the pre-purchase of 400,000 tonnes of carbon removal credits to be delivered over four years.

Engaging the Whole Ecosystem

The Airbus initiative is one of several initiatives currently underway in the aviation industry, which continues to work toward its carbon reduction goals. It's also an example of the importance of collaboration in these efforts, which require input from various partners in order to succeed.

"Achieving substantial results will require well-coordinated collaboration that involves not only aircraft manufacturers, airlines, MRO players, and airports but also power and gas utilities, public authorities, and even ground mobility operators," Rassinoux writes. "Only by engaging the entirety of the ecosystem can decarbonization goals be met within the industry."