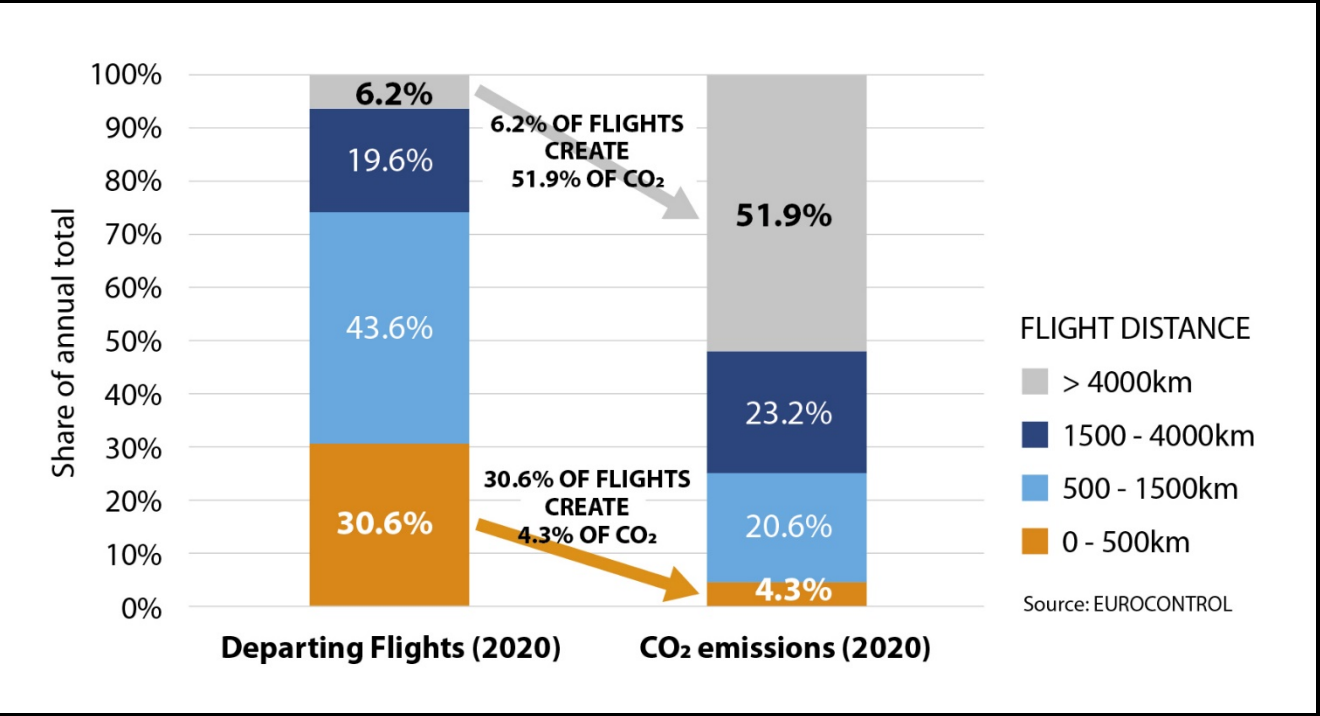
EUROCONTROL Data Snapshot

Half of CO_2 emissions come from just 6% of flights: the long-haul ones.

16 February 2021



For some routes, only aviation can provide a timely connection. This is true for some shorter hops, over water or where a land connection is difficult, but mostly this is a question of distance. In 2020, some 6% of flights from European airports were clearly long-haul, crossing more than 4000km.

For passengers and for urgent or high-value cargo, there is little or no alternative on such routes. The importance of long-haul is even more clear when measured in capacity, rather than flights. For example, on the passenger side these 6% of flights carry 10% of total seats, and more than 40% of seat-kilometres (the usual measure of passenger capacity in the industry).

The chart shows, however, that there is an environmental cost. Longer distances naturally mean longer duration flights, and mostly by larger aircraft (hence the higher proportion of seats). That has a significant cost in terms of CO_2. In 2020, more than half of European aviation's CO_2 emissions were from this tiny proportion of the overall number of flights. We have mentioned in other data snapshots how COVID-19 has affected the mix of longer- and shorter-haul flights. But this domination of emissions by a few longer-haul flights is not COVID-related: in 2019, the 6% that were long-haul had a 48% share of CO_2, very similar to 2020.

At the opposite end of the scale, the 31% of flights under 500km had only a 4% share of CO_2 (24% of flights with 3.8% of CO_2 in 2019). Short-haul is an excellent candidate for early electrification, amongst other initiatives, to reduce its environmental impact. These improvements will be needed, if aviation is to meet its sustainability targets. However, these data show that the maximum possible saving in short-haul is about 4% of the total CO_2. Increasing the supply of sustainable aviation fuel to cover just 10% of the needs of long-haul, would do more than can ever be done in short-haul to reduce net CO_2 emissions.

Technical Bits: The statistics shown are for departures from airports in the 40 European States which participate in the EUROCONTROL Central Route Charges process zone . Seats and seat-km data are from 2019. For this illustration we assume sustainable aviation fuel saves 75-80% of CO_2 compared to kerosene.