

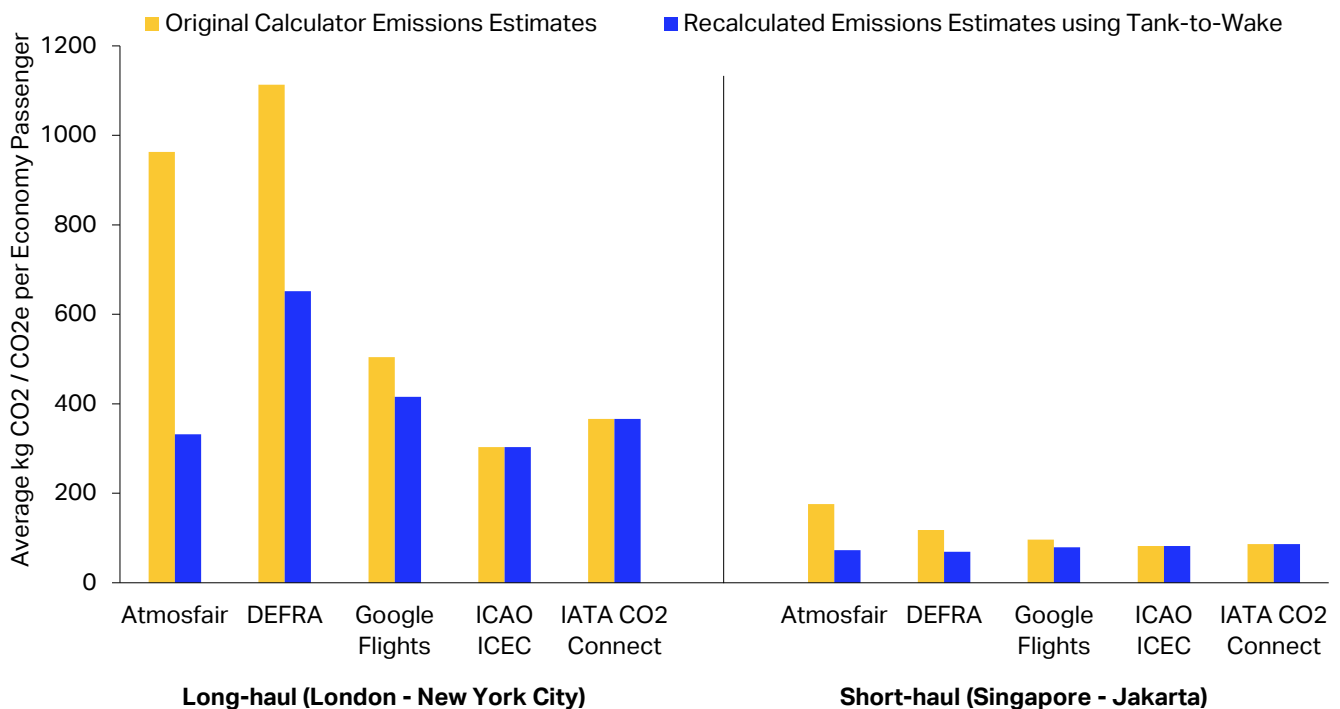


Chart of the Week

23 August 2024

How much CO₂ does your flight emit?

Variation in emissions estimates across calculators for long-haul and short-haul flights



Source: IATA Sustainability and Economics.

Note: Average per-passenger emissions from various calculators for all scheduled flights between London-NYC (long-haul) and Singapore-Jakarta (short-haul) on a day in December 2024. The original calculator emissions estimates (yellow bars) are as displayed by the respective calculator with emissions factors as follows: Atmosfair (3.16 multiplied by a [radiative forcing factor](#)), DEFRA (5.40), Google Flights (3.8359), and ICAO ICEC & IATA CO₂ Connect (3.16). For comparison, the emissions estimates were recalculated using the tank-to-wake emissions factor of 3.16 (blue bars).

- There are significant discrepancies in the flight emissions data available to passengers, depending on the emissions calculator used by the flight booking platform. To calculate the CO₂ emissions from a flight, it is necessary to know how much fuel is burned, and how much emissions are generated from the fuel burned.
- Most calculators estimate the fuel burn using theoretical models or test fuel data. The result will then remain an estimation, as opposed to calculations that rely on observed data from aircraft's actual fuel burn, which are factual.
- Once the amount of fuel burn has been estimated or observed, the CO₂ emissions generated from the flight can be calculated by adopting an emission factor. If the entire life cycle of the fuel is considered, including emissions from producing the fuel in addition to the burning of the fuel in the engine (Well-to-Wake), the emissions factor will be greater than if only emissions produced by the aircraft's engines during flight are considered (Tank-to-Wake). Some calculators add extra factors to account for the climate impacts of non-CO₂ emissions, though these methods [lack scientific validity](#) yet.
- Discrepancies in emissions data can undermine passenger trust and make it harder for passengers to make informed travel choices. It also makes comparisons very difficult. It would be of great benefit to travelers if methodologies were harmonized and calculations were based on accurate real-world data.

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economics@iata.org