

COMMENT: AIRLINE FUEL EFFICIENCY RANKINGS

Each year, several organisations attempt to provide rankings of the efficiency of airlines. Please find below a commentary on these studies.

We do not believe these blunt fuel efficiency rankings provide an accurate reflection of the sustainability of individual airline operators and in fact could lead to consumers being misled into making incorrect choices. In particular, the annual rankings by the International Council for Clean Transportation (ICCT) and Atmosfair tend to often provide conflicting reports and are not based on accurate data from the airline operators themselves. They are likely modelled in good faith, but their results are questionable and should not be seen as the standard for decisions by travellers or corporate travel agencies.

Trying to rank airlines on fuel efficiency, particularly using modelled emissions profiles based on incomplete or assumed data often provides a distorted picture that may end up being a disservice to those wishing to evaluate their own flight CO₂ emissions.

Comparisons between routes

These studies attempt to provide a blanket fuel efficiency metric comparing airlines operating completely different routes. These are generally not comparable, due to different operating environments. For example:

- » Consistent jet stream winds in one direction could assist or hinder fuel efficiency. An absence of these winds over another route will skew the results.
- » The generic modelling of fuel usage does not take into account specific initiatives airlines are undertaking to improve their efficiency.
 - ↳ For example, on very long routes such as flying across the Pacific Ocean, there may be a wide difference in the flight paths flown on any given day as a result of the airline and air traffic management providers optimising the benefit from favourable wind conditions. But even on shorter routes, these operational decisions can reduce fuel use considerably – something not taken into account in these studies.
- » Some airlines must operate in more congested airspace than others (due to the markets they serve), or may need to avoid mountainous terrain or military airspace, whereas others flying different routes may not.
- » Sector lengths can contribute, with longer flights often using more fuel simply because they must uplift more fuel (and account for the weight of the fuel). However, these longer flights may mean the trip can be done in one long sector, and avoid having a shorter flight to a hub airport.
- » The inclusion of freight in the analysis can skew the results greatly, with some routes having greater freight volumes than others based on the origin and destination export markets.
 - ↳ Moreover, the most fuel efficient airlines in one ranking are charter and low cost airlines (which often have higher passenger load factors) but these airlines carry no freight. Whereas in the other study, around half the efficiency ranking is accounted for by how much freight the airline carries.

Data challenge

More appropriate analysis would be to compare airlines operating on the exact same route between the same cities, but even then the results may not give an accurate representation:

- » The data is not gained from the actual airlines and is therefore a patchwork of assumptions, some of which is based on US Department of Transport load factor data. This provides only one-way information on flights out of the USA.
- » The modelling usually gives a snapshot of a single year and does not inform passengers about changes at the airline including new fleet types entering service, or older models leaving.
 - ↳ At one European airline, by the time the analysis had been done, their short haul fleet had been upgraded by two generations of aircraft and yet the readers of the survey were still seeing the old modelled data.
- » In past years, the ICCT study and the Atmosfair study have produced wildly different results for the same airlines on the same routes. One year an A-rated airline in one study was near the bottom of the rankings in the other.
- » Load factor is an important metric, but different airline models can mean very different results.
 - ↳ Low cost or charter airlines often have very simple routes to a limited number of destinations, whereas network carriers have more complicated route structures that provide connectivity to a much wider range of destinations and across different aircraft types.

Our approach as an industry is to work with all airlines to try and ensure they are operating at their most efficient. Airlines have spent over \$1 trillion on new aircraft since 2009 and the sector has doubled its efficiency on a per-passenger basis since 1990. We are committed to continuing this trend and all airlines have a very simple reason to pursue fuel efficiency measures – the cost of fuel is often the highest operating expense.