

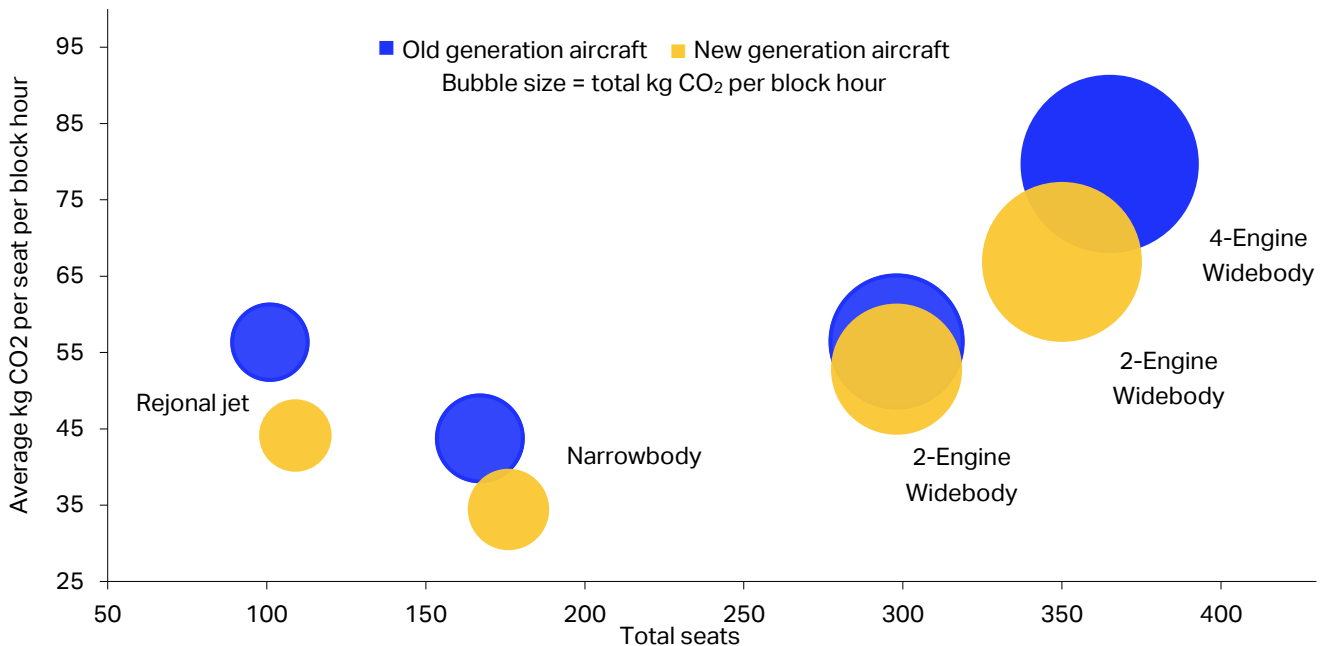


Chart of the Week

7 August 2026

The Emissions Case for Next-generation Aircraft

Average kg CO₂ per seat per block hour, by aircraft type and generation



Source: IATA Sustainability and Economics.

Note: Fuel burn per block hour represents the average of primary fuel burn and block time data reported through [CO2 Connect](#). Aircraft seating configurations are averaged and based on data from ch-aviation.

- Fleet renewal remains one of air transport's most effective levers for reducing in-sector emissions. Across four select aircraft series, new-generation aircraft consistently outperform their predecessors, delivering lower fuel burn rates and CO₂ emissions per block hour. These improvements translate into significant reductions in emissions intensity, particularly when measured on a per-seat basis.
- New-generation aircraft achieve considerable emissions reductions thanks to improved propulsion technology with newer and more efficient engines, often coupled with upgraded aerodynamics from re-engineered wings.
- Regional jet and narrowbody aircraft improvements often include cabin space optimization and additional fuselage segments, which also allow for a modest increase in seating capacity. The combination of upgraded technology and increased seating capacity delivers up to 21% lower emissions per seat. Among widebody aircraft, the largest efficiency gains come from moving away from four-engine to twin-engine configurations, delivering as much as 16% lower emissions per seat, even with a decrease in the seat count. A direct swap from a current-generation to a next-generation widebody aircraft with comparable seating capacity can deliver meaningful emissions savings per trip of around 5-10%.
- Beyond emissions reductions, fleet renewal delivers broader sustainability and operational benefits. New-generation aircraft typically produce less noise, improve passenger comfort, and offer greater operational flexibility through extended range and improved payload capabilities. These advantages help airlines meet environmental objectives while enhancing network efficiency and maintaining competitiveness in increasingly sustainability-focused markets. However, it is important to note that these improvements have stalled since 2024 because of a historic backlog in deliveries of aircraft and engines.

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economics@iata.org