

PRESS RELEASE

UN Climate Change Conference 2024, Baku: atmosfair presents first post-pandemic climate ranking of the world's largest airlines

- **Global aviation remains behind in climate protection, failing to meet international climate targets**
- **Just a few airlines have managed to temporarily decouple CO₂ emissions from flight growth**
- **Major regional companies such as Delta, Lufthansa, and Air China have stagnated and lost ground to competitors**
- **Bio-kerosene has yet to make an impact, with new highly efficient aircraft currently setting the benchmark for sustainability**

Berlin, 20 November 2024: Global passenger aviation falls short of Paris climate targets. In 2023, the first undistorted year after the pandemic, airlines worldwide improved their carbon efficiency by just under 6% compared to the pre-pandemic year of 2019. This corresponds to an average annual efficiency increase of 1.4%. However, with air traffic volumes continuing to grow, an annual efficiency improvement of around 4% would be necessary to meet the Paris climate targets and at least halt the rise in CO₂ emissions. The recent progress falls short even of the International Civil Aviation Organization's (ICAO) target of a 2% annual CO₂ efficiency increase. These findings are part of the new Airline Index (AAI) presented by the German climate NGO atmosfair for the UN Climate Conference in Baku.

"Air traffic has nearly returned to pre-pandemic levels," said Dietrich Brockhagen, Managing Director of atmosfair. "Unfortunately, the same cannot be said for climate efforts of the industry. Airlines have further reduced their efforts compared to the already weak pre-pandemic decade and are now falling short even of ICAO's inadequate targets."

In 2023, global aviation achieved passenger load factors exceeding 80%, almost matching 2019 levels. However, progress in fleet modernization and route optimization has slowed. While flight volumes have yet to return to pre-pandemic levels, resulting in CO₂ emissions that remain about 10% below 2019 levels, the pace of climate-focused progress in aviation is insufficient.

"Climate turnaround in aviation is long overdue," Brockhagen emphasized, "Our data on CO₂ efficiency and projections for synthetic, CO₂-neutral fuels show the sector is acting too slowly on climate protection." The Airline Index focuses on CO₂ efficiency – emissions per passenger per kilometer – rather than absolute emissions, providing a more accurate measure of environmental impact independent of distortions caused by the pandemic.

New Aircrafts Boost Efficiency but Adoption Lags

The AAI highlights that newer aircraft models like the Boeing 737MAX-8, Airbus A350-1000, and A321neo consume less than 3.5 liters of kerosene per passenger per 100 kilometers on long-haul routes. These models set a higher benchmark for CO₂ efficiency, thus, airlines with older fleets or minimal fleet upgrades perform poorly in the index. No airline has a fleet dominated by such new aircraft; consequently, none achieves the top efficiency class A. Only two airlines manage to reach class B, out of a total of seven efficiency classes (A–G).

Big airlines fall back

Some of the biggest airlines in their respective regions worldwide have merely stagnated in CO₂ efficiency since the pandemic. This means that they fall back in the ranking, since the rest of the

industry at least improved carbon efficiency slightly. This is the case i.a. for Delta Airlines (USA), Lufthansa (Germany) and Air China, with Delta slipping from 45th to 87th place (class F), Lufthansa dropping from 66th to 97th place (class F), and Air China falling from 41st to 75th place (class F), respectively.

In contrast, LATAM, a Chilean-Brazilian airline, leads the major net carriers with a modern fleet and high load factors, achieving 82 out of 100 efficiency points and ranking 4th overall. Within the EU, Spanish airlines Iberia (12th place, 78 points) and Air Europa (18th place, 76 points) rank among the most efficient. Globally, 12 European and seven Chinese airlines are among the top 50 in CO₂ efficiency.

Low Carbon Kerosene Remains Marginal

The Airline Index also takes into account the use of alternative aviation fuels, such as kerosene made from used cooking oil, which emits significantly less CO₂ than fossil kerosene. However, such alternative kerosene accounts for only about 1% of total kerosene consumption of an airline, limiting its impact. Only one airline improved its positioning in the overall ranking by two places through the use of bio-kerosene.

The ICAO's CORSIA agreement allows airlines to offset growing CO₂ emissions through external carbon offset projects. However, the aviation industry has yet to demonstrate how it will align with the Paris Agreement's goal of achieving carbon neutrality after 2050 by reducing its CO₂ emissions.

Low-cost carriers are evaluated separately in the AAI because they often benefit from subsidies and convert these into low ticket prices, leading to more flight kilometers and associated emissions. While four low-cost airlines achieved efficiency class B, most fall into classes C and D.

Structure, Data, and Methodology of the AAI

The Atmosfair Airline Index evaluates the CO₂ efficiency of more than the world's 200 largest airlines, covering around 92% of global aviation. The calculations are based on the most recent data available from the global aviation industry in 2023.

Airlines are awarded 0 to 100 efficiency points across short, medium, and long-haul routes, enabling passengers to choose the most climate-friendly options. Businesses with frequent travel needs can also leverage the index to reduce CO₂ emissions and costs by selecting more efficient airlines.

The index bases its calculations on CO₂ emissions per passenger kilometer, considering aircraft type, engines, winglet use, seating, cargo capacity, and flight utilization. Data sources include international organizations such as ICAO and IATA, as well as aviation industry services and engineering models.

The index reveals significant differences in fuel efficiency among airlines, with emissions per passenger kilometer varying by a factor of more than two for the same route. Airlines operating modern fleets optimized for specific routes, with high seat density and effective utilization, achieve the best results.

Global Agreements and Targets

To meet the Paris Agreement's 1.5°C target from 2015, global CO₂ emissions must peak by 2030 and decline rapidly thereafter. However, air traffic is not directly regulated under the Paris Agreement. ICAO's 2016 climate program, CORSIA, has begun its first phase in 2024, and the organization has set a goal of improving fuel efficiency by 2% annually at the 37th general assembly in 2010.

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