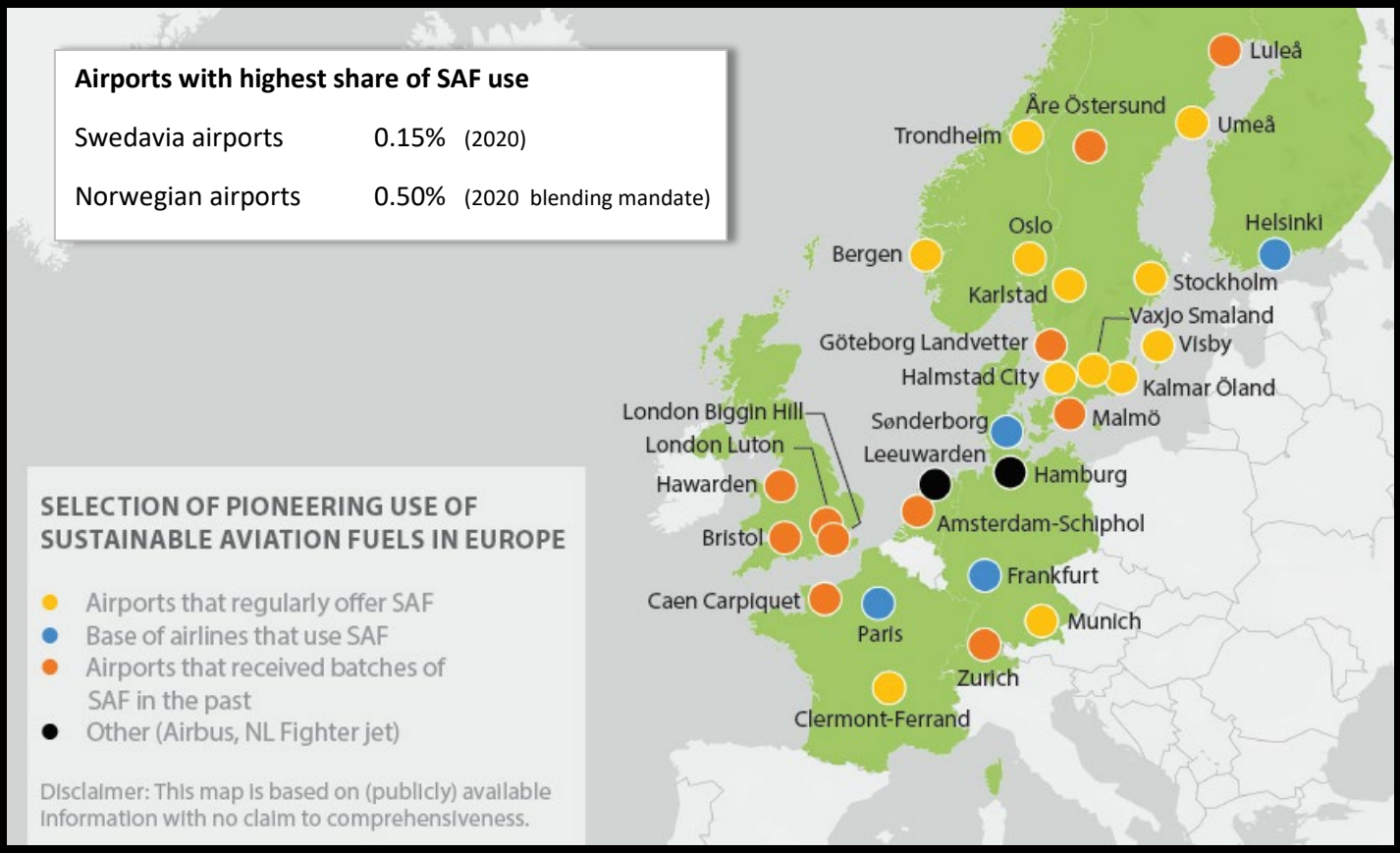
EUROCONTROL Data Snapshot

Can regulation and focused logistics unlock the availability of sustainable aviation fuels (SAF) at European airports?

8 June 2021



Sustainable aviation fuels (SAF) are biofuels that currently deliver up to 80% savings in net CO_2 emissions. Under its ReFuelEU Aviation initiative, the European Commission is considering a SAF mandate that would require jet fuel suppliers at EU airports to blend an increasing percentage of SAF into their fuel from 2025.

At only 0.05% of total jet fuel consumption, the use of SAF is still very low in Europe. By 2030, if SAF could account for 10% of all fuel used – the aspirational goal we took in our think paper #10, based on the IEA's Sustainable Development Scenario – this would reduce CO_2 emissions from EU departing flights by 8%.

Besides the need to stimulate the uptake of SAF to accelerate the decarbonisation of aviation (see our think paper #10), another crucial issue is the logistics of getting fuel to the airports. In the last 'normal' year, 2019, just 39 of 1,657 EU airports accounted for 80% of the volume of conventional fuel used by aircraft departing from EU airports. Therefore, instead of distributing this SAF evenly over all 1,657 EU airports, it would be more efficient to concentrate on the fuel supply chain at these 39 airports. Providing a 12.5% SAF blend to these airports would achieve the same 8% reduction in CO_2 emissions from flights departing the EU. As yet, only 7 of these 39 airports (Frankfurt, Paris CDG, Amsterdam, Helsinki, Stockholm-Arlanda, Hamburg, Munich) have started to supply SAF.

SAF is currently more than twice as expensive as fossil jet fuel. Even at twice as expensive, use of 12.5% SAF in the mix would of course lead to a subsequent increase in fuel costs of 12.5% for airlines. Some airlines might therefore be tempted to increase their use of economic tankering, which would threaten the acceleration of the decarbonisation of aviation (see our think paper #1 and ICCT). This increase in costs would also reduce the competitiveness of airlines operating from the EU. It would therefore be necessary to ensure re-balancing measures.

Technical Bits: 'Economic tankering' is when a flight departing a non-SAF airport carries some or all of the fuel to make the return journey, to reduce the additional cost of SAF. This increases the weight of the aircraft on the in-bound flight and therefore the CO_2 emissions. SAF at 0.05% of total fuel is a pre-COVID statistic.