

2023

Supporting
European
Aviation



EUROCONTROL

EUROPEAN AVIATION OVERVIEW

2023

AVIATION
INTELLIGENCE+



Thursday 18 January 2024

2023 at a glance

10.2 million flights, +10% vs 2022 (92% of 2019).

34,367 peak daily flights on 7 July 2023.



- Intra-European traffic **8%** up on 2022
- Europe-Rest of the world **18%** up
- Low-cost carrier flights **21%** up
- Mainline carrier flights **10%** up.



9 million tonnes more CO₂ emissions (+12%) than in 2022 for intra-European flights.



€9.1 billion en-route charges billed:
€1.5 billion more than in 2022
€1.2 billion more than in 2019.



17.7 min/flight of departure all-causes delay (Jan-Nov), relatively stable vs 2022 (+1.8%) but higher than in 2019 (+4.7 min/flight).

71.0% arrival punctuality for network scheduled flights:
0.3pp lower than in 2022, 7.1pp lower than in 2019.



Fuel prices


The jet fuel price averaged \$2.66/gallon, -20% vs 2022.




Almost all States were up compared to 2022. However, there was a very wide variation between States, with South-Eastern Europe growing the fastest.

 **5,290** daily flights in the UK (+13% vs 2022)

 **4,616** daily flights in Spain (+9%)

 **4,532** daily flights in Germany (+7%)


 **3,999** daily flights in France (+7%)


 **3,500** daily flights in Italy (-20%).

Leading aviation groups:

 Ryanair Group **2,813** daily flights (+11% vs 2022)

 Lufthansa Group **2,583** daily flights (+14%)

 IAG **2,167** daily flights (+15%)

 Air France-KLM Group **1,787** daily flights (+8%)

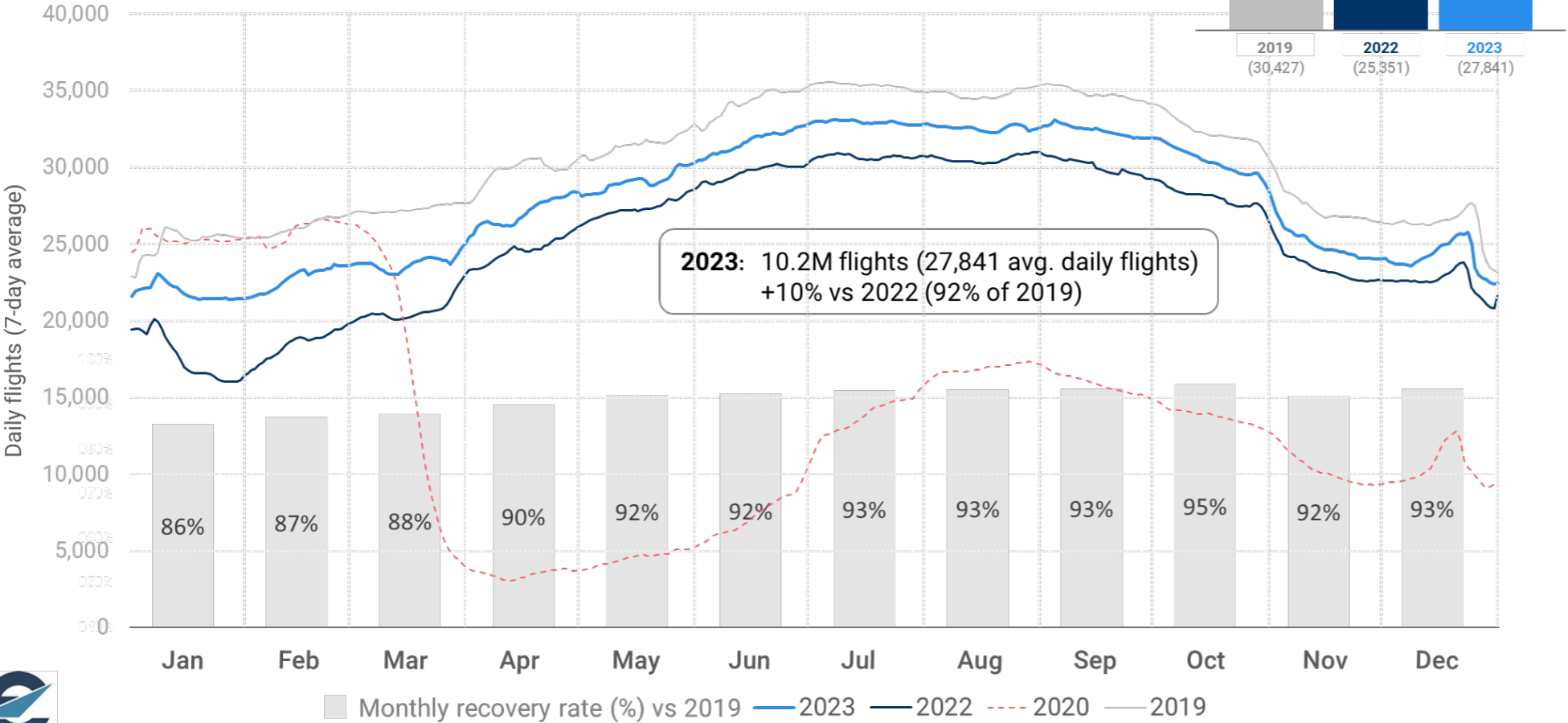
 easyJet Group **1,477** daily flights (+11%).

Executive Summary

- ➔ 2023 recorded **10.2 million flights, +10%** compared to 2022. The number of European flights has shown a **continued recovery** since the end of the COVID-19 outbreak, with **volumes strengthening** during the **summer**.
- ➔ When compared to pre-COVID levels, **European flights** in 2023 closed at **92% of 2019** levels. The recovery rate for 2023 was in line with EUROCONTROL's latest 7-year traffic forecast. The 2023 Winter Schedules (Nov. 23) were lower than anticipated by airlines, and the expected number of flights was reduced owing mainly to non-operated schedules.
- ➔ In 2023, some **States** recorded **high increases** in the number of arrival/departure flights (e.g. Georgia, Armenia and Azerbaijan: owing to an increased number of flights from/to the Russian Federation). States along the **South-East European axis** were very **busy** too (e.g. the Balkans) thanks to sustained traffic demand from/to the North-West European States. **Summer 2023** Arrivals/departures were **higher** than in 2019 in some areas, for example **Türkiye** and **Greece**.
- ➔ The number of **passengers** (ACI – passenger movements through main airports) at top 40 airports over the January to November 2023 period is estimated at **1.19 billion**, a **+21% increase** on **2022**. The recovery (same sample) in terms of flights showed **94% of 2019** levels. A significant proportion of aircraft operators are operating above their 2019 levels in terms of seats (hence passengers, as load factors are high), mainly thanks to new aircraft models (e.g. NEOs).
- ➔ **Ukraine's airspace** has remained **closed** since February 2022, with neighbouring airspace absorbing more traffic (and diverted flights overloading the busy South-East axis). The start of the **conflict** in Israel (October 2023) has affected various flows that were unable to overfly the zone. **Geopolitical crises** have also had an impact on flows in Armenia, especially **overflights**.
- ➔ **Arrival punctuality** for the network in 2023 was **71.0%**, slightly below (-0.3 percentage points (pp)) 2022 levels, and well below 2019 (-7.1pp).
- ➔ **En-route ATFM delays** recorded **1.8 minutes per flight** for 2023 as a whole, which is **stable vs 2022** despite an **increased number of flights**. **Strikes (ATC)** in France during the first half of the year, and an increase in **extreme weather** events during the summer months, had a **significant impact** on the network.
- ➔ Back in 2022, **military 'activate' temporary areas** had increased between 3 and 12 times vs 2021; the situation remained unchanged in 2023.
- ➔ The **jet fuel price** in 2023 averaged \$2.66/gallon, **easing** on **2022 prices** (20% lower).
- ➔ For **2024**, the number of flights is **expected** to reach **98% of 2019** levels in our **base** scenario, with some months potentially recording the same or higher numbers of flights compared to 2019.
- ➔ The **adoption** of the **RefuelEU** set of measures in 2023 will lead to **more SAF becoming available** in Europe (starting with 2% by 2025).

Overall traffic evolution

EUROCONTROL Network Traffic (all flights including overflights)



- 2023 recorded a slow start in terms of the number of flights (86-88% of 2019 levels).
- Between February and June, the number of flights in the network was negatively affected by many days of ATC industrial action in France.
- However, the volume of flights started to pick up from May onwards (92% of 2019 levels) with the start of the Summer period. The peak day for the year was recorded on Friday 7 July.
- The number of flights reached up to 95% of 2019 levels in October, the highest recovery rate overall since 2020.
- With the start of the winter season, some aircraft operators have started to cut capacity. In addition, some weather issues (leading to cancellations) and the impact of the various conflicts has hindered the recovery, with traffic reverting to 92-93% of 2019 levels.
- The blip in December relates to the normal calendar effect of the Christmas period.

State traffic

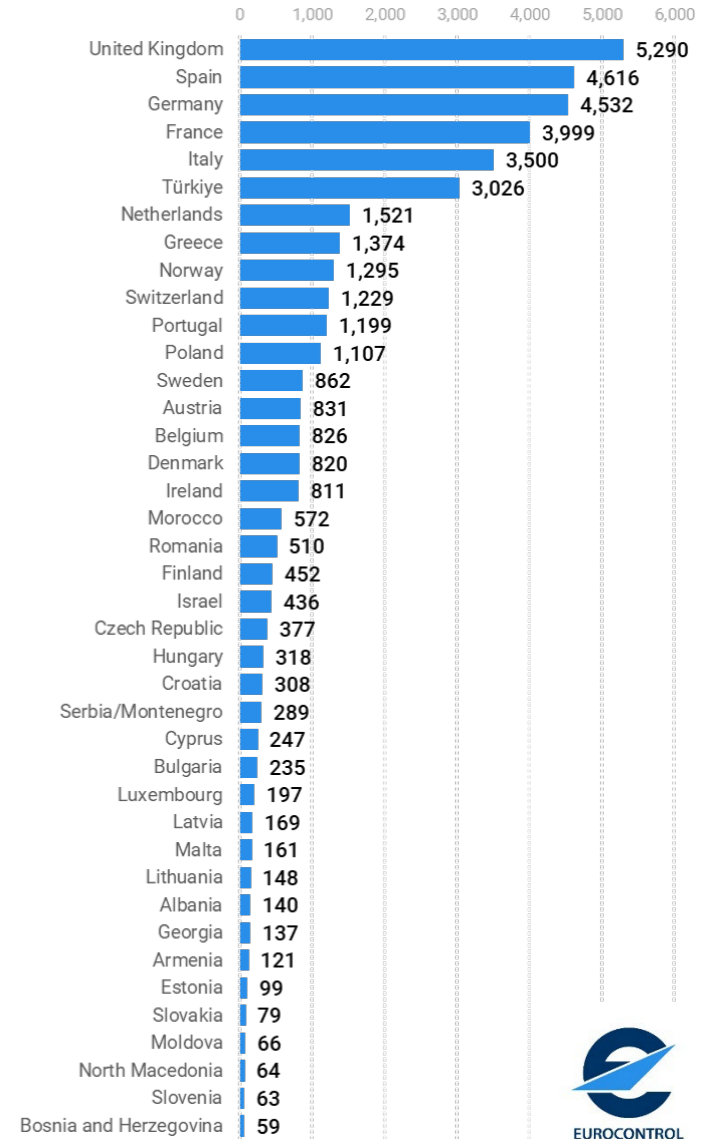
Departures and arrivals

No.	Country	Average daily flights	% prev year	% 2019
1.	United Kingdom	5,290	↑ +13%	↓ -10%
2.	Spain	4,616	↑ +9%	↓ -0%
3.	Germany	4,532	↑ +7%	↓ -20%
4.	France	3,999	↑ +7%	↓ -7%
5.	Italy	3,500	↑ +11%	↓ -3%
6.	Türkiye	3,026	↑ +16%	↑ +8%
7.	Netherlands	1,521	↑ +7%	↓ -9%
8.	Greece	1,374	↑ +8%	↑ +9%
9.	Norway	1,295	↑ +2%	↓ -8%
10.	Switzerland	1,229	↑ +9%	↓ -7%

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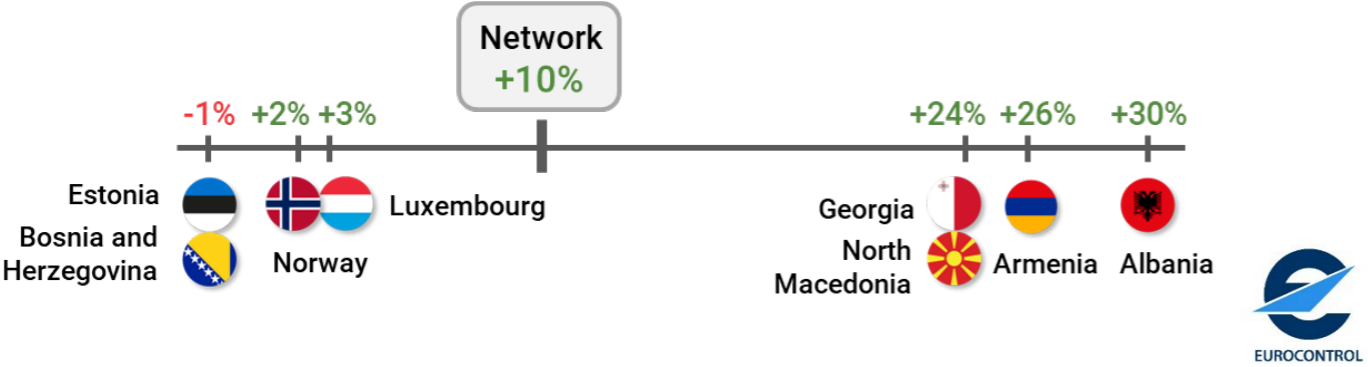
Average daily dep/arr per State - 2023



- The top 10 States in aggregate recorded 9.5% more flights (arrivals and departures) compared to the previous year.
- The **United Kingdom** was the State recording the highest average number of daily flights in 2023 (5,290/day), a 13% increase on 2022. The second busiest State in 2023 was **Spain** (4,616 flights/day, +9%), followed by **Germany** (4,532 flights/day, +7%).
- Compared to 2022: **Germany** and **Spain** have swapped places. Germany has recovered more slowly due to the weakness of internal flights (remaining stable in Germany at just +0.4% in 2023 vs 2022). Domestic flows in Germany are at 63% of 2019 levels, whereas Spain is at 100%. Hub activity in Germany is still depressed compared to pre-COVID levels.
- **Türkiye** posted the highest increase (+16%), as part of the dynamic **South-East axis** flows, owing to **tourist flights**, the **continuing expansion of iGA Istanbul Airport** and the **shift** of some **Russian flights** via **Türkiye**.
- Two States within the top 10 are recording traffic above 2019 (**Türkiye** +8% and **Greece** +9%), and one State is very close to its 2019 level (**Spain**). All three States have been boosted by tourism. The seven remaining States are still between 20% (**Germany**, owing to a drop in internal demand with a shift to rail or reduced business travel by air) and 3% (**Italy**) below pre-COVID levels.

State traffic variation

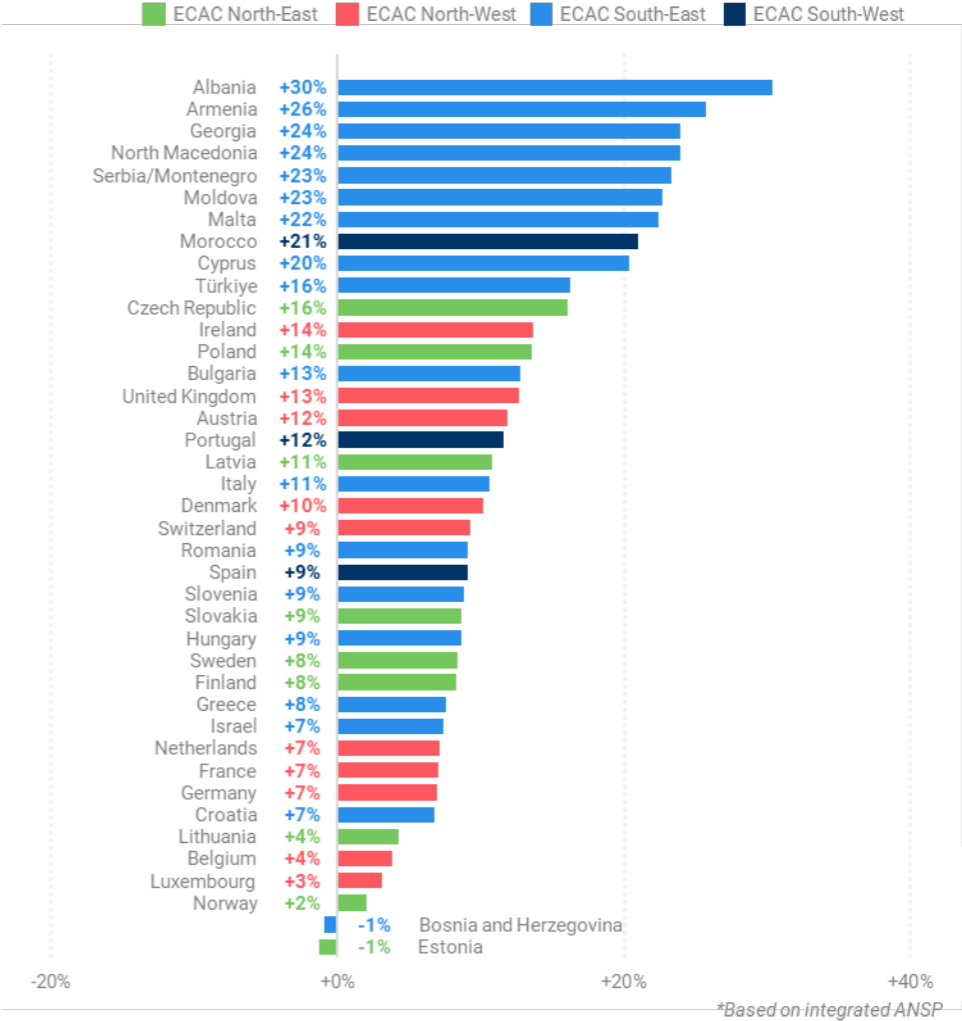
States - Top 3 +/- dep/arr variations 2023 compared to 2022



If we zoom into countries and regions, we see significant differences in performance and situation:

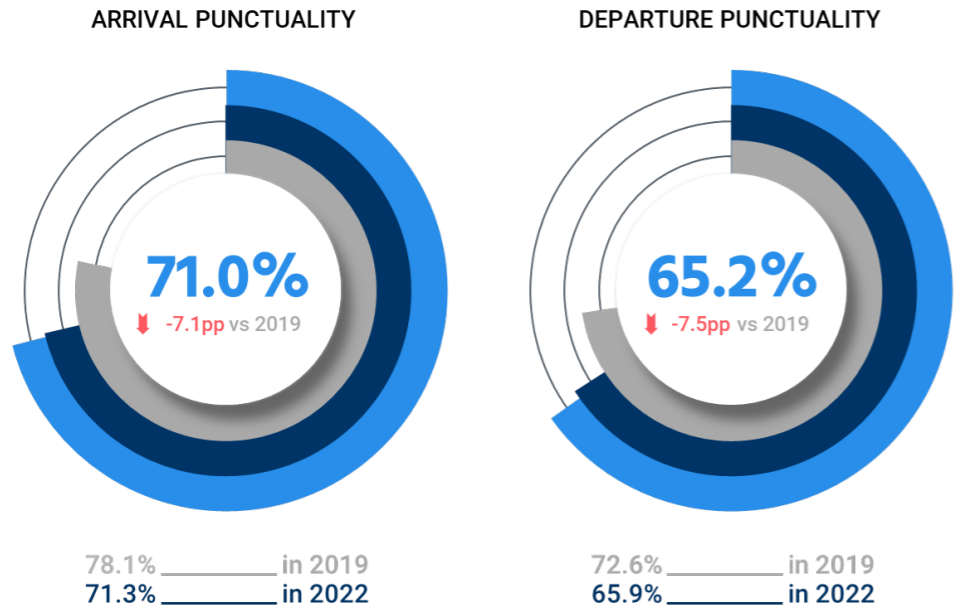
- ✈ Albania has experienced very high flight growth (+30%) due to the increased activity of Wizz Air in the country.
- ✈ As a side effect of the war in Ukraine, Georgia (+24%) and Armenia (+26%) have also experienced very high flight growth.
- ✈ As shown on the right-hand graph, South-East Axis States (the Balkans, North Macedonia, Malta, Romania, Bulgaria, Türkiye...) recorded mostly double-digit flight growth in 2023 compared to 2022.
- ✈ At the other end of the scale, Estonia (-1% in 2023, vs 2022) has been strongly affected by the war in Ukraine.
- ✈ Bosnia-Herzegovina is recording slightly less flights than in 2023 following high volumes in 2022 (Wizz Air expanded its operations there in 2022; these have now stabilised). Norway recorded modest growth in 2023 (+2% vs 2022); its domestic flows have slightly reduced (3% lower than in 2022, although already at 96% of 2019). This had an impact on overall growth as domestic flows account for more than half of all flights.

States - Traffic variation 2023 compared to 2022



Punctuality and all-causes delay

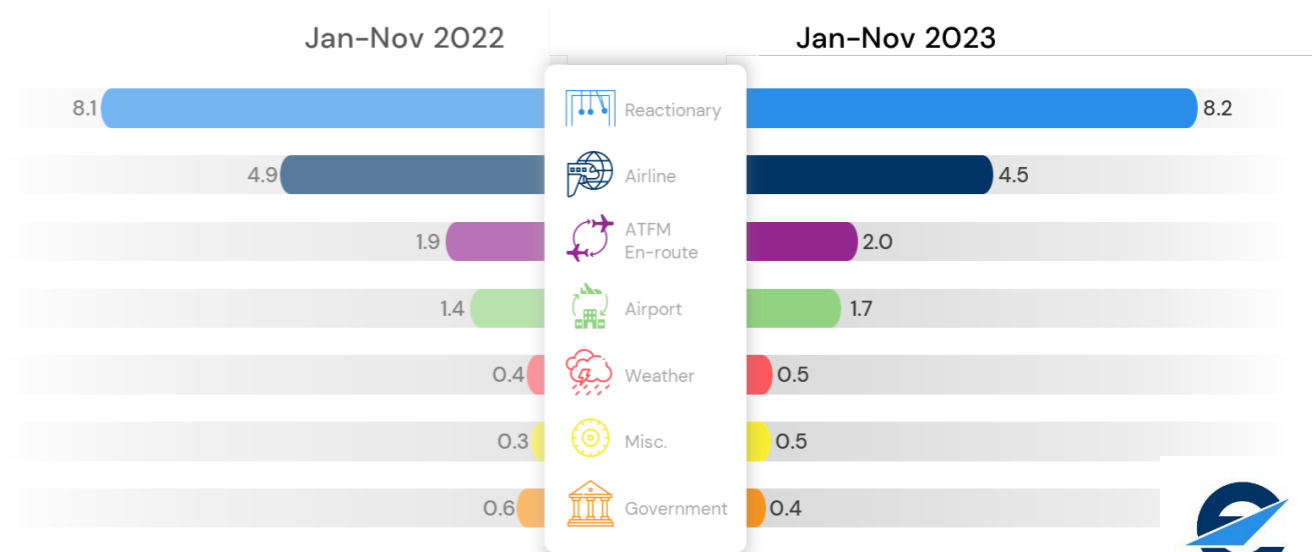
Punctuality (OTP15*) for all network scheduled flights - 2023



* Share of flights arriving/departing no later than 15 minutes after/before the scheduled time.

All causes delay drivers - Average delay per flight (min) on departure

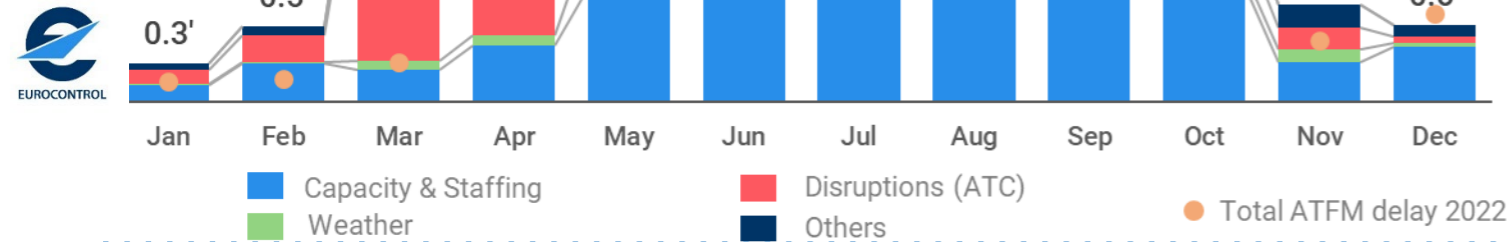
Jan-Nov 2022 and Jan-Nov 2023



- **Arrival punctuality** for the network in 2023 was **71.0%**, slightly below (-0.3pp) 2022, and well below 2019 (-7.1pp). **Departure punctuality** was at **65.2%** for the year, also lower (-0.7pp) than in 2022, and significantly lower (-7.5pp) than in 2019.
- Looking at **all-causes delay**, the average delay per flight was broadly stable in comparison to 2022. The total (all-causes) average delay per flight on departure amounted to 17.7 min/flight for the period January to November (vs 17.4 min/flight in 2022).
- Changes in 2023 include **higher en-route delays** (Hungarian airspace has seen more traffic and almost daily regulations due to the **unavailability of Ukraine airspace**). A series of **French ATC industrial actions** also affected the network in 2023, notably in April and May. However, despite the **increased numbers of flights**, overall ATFM delay remained relatively stable between 2023 and 2022.
- Some airports (e.g. Lisbon and London Gatwick) saw frequent aerodrome capacity regulations; the main disruptions at other major hub airports (iGA Istanbul, Amsterdam, Frankfurt, Heathrow and Munich) came from weather, with certain days seeing large disruptions in terms of ATFM delays and cancellations.

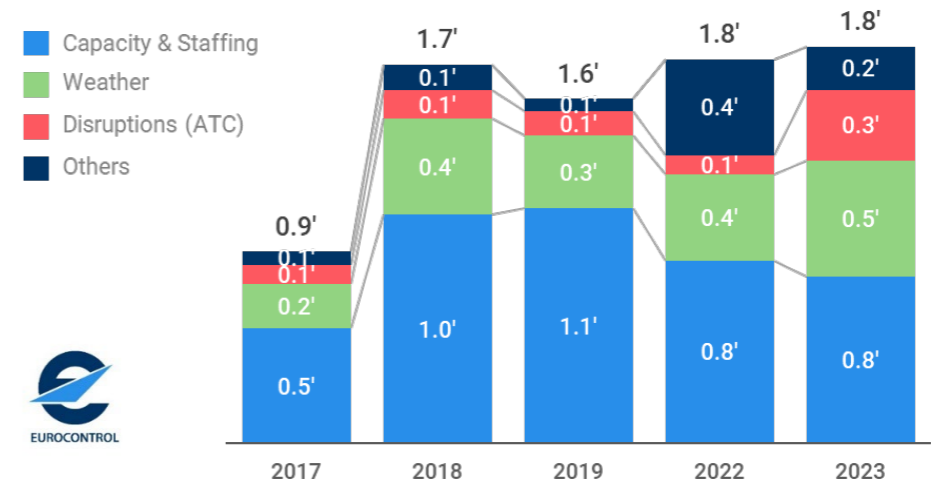
En-route ATFM delays

Monthly en-route ATFM delays per flight, per cause (in minutes per flight)

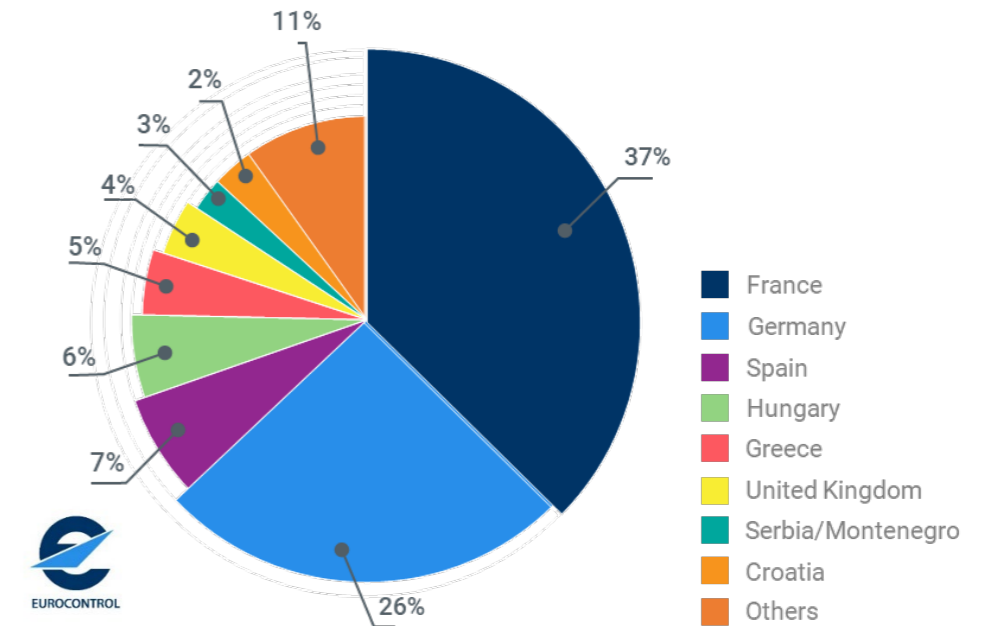


- ✈ In 2023, ANSPs provided extra capacity and flexibility – and also improved procedures for military operations – compared to 2022. Thanks to this, and despite the 10% traffic increase, capacity/staffing delays per flight remained similar to 2022 (0.8').
- ✈ However, ATC **strikes** in France (mostly during the spring) and a later increase in extreme **weather** events during the summer months had a significant impact on the network, keeping en-route ATFM delays per flight at 1.8' for 2023 as a whole, far above the desired levels.
- ✈ **France** and **Germany** accounted for almost two-thirds of all en-route ATFM delays. Although there were other compounding factors (strikes, weather, system implementations), capacity/staffing remained the main underlying issue generating delays.

Yearly en-route ATFM delays per flight, per cause (in minutes per flight)

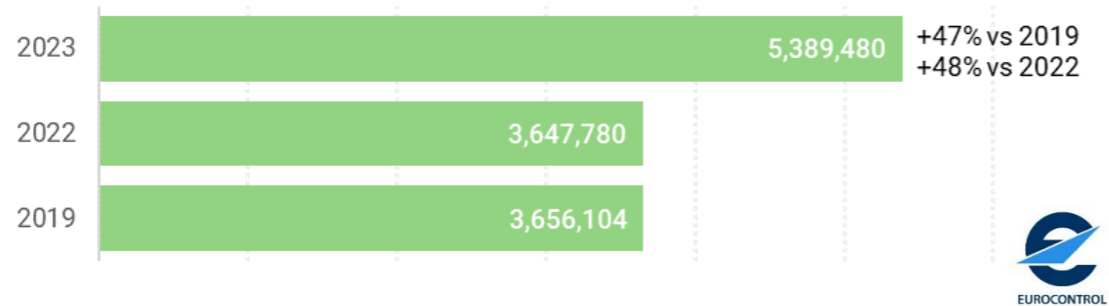


Share of en-route ATFM delays (% of minutes)

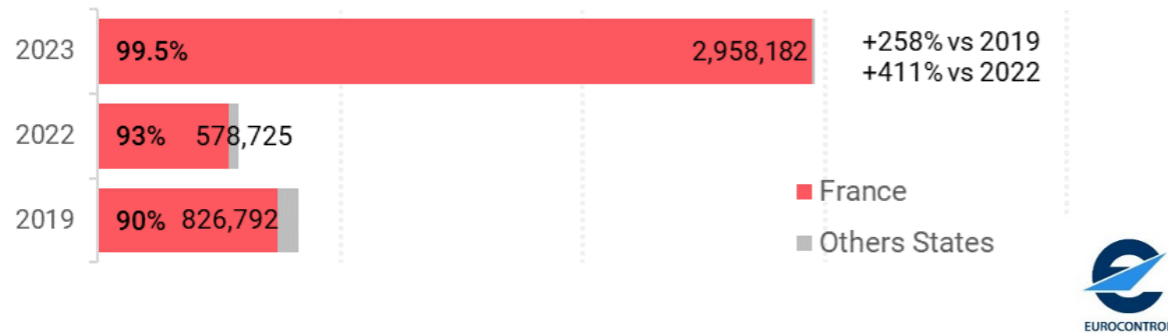


Specific events

Weather en-route ATFM delays (in minutes)



Strikes (ATC) en-route ATFM delays (in minutes)



In 2023 there were more frequent extreme **weather** events than in previous years:

- ➔ There were **43 days** in which more than 50% of ATFM delays on that day were attributed to weather issues, compared to 18 such days in 2022, and 11 in 2019.
- ➔ En-route ATFM weather delays were **48% higher** than in 2022, and 47% above 2019.
- ➔ Weather delays accounted for 29% of total en-route ATFM delays in 2023, compared to 22% in 2022, and 21% in 2019.

2023 also saw more frequent high-impact **strikes**, mostly in France:

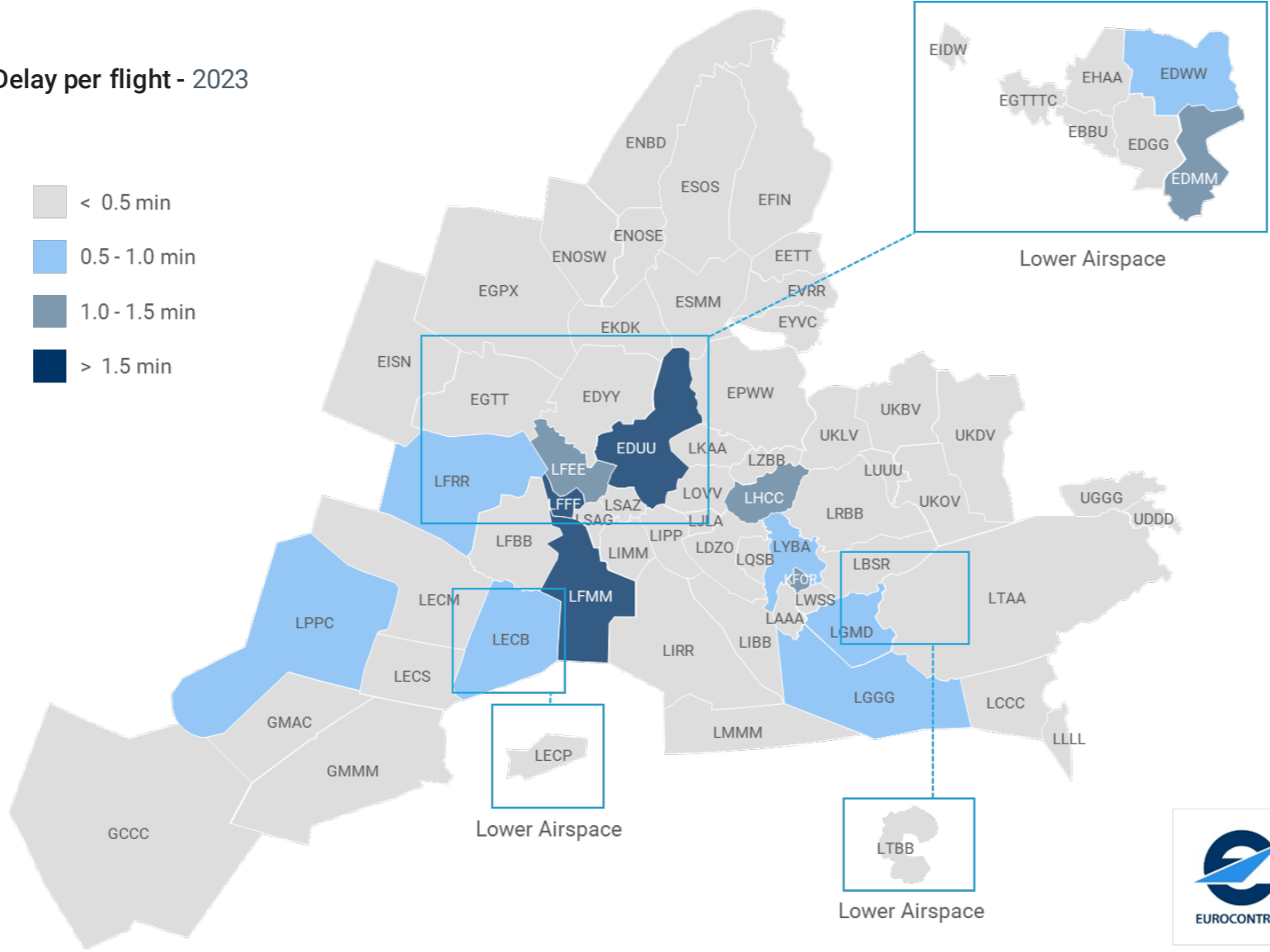
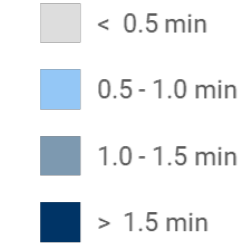
- ➔ There were **54 days** in which more than 50% of ATFM delays on that day were attributed to strikes, compared to 4 such days in 2022, and 9 in 2019.
- ➔ En-route ATFM delays due to ATC strikes were **4 times higher** than in 2022, and 2.6 times higher than in 2019.
- ➔ Almost all strike (ATC) related delays in 2023 (99.5%) took place in **France**.

Military operations were also frequent during 2023:

- ➔ Under the flexible use of airspace (FUA) concept, the military 'activate' temporary areas whenever they are needed for military operations. Once these areas are no longer needed, they are 'deactivated' and available again for unrestricted use by all operators.
- ➔ The total number of hours for which such areas were activated increased in 2022 between 3 to 12 times depending on the geographical area (the closer to Ukraine, the higher the increase).
- ➔ In 2023, the number of activation hours was at the same level as in 2022. Activations were more important in lower airspace than in upper airspace.

En-route ATFM delayed flights per Area Control Centre

Delay per flight - 2023



✦ Three ACCs finished the year with en-route ATFM delays per flight **higher than 1.5 min/flight**:

- **Marseille** (2.0 min/flight), mainly due to ATC strikes, which accounted for 41% of delays, and recurring capacity/staffing issues (39%)
- **Karlsruhe** (1.6 min/flight), mainly owing to capacity/staffing (62% of delays), compounded by weather issues (29%)
- **Paris** (1.6 min/flight), with ATC strikes as the main cause of delays (61%) (similar to Marseille), and capacity/staffing accounting for 19%.





✦ Four ACCs posted en-route ATFM delays per flight **between 1 and 1.5 min/flight**:

- **Reims** (1.4 min/flight), mostly due to recurring capacity/staffing (61% of delays)
- **Munich** (1.2 min/flight) mainly owing to a system (iCAS) implementation (68% of delays)
- **KFOR Sector** (1.1 min/flight), with 98% of delays due to capacity/staffing issues
- **Budapest** (1.0 min/flight) experienced severe weather issues (47% of delays), but also had to cope with increased demand due to the unavailability of Lviv FIR.



Aircraft operator traffic

Top 10 aircraft operators - 2023 average daily flights, compared to 2022 and 2019

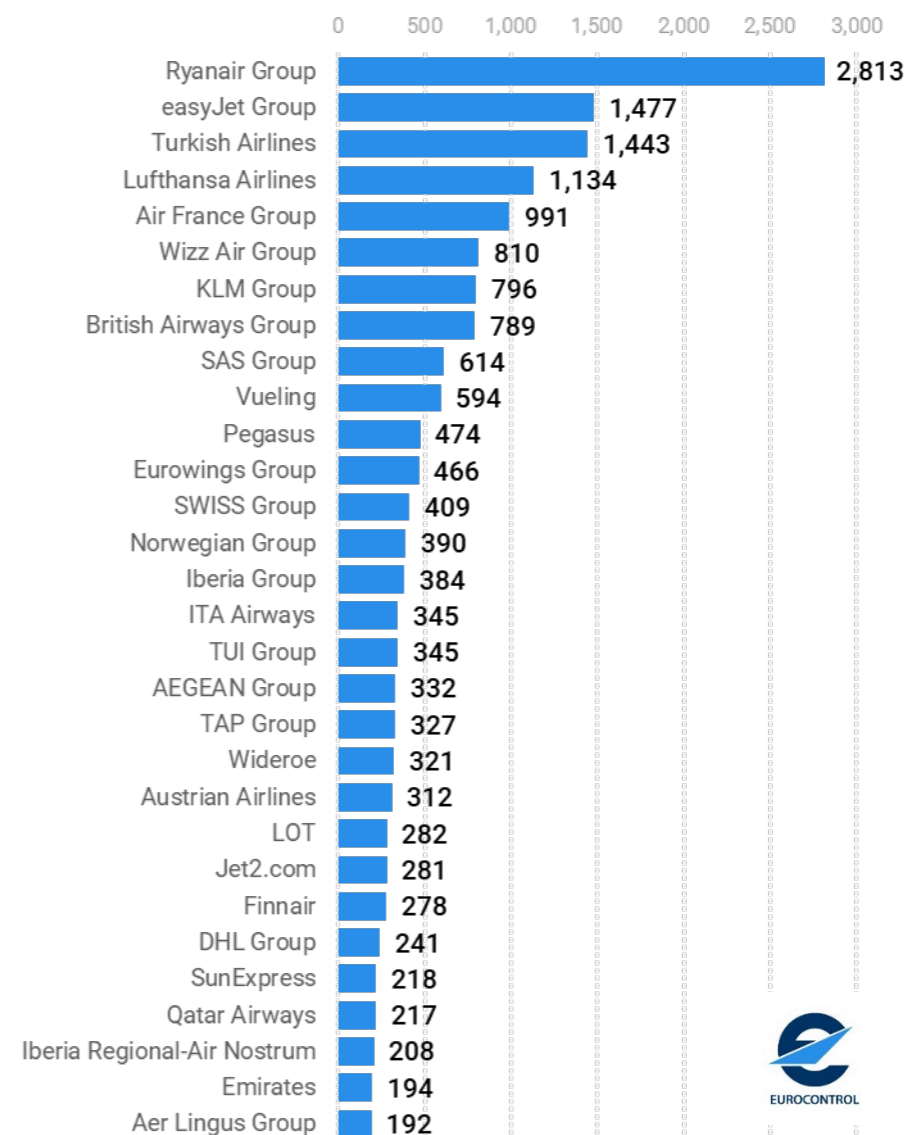
No.	Aircraft operator	Average daily flights	% 2022	% 2019
1.	 Ryanair Group	2,813	↑ +11%	↑ +21%
2.	 easyJet Group	1,477	↑ +11%	↓ -12%
3.	 Turkish Airlines	1,443	↑ +16%	↑ +8%
4.	 Lufthansa Airlines	1,134	↑ +7%	↓ -24%
5.	 Air France Group	991	↑ +4%	↓ -17%
6.	 Wizz Air Group	810	↑ +21%	↑ +37%
7.	 KLM Group	796	↑ +13%	↓ -7%
8.	 British Airways Group	789	↑ +23%	↓ -13%
9.	 SAS Group	614	↑ +16%	↓ -24%
10.	 Vueling	594	↑ +10%	↓ -1%

[See more](#)



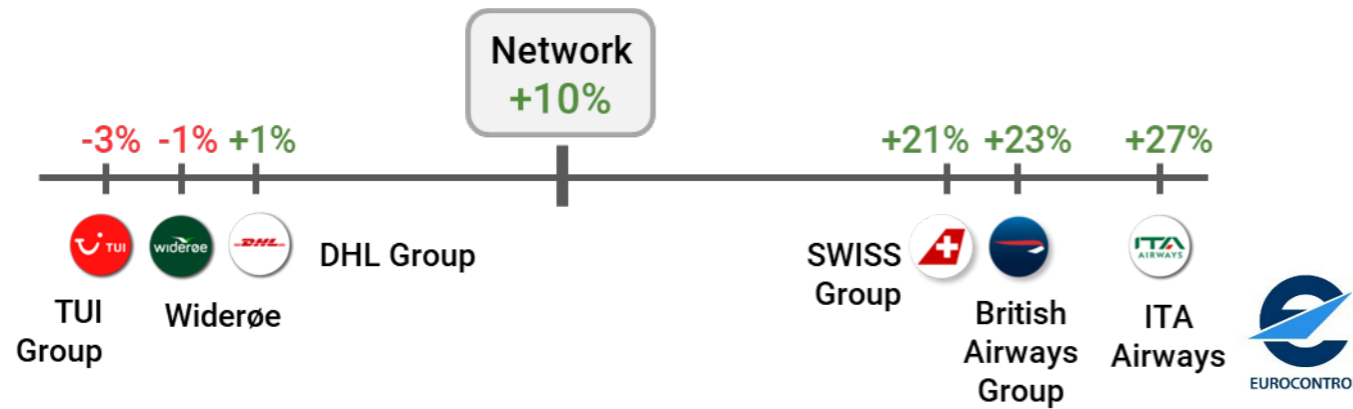
- ✈️ Ryanair finished in top position for the ninth year running with 2,813 daily flights. The group closed 2023 well above 2019 levels (+21%), showing traffic growth of 11% compared to 2022.
- ✈️ The 2023 top 10 operators are the same as in 2022. The only changes are Wizz Air overtaking KLM into 6th place, and SAS climbing to 9th and pushing Vueling into 10th.
- ✈️ As for the top 30 operators in 2023, there is only one change in composition with respect to 2022 - Emirates occupies now the 29th spot instead of Volotea, which is now just outside at 31st.
- ✈️ The largest position variations in the top 30 list were for ITA Airways, which climbed four places, and Emirates and SWISS both up three, whereas TUI dropped four positions and Widerøe went down three.

Top 30 aircraft operators - 2023 average daily flights



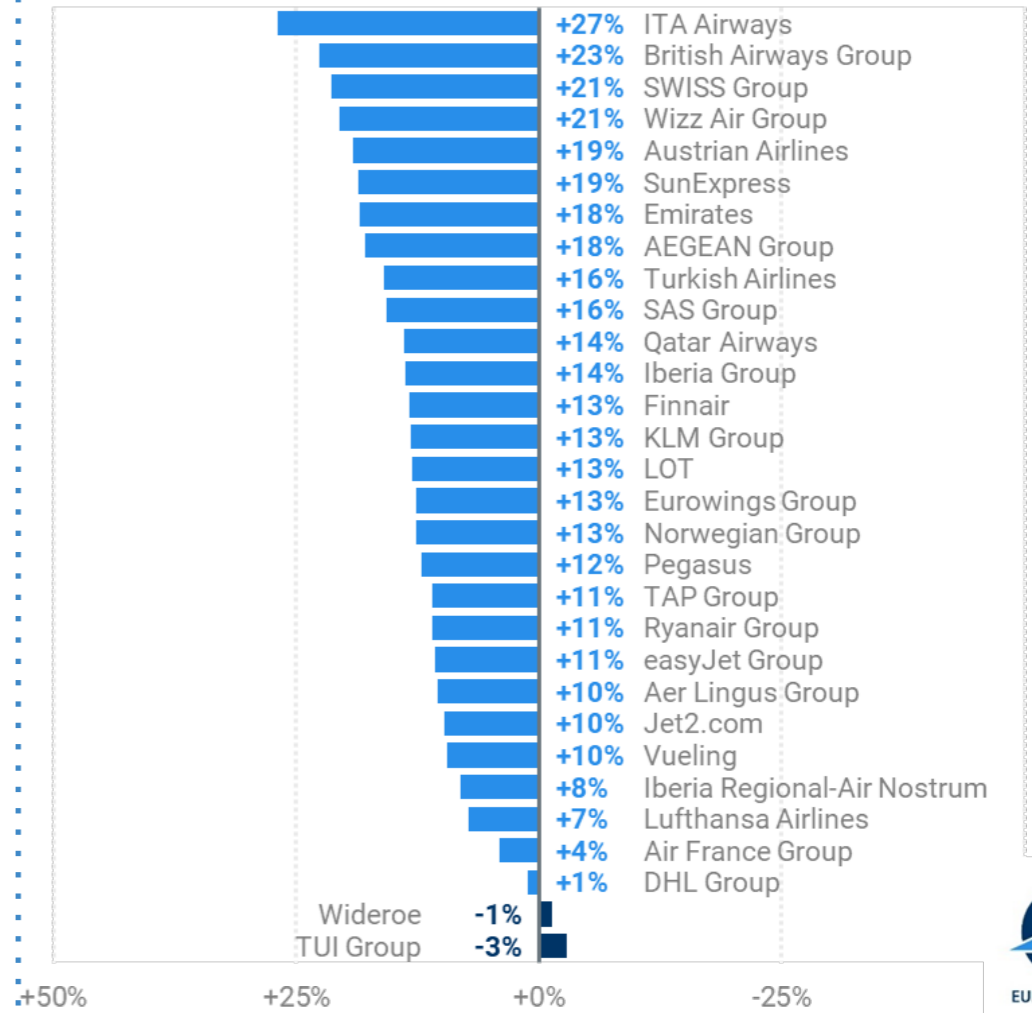
Aircraft operator traffic variation

Top 30 aircraft operators - Top 3 +/- traffic variations 2023 compared to 2022



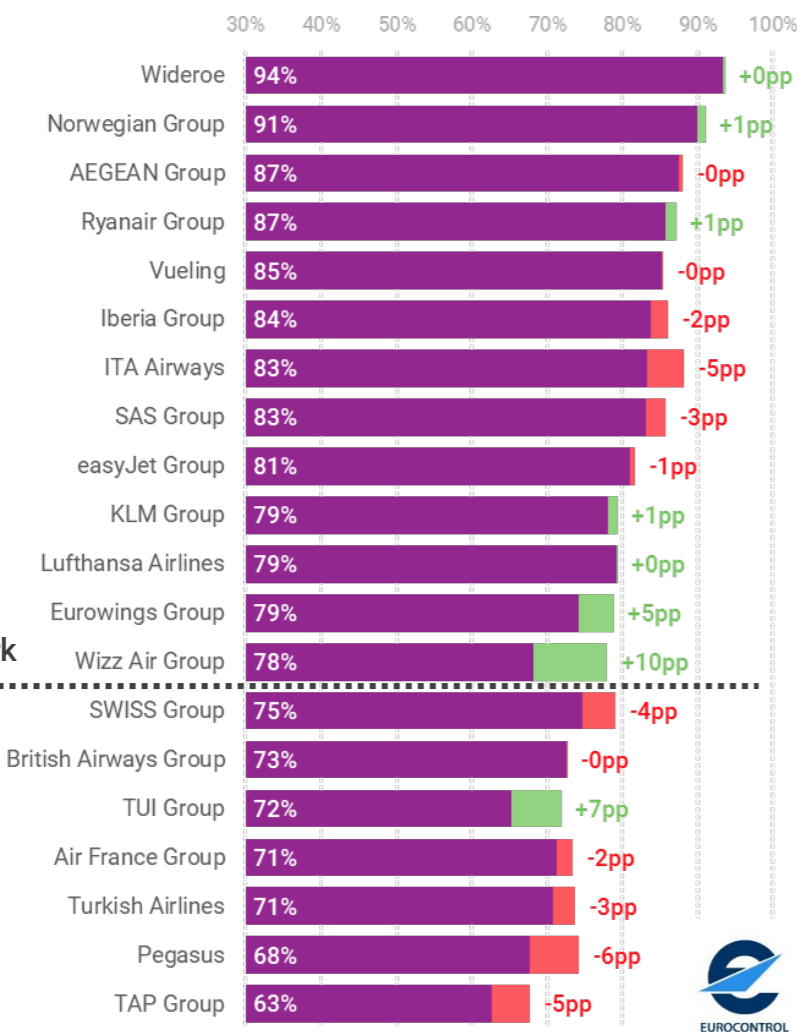
- ✈️ Despite Lufthansa and Air France posting the lowest growth vs 2022 in the top 10, **mainline operators generally posted higher growth rates than their low-cost counterparts**. Of the ten highest growth rates shown in the graph on the right, eight were recorded by mainline operators.
- ✈️ After starting operations in 2021, **ITA Airways** generally expanded in 2023 to post the largest increase among the top 30 operators (+27%). **British Airways** and **SWISS** recorded increases of 23% and 21% respectively, growing in almost all their traditional routes, but they are still at 87% and 89% respectively of their 2019 levels.
- ✈️ All top 30 airlines except **TUI** (-3% vs 2022) and **Widerøe** (-1%) posted increases with respect to 2022. **DHL** recorded the third lowest increase with +1%. It should be noted however that Widerøe had already reached its pre-pandemic traffic level in 2022 and DHL had largely surpassed it, so both had less ground to recover than other operators. TUI, however, is still at 83% of 2019 as their flows to/from Spain and Germany have not fully recovered.

Top 30 aircraft operators - Traffic variation 2023 compared to 2022



Aircraft operator departure punctuality (1st rotation)

1st rotation departure punctuality of top 20 aircraft operators (2023 vs 2022)

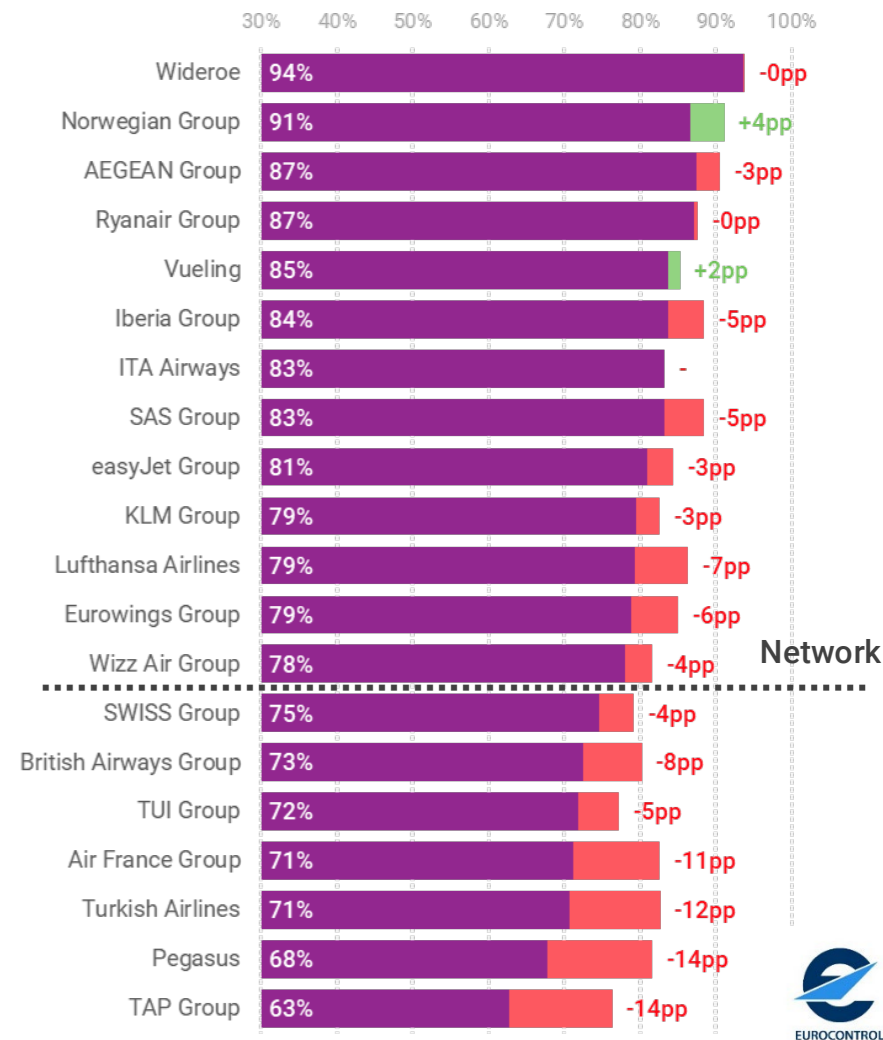


Network level:

Year	2019	2022	2023
Punctuality (%)	82%	77%	78%

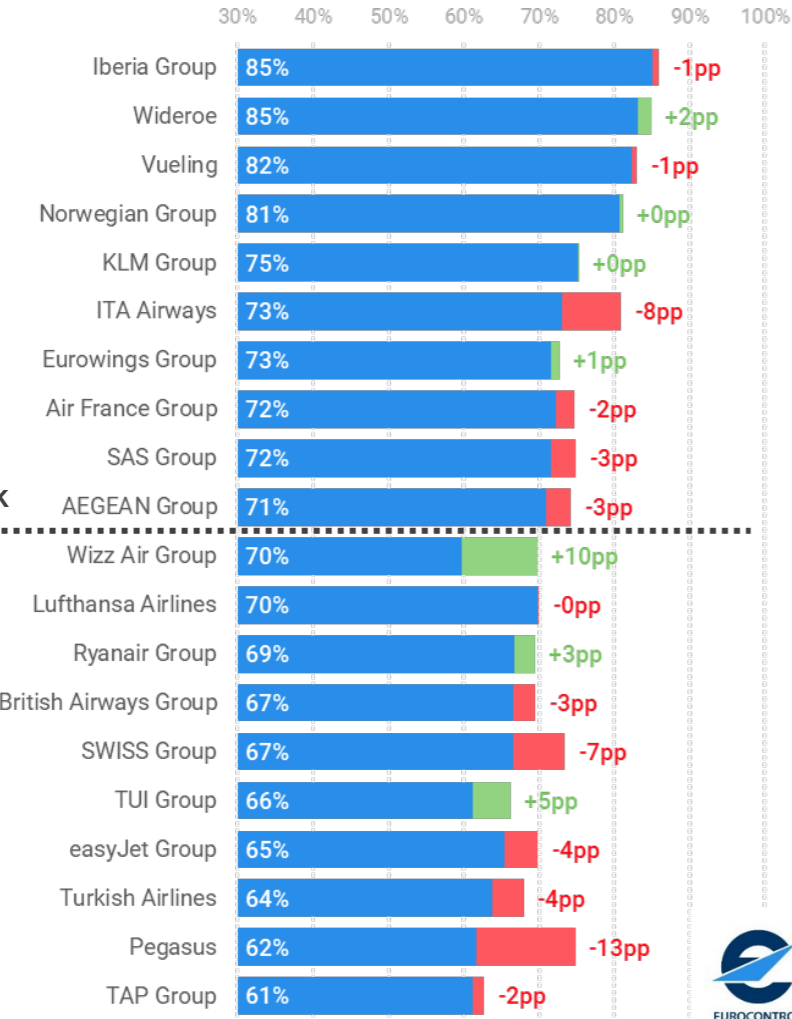
- ➔ During the **First Rotation** hours (03-09 AM), primary delays (i.e. non-reactionary delays) occupy the highest share.
- ➔ As **primary delays** during the First Rotation may cause a multiplier effect for reactionary delays throughout the rest of the day, it is crucial to minimise them.
- ➔ Improving first rotation punctuality was one of the top objectives of the EUROCONTROL Network Manager for 2023 and indeed, despite traffic being 10% higher, **first rotation departure punctuality improved by nearly 1pp**.
- ➔ If we compare the top 20 aircraft operators with 2022, the main **improvements** were for Wizz Air, TUI, Eurowings, KLM and Ryanair, whereas the main **deteriorations** were for Pegasus, TAP, ITA Airways, SWISS and Turkish.
- ➔ If we compare with 2019, however, we can see how most airlines' first rotation departure punctuality has deteriorated, with only Norwegian and Vueling showing improvements.
- ➔ Improving first rotation punctuality will continue to be play a major part in preparations for Summer 2024 traffic.

1st rotation departure punctuality of top 20 aircraft operators (2023 vs 2019)



Aircraft operator arrival punctuality

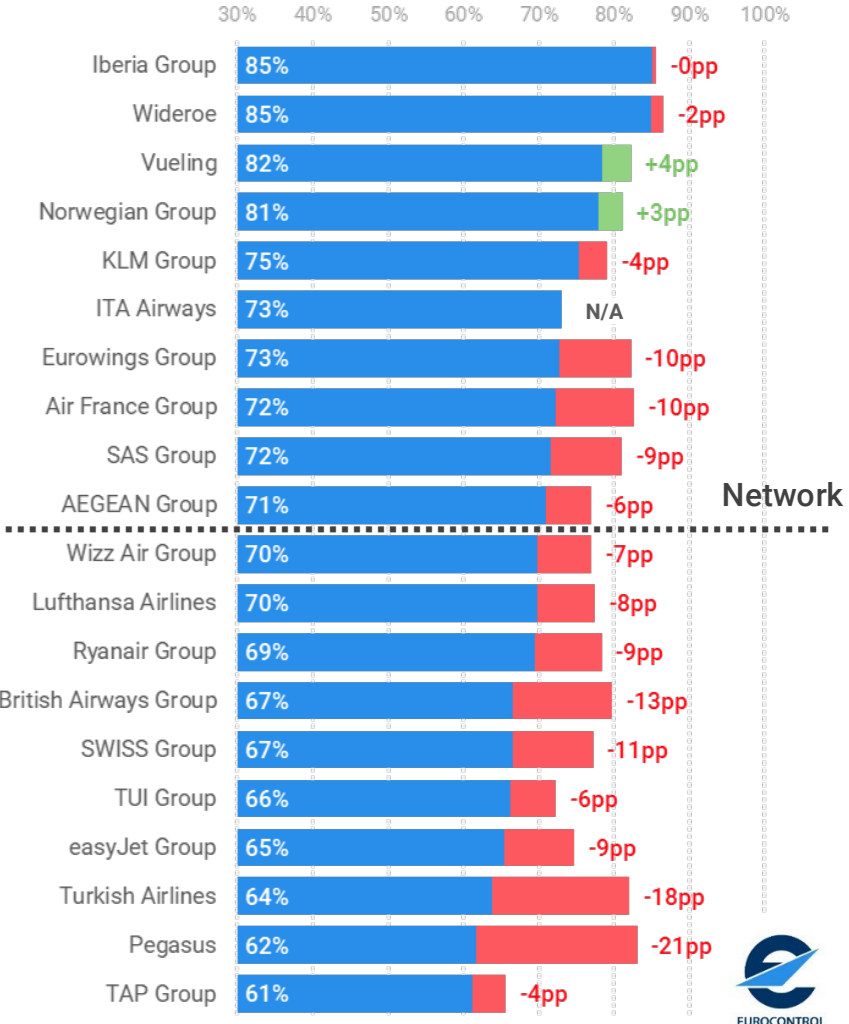
Arrival punctuality of top 20 aircraft operators (2023 vs 2022)



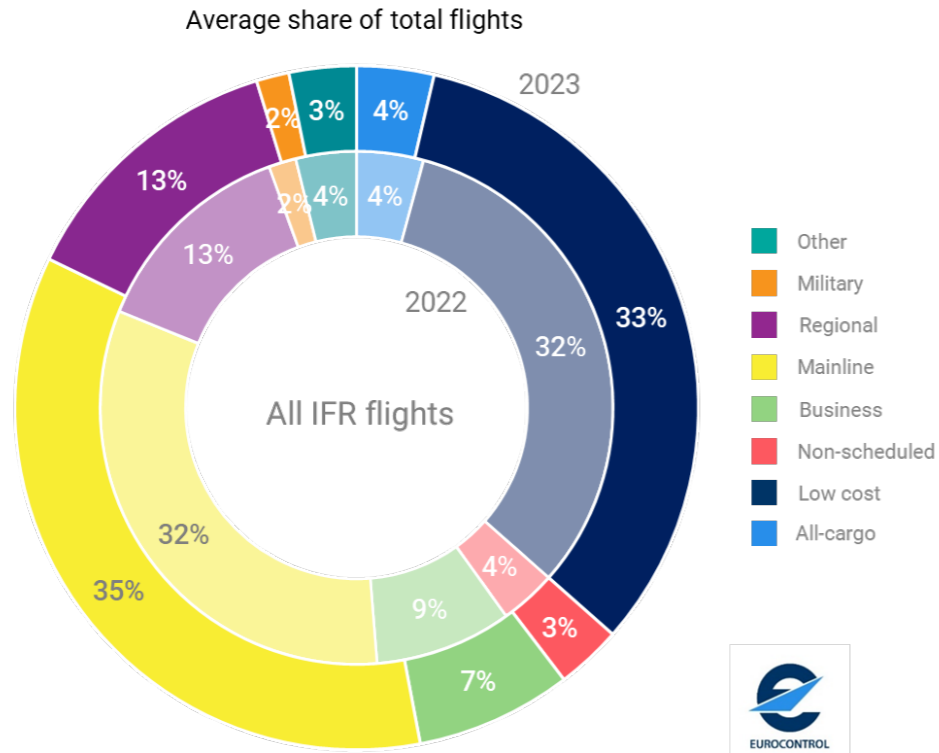
Network level:		
2019	2022	2023
78%	71%	71%

- ➔ Arrival punctuality is of particular significance given its importance in overall passenger experience.
- ➔ At network level, arrival punctuality in 2023 was very similar to 2022 (71%) despite 10% more traffic. However, we are still far from 2019 levels.
- ➔ Four operators posted arrival punctuality higher than 80% - Iberia (85%), Widerøe (85%), Vueling (82%) and Norwegian (81%). At the bottom of the list are TAP (61%), Pegasus (62%) and Turkish Airlines (64%).
- ➔ If we look at the variation compared to 2022, 7 operators improved their arrival punctuality whereas it deteriorated for 13. Wizz Air (+10pp), TUI (+5pp) and Ryanair (+3pp) recorded the largest improvements, whereas Pegasus (-13pp), ITA Airways (-8pp) and SWISS (-7pp) posted the largest deteriorations.
- ➔ If we compare with 2019, only Vueling and Norwegian show improvements, whereas Iberia posted a similar value. Arrival punctuality decreased for all other operators.

Arrival punctuality of top 20 aircraft operators (2023 vs 2019)



Market segments



No.	Market segment	Avg. flights	% 2022	% 2019
1.	Mainline	9,787	↑ +19%	↓ -11%
2.	Low Cost	9,154	↑ +12%	↓ -4%
3.	Regional	3,648	↑ +8%	↓ -20%
4.	Business	2,058	↓ -6%	↑ +9%
5.	All-cargo	1,016	↓ -5%	↑ +2%
6.	Other	886	↓ -9%	↓ -1%
7.	Non-Scheduled	863	↓ -4%	↓ -18%
8.	Military	432	↓ -1%	↑ +4%

- ➔ 2023 saw the **Mainline** segment recover strongly, increasing by +19% vs 2022. Mainline operators thus remained first in terms of market share (35%), which they shared with the Low-cost segment in the previous year (both 32% in 2022). However, Mainline is still 11% below 2019, mostly due to the weakness of domestic markets such as Germany, France and Scandinavia.
- ➔ **Low-cost** airlines also increased their market share to 33% (from 32% in 2022) with a traffic increase of +12%. They are, however, closer to their 2019 levels (-4%) than Mainline operators.
- ➔ The **Regional** segment maintained its market share of 13% as in 2022. However, despite posting an increase of +8%, it remains the segment farthest from its 2019 levels (-20%). Some traditional routes have seen lower demand due to a combination of factors – increased ticket prices, train/bus competition, government initiatives and environmental campaigns.
- ➔ After a strong 2022, **Business aviation** and **All-cargo** saw traffic decreases of 6% and 5% respectively. Business aviation lost 2pp of market share (from +9% in 2022 to +7%) whereas All-cargo kept its 4% market share stable.
- ➔ The **Non-scheduled** segment (+3% of all flights) recorded a 4% decline vs 2022 and is 18% below 2019, impacted by the cessation of flights to/from Russia and, more recently, Israel.
- ➔ Due to the ongoing conflicts, **Military** flights remained at similar levels compared to 2022.

Airport traffic



Top 10 airports

2023 average daily dep/arr, vs to 2022 and 2019

[See more](#)

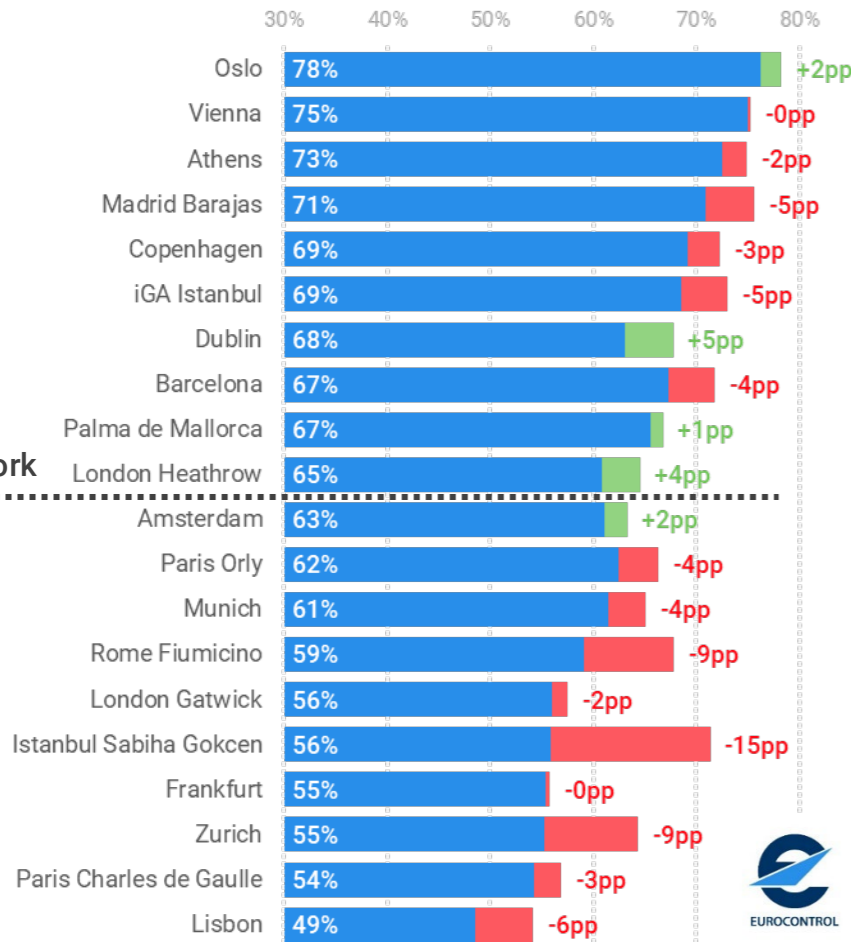
No.	Airport	Avg. daily dep/arr flights	% 2022	% 2019
1.	iGA Istanbul	1,375	↑ +19%	n/a
2.	Amsterdam	1,255	↑ +10%	↓ -10%
3.	London Heathrow	1,251	↑ +20%	↓ -4%
4.	Paris Charles de Gaulle	1,247	↑ +11%	↓ -10%
5.	Frankfurt	1,179	↑ +13%	↓ -16%
6.	Madrid Barajas	1,066	↑ +11%	↓ -9%
7.	Barcelona	874	↑ +13%	↓ -7%
8.	Munich	821	↑ +6%	↓ -28%
9.	Rome Fiumicino	730	↑ +25%	↓ -14%
10.	London Gatwick	704	↑ +18%	↓ -10%



- ➔ **iGA Istanbul** finished the year in top position for the second year in a row with 1,375 average daily flights. It established a new airport network record with 1,684 flights on 22 June 2023.
- ➔ **Amsterdam** edged Heathrow for the second spot with 1,255 daily flights, 10% higher than in 2022.
- ➔ **London Heathrow** climbed two positions compared to 2022, finishing third with an impressive 20% increase and 1,251 daily flights.
- ➔ **Paris CDG** and **Frankfurt** complete the top five with 1,247 and 1,179 daily flights respectively.
- ➔ Back in the top 10 is **Rome Fiumicino** (9th) with the highest traffic increase of the top 10 airports compared to 2022 (+25%), bumping Palma de Mallorca out of the list (now 15th).

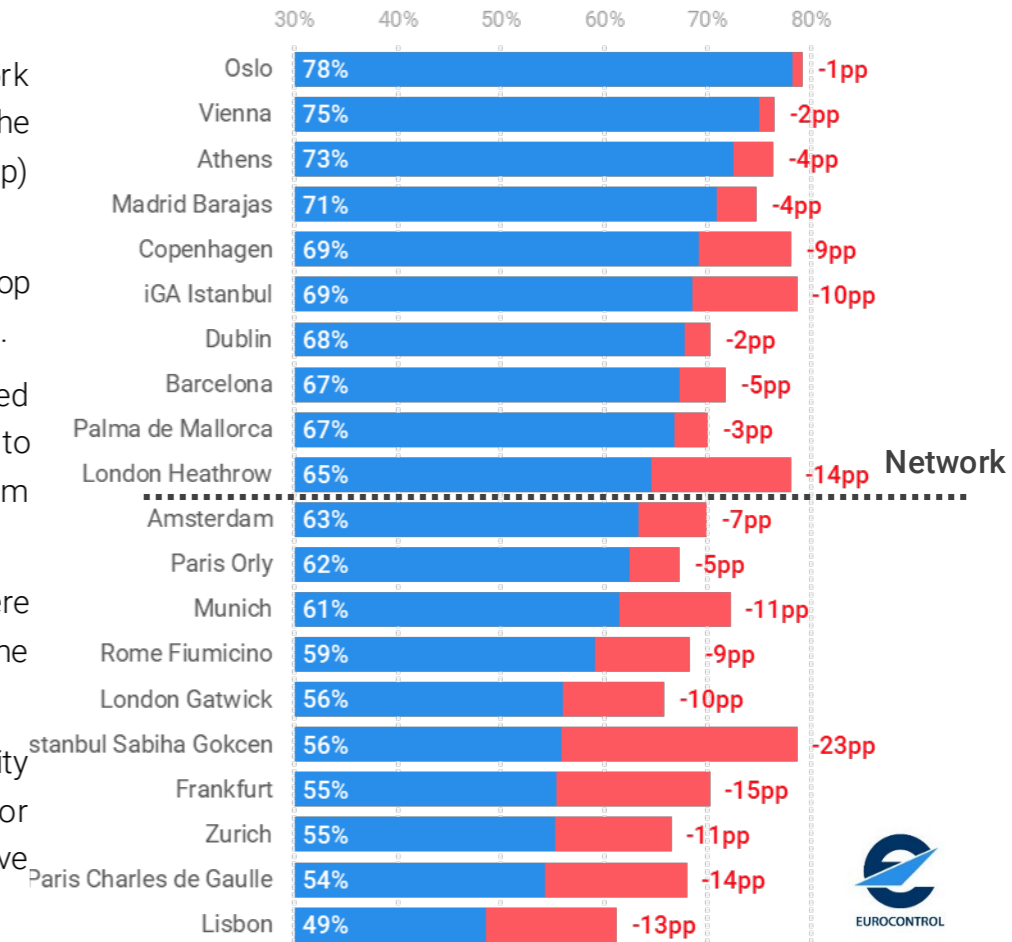
Airport departure punctuality

Departure punctuality of top 20 European airports (2023 vs 2022)



Network level:		
2019	2022	2023
73%	66%	65%

Departure punctuality of top 20 European airports (2023 vs 2019)

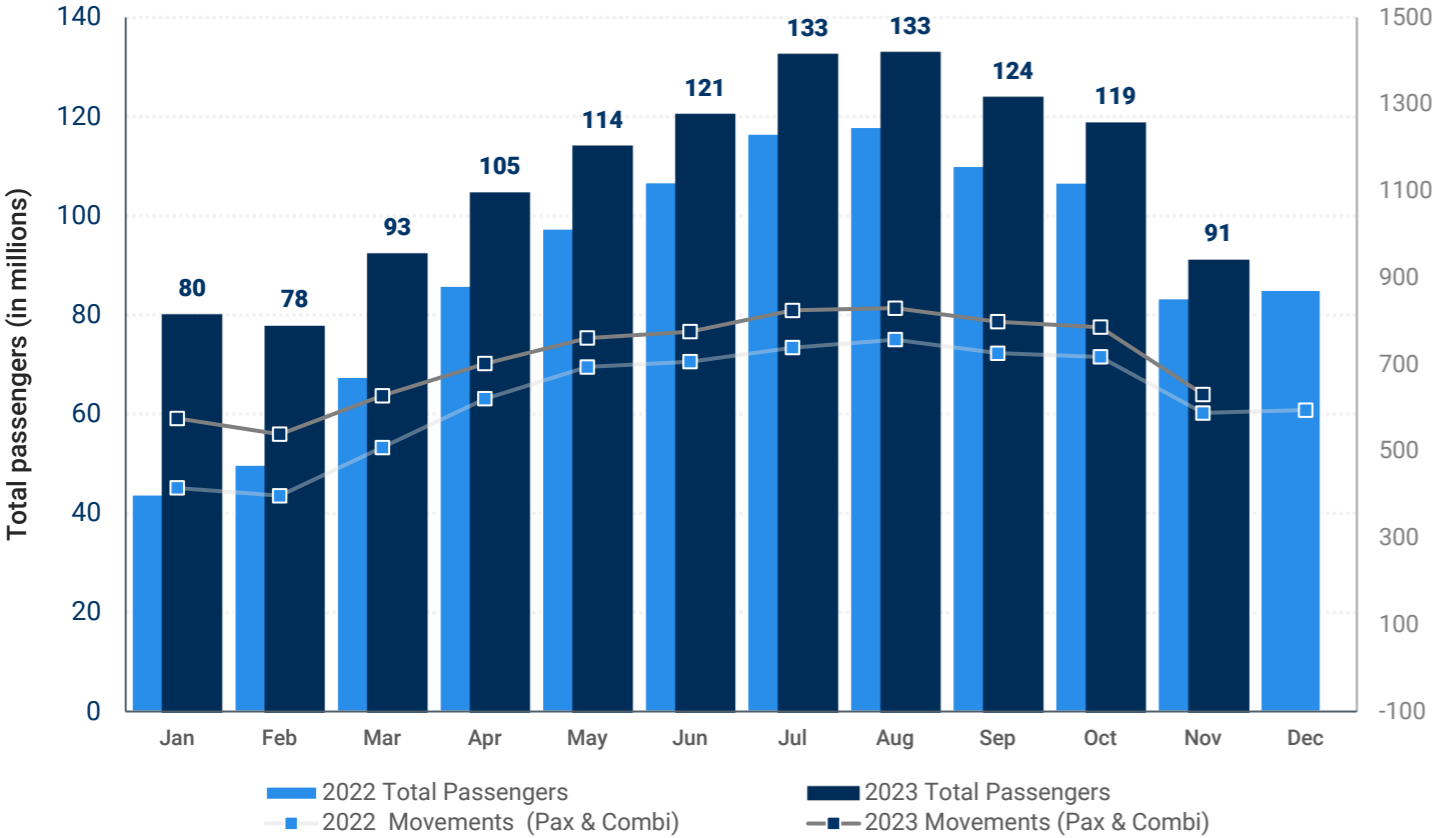


- ✈️ Departure punctuality for all airports in the network in 2023 was 65%, 0.7pp worse than in 2022. The deterioration is much more significant (-7.5pp) when comparing with 2019.
- ✈️ The evolution of departure punctuality for the top 20 airports is slightly worse than at network level.
- ✈️ In 2023, only five out of 20 airports posted departure punctuality **improvements** compared to 2022: Dublin (+5pp), Heathrow (+4pp), Amsterdam (+2pp) and Oslo (+2pp).
- ✈️ The largest **deteriorations** compared to 2022 were recorded at Istanbul Sabiha Gökçen (-15pp), Rome Fiumicino (-9pp) and Zurich (-9pp).
- ✈️ All 20 airports posted worse departure punctuality than in 2019, with decreases larger than 10pp for nine of them, while traffic was higher in only five airports.

Top 40 European airports: passengers

2023

Passengers and flights at ECAC top 40 Airports



Based on Airports Council International (ACI) passenger data, and for the top 40 European airports:

- ✈ The number of passengers(*) was **1.19 million** over the period January to November 2023, **21% more** than in 2022, while the number of corresponding flights amounted to 7.85 million, a 14% increase on 2022. The respective **recovery rates on 2019 levels** were **94%** in **passenger numbers** and 89% for flight movements.
- ✈ **Certain aircraft operators** are operating **above their 2019 levels** in terms of **seats**, mainly thanks to new aircraft models (e.g. NEOs).
- ✈ During the first quarter of 2023, the number of passengers at the top 40 airports increased significantly compared to 2022 (Jan: +83%, Feb: +56%, Mar: +37% as 2022 was affected by Omicron). The monthly growth rate progressively levelled off from June to circa 14%, and remained constant during the third quarter of 2023. Monthly passenger growth was 9% in November.

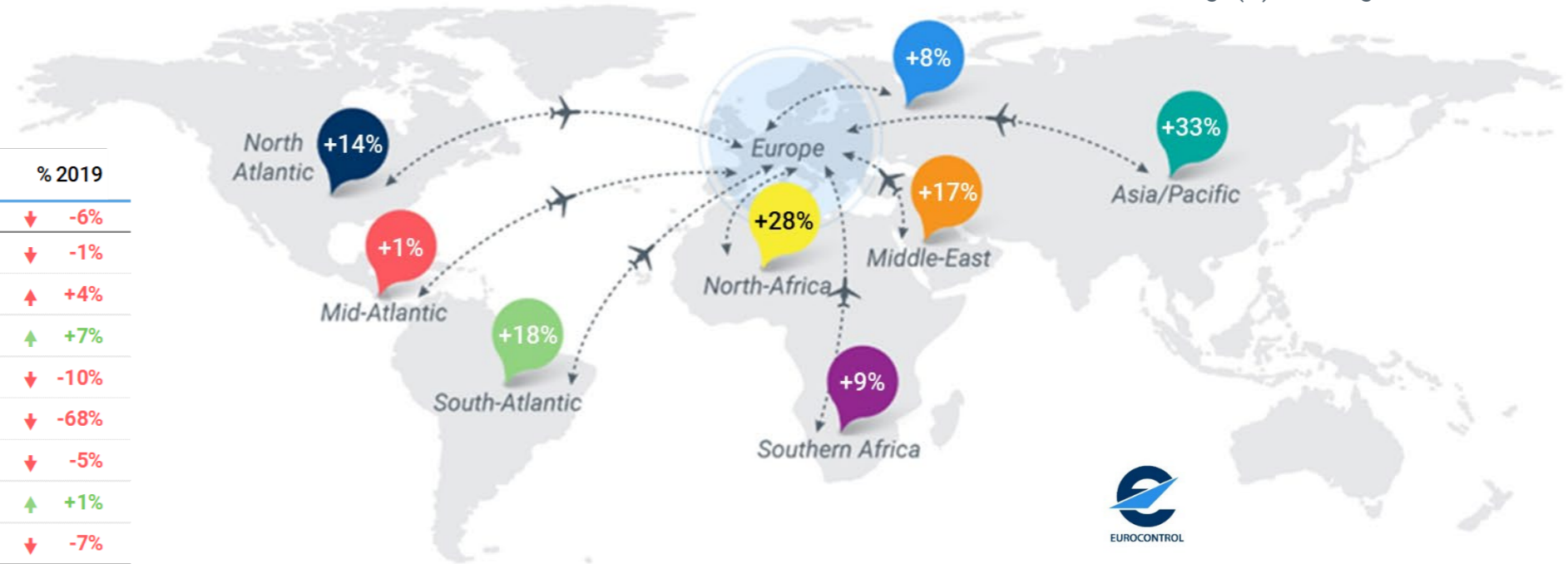
(*): Passengers comprise International enplaned + deplaned, Domestic enplaned +deplaned, as well as Transit passengers (counted once).

Traffic flows

Average daily departure/arrival flights for 2023

Percentage (%) of change 2023 vs 2022

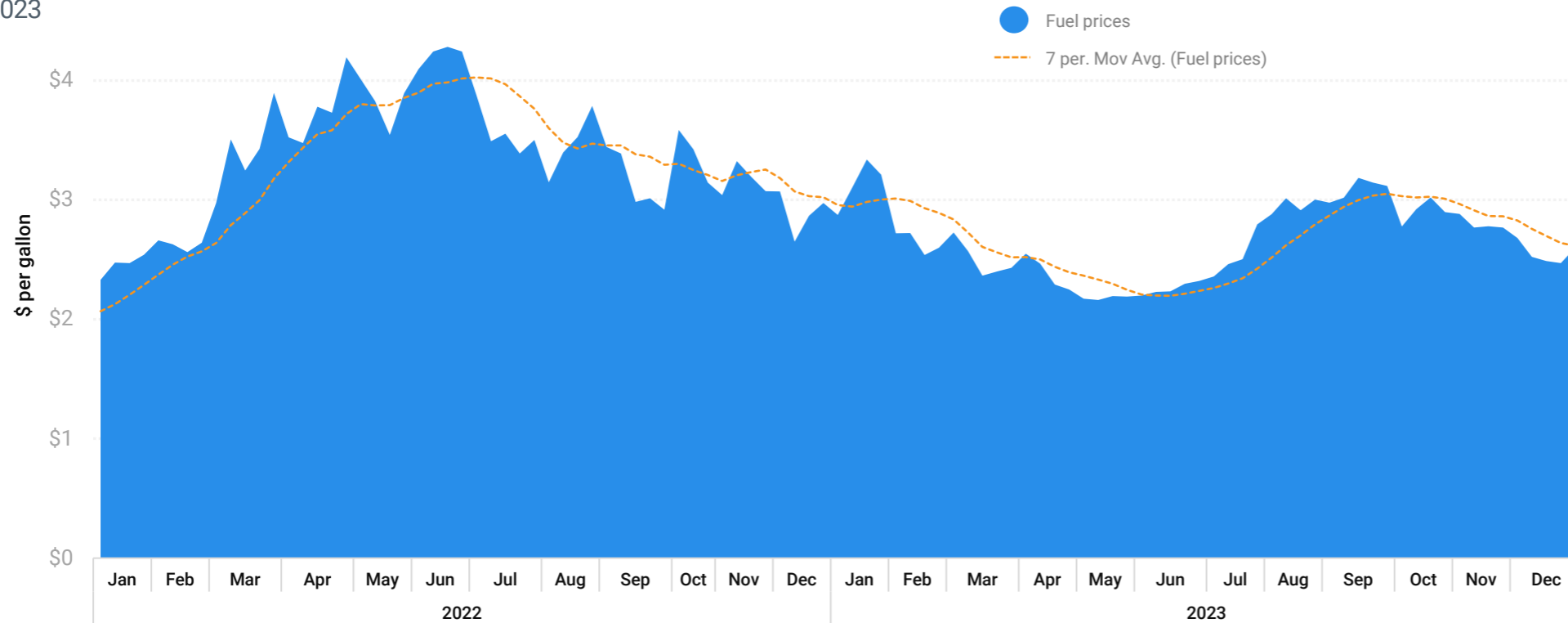
Region	Average daily flights	% 2022	% 2019
Intra-Europe	21,660	↑ +8%	↓ -6%
Europe ↔ Middle-East	1,401	↑ +17%	↓ -1%
Europe ↔ North Atlantic	1,227	↑ +14%	↑ +4%
Europe ↔ North-Africa	1,098	↑ +28%	↑ +7%
Europe ↔ Asia/Pacific	712	↑ +33%	↓ -10%
Europe ↔ Other Europe	332	↑ +8%	↓ -68%
Europe ↔ Southern Africa	297	↑ +9%	↓ -5%
Europe ↔ Mid-Atlantic	175	↑ +1%	↑ +1%
Europe ↔ South-Atlantic	172	↑ +18%	↓ -7%
Non Intra-Europe	5,414	↑ +18%	↓ -12%



- ✈ The **main** traffic flow was **intra-European** with 21,660 daily flights in 2023, more (+8%) than the previous year. **Intercontinental** flows resulted in 5,414 daily flights on average in 2023, +18% vs 2022.
- ✈ The **second-largest regional** flow is between Europe and the **Middle East**: 1,401 average daily flights in 2023, **17%** higher vs the previous year. Flows between Europe and the **UAE** is the busiest flow in this region, this grew by 21% in 2023 (vs 2022), followed by **Israel** (+9% in 2023 but declining by 53% over Q4 2023), **Qatar** (+16%) and **Saudi Arabia** (+70%).
- ✈ The **third-largest regional** flow is to/from the **North Atlantic**, with 1,227 daily flights, recording a **14%** increase compared to 2022.
- ✈ The **fourth** flow is to/from **North Africa**, with 1,098 flights per day, a sizeable increase (+28%) vs the previous year, owing to higher flows to/from **Morocco** (21%), **Egypt** (24%) and **Tunisia** (+26%).
- ✈ Flows between Europe and **Asia/Pacific** posted a 33% increase in 2023 (vs 2022), but have not yet recovered compared to 2019 (-10%). European flows with **China** (including Hong Kong) have steadily recovered however, and reached 187 average daily flights in 2023 (+63% vs 2022).
- ✈ Flows with Other Europe (including the **Russian Federation**) remain massively reduced at -68% compared to 2019.

Jet fuel price (Europe)

2023



Source: IATA/Platts

2023
avg fuel price:

\$2.66 /gallon

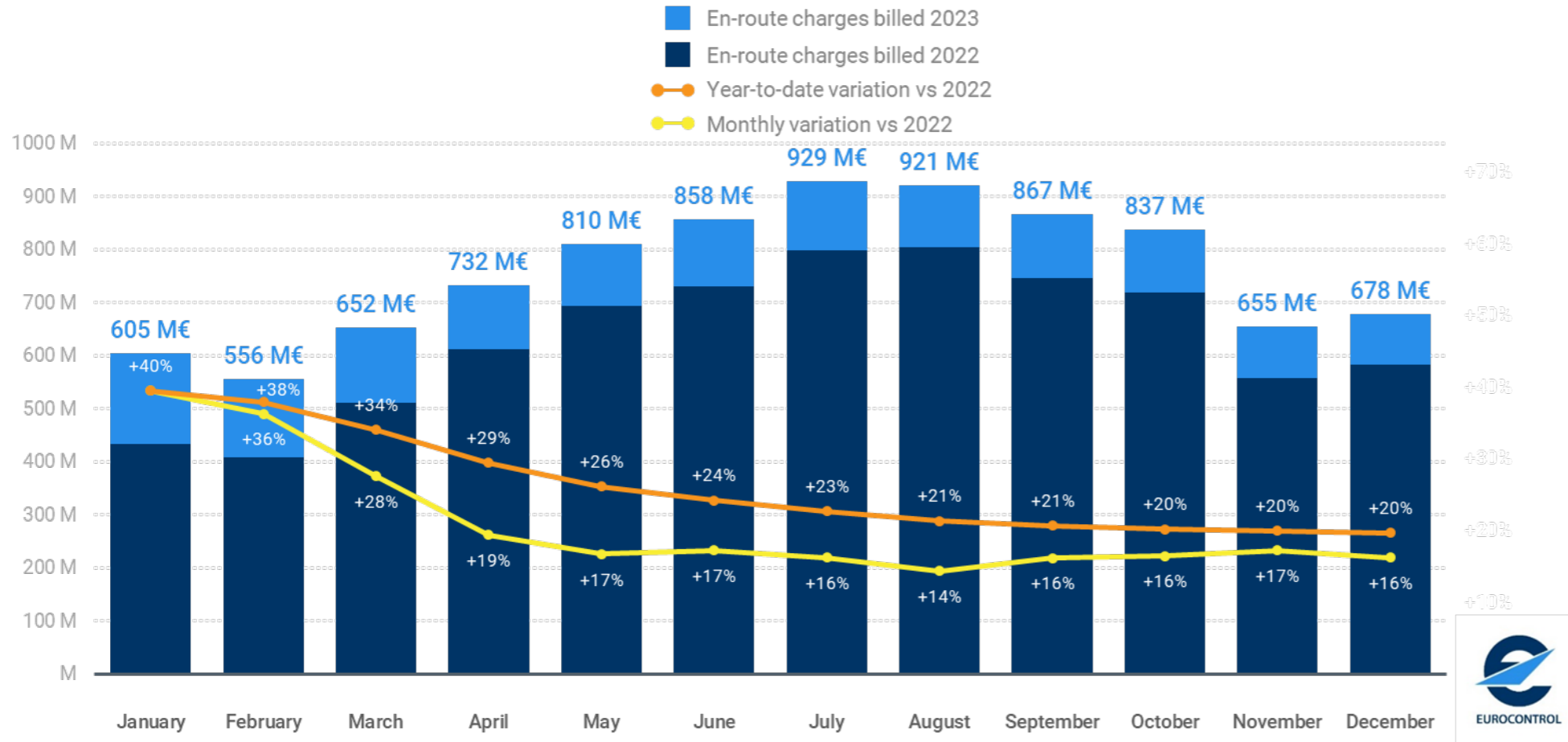
-20%
vs. \$3.33 /gallon
2022

Source: IATA/Platts

- The average price of jet fuel was at \$2.66/gallon in 2023, 20% lower than in 2022 (\$3.33/gallon).
- Based on a moving average trend, 2023 fuel prices in Europe started 2023 at around \$3/gallon and declined during the first part of the year, down to \$2.20/gallon in June 2023.
- After June 2023, jet fuel prices rose when Saudi Arabia (and the Russian Federation) started to cut oil production. However, since September there has been a slight decline.
- In December 2023 OPEC+ members (13 OPEC + 11 non-OPEC) including Saudi Arabia extended their voluntary oil output reductions until the end of Q1 2024 amid concerns over future fuel demand.

En-route air navigation charges for the EUROCONTROL area (2023)

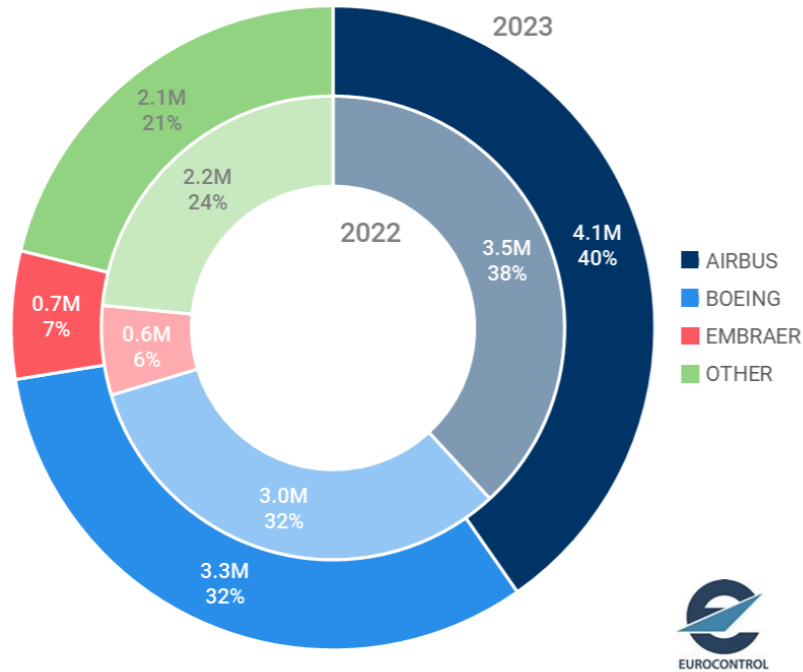
2023 amount billed: 9,102 M€ (+20% vs 2022)



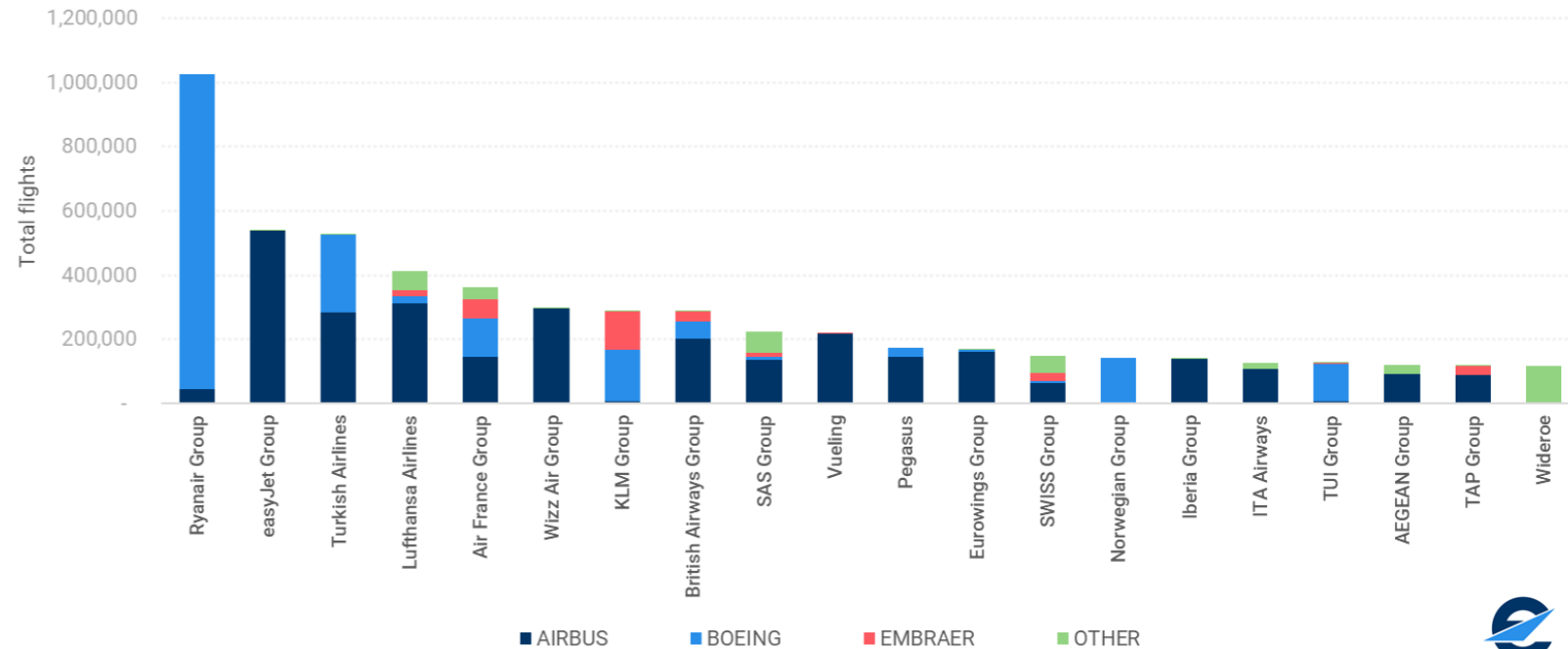
- ➔ En-route charges billed in 2023 (December estimated) amounted to 9,102 M€, 20% more (1,534 M€) than in the same period of 2022. This amount is also 15% (1,206 M€) more than in the same period of 2019.
- ➔ The variation with respect to 2022 is explained by an increase in Unit Rates (+7.4%) and an increase in Service Units (+14%) (Service Units take into account the distance flown and weight of the aircraft).
- ➔ The average distance per flight increased by +2% in 2023, and the average weight per flight by +3% (vs 2022).
- ➔ It should be noted that 2023 Unit Rates include the start of the recovery of the revenue losses that occurred in 2020 and 2021, covering almost all SES States.
- ➔ The variation with respect to 2019 is mostly due to an increase in Unit Rates.

Aircraft manufacturers

Share of flights by aircraft manufacturer



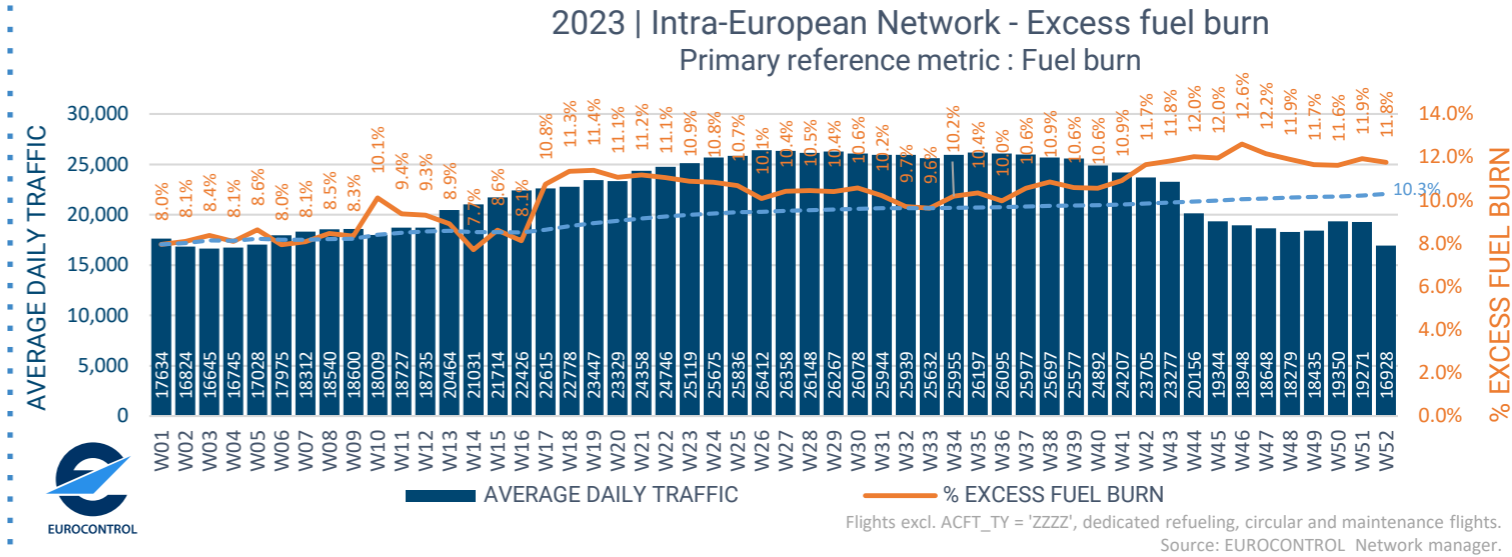
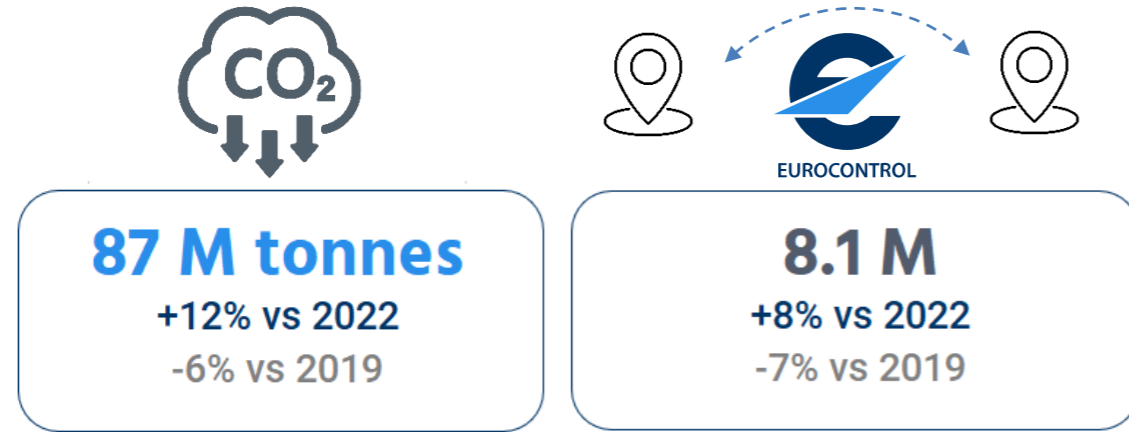
Flights of the top 20 aircraft operators by Aircraft Manufacturers



- ✈ At European level, **40%** of all flights in **2023** were operated by **Airbus** aircraft compared to **32%** by **Boeing** aircraft. The third manufacturer in terms of operated flights is Embraer (7%).
- ✈ **Airbus'** market share increased by 2 percentage points from 2022 to 2023, whereas **Boeing's** market share remained stable.
- ✈ The situation varies across the top 20 aircraft operators, where Airbus' share at 54% is much larger than Boeing's share at 34%.
- ✈ In 2023, the share of **new generation aircraft** was **25%** for **Airbus** (NEO) and **12%** for **Boeing** (MAX). Both shares have increased by 3 percentage points compared to 2022.

Sustainability: CO₂ emissions and excess fuel burn

2023, Intra-Europe



- In 2023 and focusing on the intra-European area, CO₂ emissions for flights were 12% higher than in 2022, whereas the flights responsible for these emissions were 8% above 2022 levels.
- Compared to 2019, CO₂ emissions were 6% below 2019 levels, as flights were too (7% below).
- The Excess Fuel Burn operational indicator measures fuel inefficiency corresponding to the actions of all stakeholders per city pair. The right-hand figure shows how the indicator has remained between 7.7% and 12.6% over 2023. It is to be noted that the ETFMS actual fuel burn calculator changed in May 2023, which explains the artificial increase in week 17.
- During May and June (~24,600 flights per day intra-Europe), Excess Fuel Burn remained mostly around +11%, on average, with some flows rerouted due to ATC strikes in France. Over the busy July to October period (~25,500 flights per day intra-Europe), the indicator was marginally lower (+10.5% on average).
- During the Winter schedule (the last 9 weeks of the year), traffic volumes remained low (around 18,800 flights per day intra-Europe), but Excess Fuel Burn jumped to around +12%, on average, with the indicator capturing the impact of the severe weather experienced in early December 2023.

Regulatory measures adopted in 2023 regarding sustainability

In 2023, the European Council adopted a **new law** to **decarbonise** the **aviation sector** under the **RefuelEU** aviation initiative. The latter is expected to ensuring a **level playing-field** for **sustainable** aviation. The EU aims at being **climate-neutral** by **2050**. The proposals are part of the **Fit for 55** legislative package, which aims to reduce the EU's greenhouse gas emissions by at least **55% by 2030**.

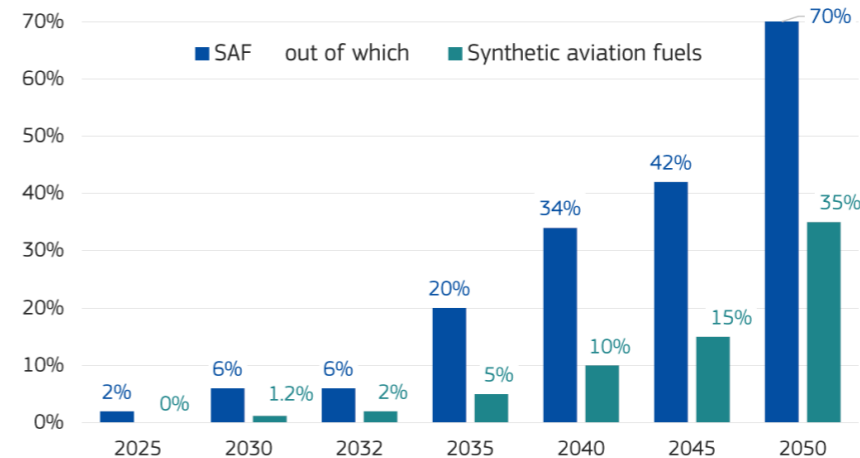
- ➔ The [ReFuelEU regulation \(EU\) 2023/2405](#) sets harmonised rules on the **uptake** and **supply** of sustainable aviation fuels (**SAF**). Aircraft fuel suppliers at EU airports will be obliged to gradually increase the share of SAF that they distribute (2% by 2025, 6% by 2030, 20% by 2035, 34% by 2040, 42% by 2045 and 70% by 2050). **Airlines departing from EU airports** will be obliged to **refuel aircraft only** with the fuel **necessary** for the flight (avoiding tankering practices), while EU airports will be obliged to guarantee the necessary infrastructure to deliver, store and refuel with SAF.
- ➔ The [EU ETS Directive Commission Implementing Regulation \(EU\) 2023/2122](#) updates an existing Implementing Regulation for the **monitoring** and **reporting** of **greenhouse gas emissions** of **aviation** activities pursuant to the existing directive, with specific provisions for SAF.
- ➔ The [EU Taxonomy delegated acts Commission Delegated Regulation \(EU\) 2023/2485](#) amends an existing delegated regulation and establishes additional **technical screening criteria** for determining the conditions under which certain **economic activities** qualify as **contributing** substantially to **climate change** mitigation or climate change adaptation, and for determining whether those activities cause no significant harm to any of the other environmental objectives (e.g. Technical screening criteria for Manufacturing of aircraft, Leasing of aircraft, Passenger and freight air transport, Air transport ground handling operations).

- ➔ The ESG regulations amend an existing regulation as regards [corporate sustainability reporting](#), supplement a [directive](#) vis-à-vis the adoption of the European Sustainability Reporting Standards (ESRS)), and **set** uniform requirement for the issuance of bonds that wish to use the designation '[European Green Bond](#)'.
- ➔ The [Innovation Fund Regulation Commission Delegated Regulation \(EU\) 2023/2537](#) supplements an existing Directive and sets a new funding instrument for climate policy, with a focus on energy and industry, which is partly applicable to aviation.

Binding shares of SAF



Ambitious **EU-wide binding shares** and realistic ramp-up 2025-2050

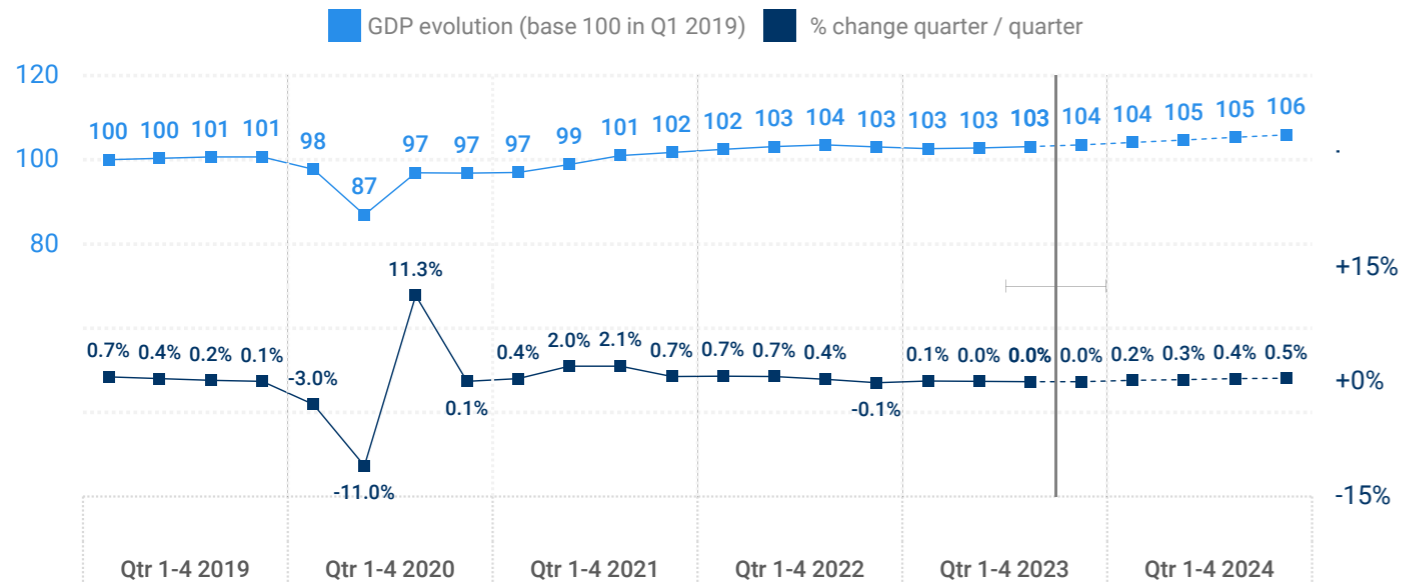


11 | 10 October 2023
Aviation Policy Unit, DG MOVE



GDP in the European Union

Constant prices and exchange rate, euro



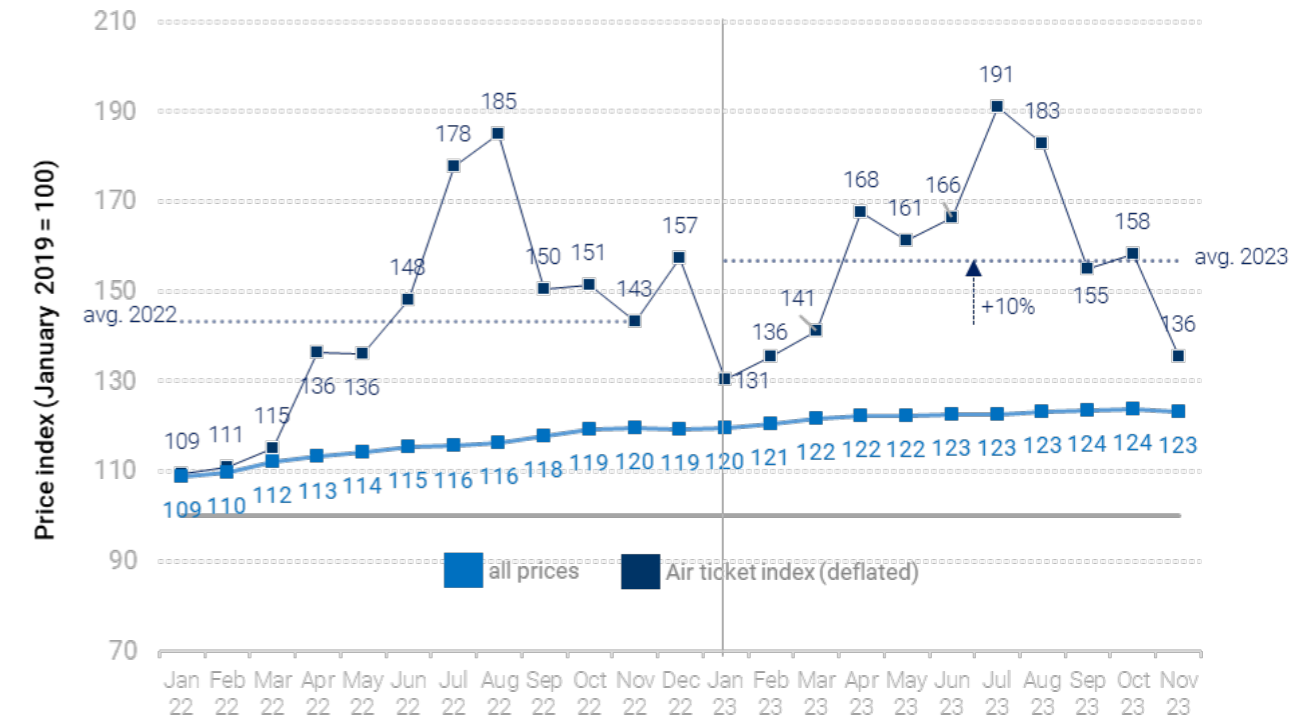
Source: Oxford Economics Ltd.
Last Update: Dec. 2023

The latest information from Oxford Economics shows that:

- ➔ According to their **latest GDP forecast**, the EU27 economies posted **very weak** but positive **growth** during Q1 2023 (+0.1% vs Q1 2022), and **stagnated** during Q2 and Q3 2023 (0% vs Q2 2022 and Q3 2022 respectively). The EU27 forecast for Q4 2023 is expected to record 0.0% on the previous Q4 quarter.
- ➔ Average GDP for 2024 is expected to be 105 (using 2019 as a baseline at 100).

Price change per month (EU27)

Values compared to the same month of the previous year



Source: EUROSTAT

The latest information from EUROSTAT for the EU27 shows that:

- ➔ **All-prices inflation** slowed during 2023; overall, prices were **7% higher** than in 2022.
- ➔ **Air ticket prices** increased by **10% in real terms** for Jan-Nov 2023 compared to the same period in 2022. In part, this reflected significant year-on-year growth in both demand and traffic, particularly during the spring months. However, by November 2023 they had fallen back to below the level of November 2022.

Supporting European Aviation



To further assist you in your analysis, EUROCONTROL provides the following additional information on a daily basis (daily updates at 8:45 CET for the first item) and every Friday for the last item:

1. EUROCONTROL Aviation Intelligence Portal:
www.eurocontrol.int/Economics/
This dashboard provides daily performance data on Day+1 for all European States; for the largest airports; for each Area Control Centre (ACC) and the largest airline operators.
2. EUROCONTROL "Our Data" Portal:
www.eurocontrol.int/our-data/
This webpage provides an overview of key charts and publications related to European aviation performance.
3. EUROCONTROL Data App: Available at Android Play Store ([link](#)), Apple App Store ([link](#)).
This app provides daily performance data on Day+1 at network level and top stakeholders.
4. Rolling Seasonal Plan:
www.eurocontrol.int/publication/european-network-operations-plan-2023-rolling-seasonal-plan
This Rolling Seasonal Plan covers a rolling six or eight-week period and consolidates data from 350 airlines, 68 area control centres (ACCs), 55 airports and 43 States. It plays a major role in helping European aviation to recover by providing aviation's key actors with the global view they need to plan effectively.



- "Europe" should be understood as the "EUROCONTROL Network Manager area", which encompasses our 41 Member States and 2 Comprehensive Assessment States (see our scope [here](#)).
- Top 40 European airports for passenger statistics are: IST, LHR, CDG, AMS, MAD, FRA, BCN, LGW, MUC, AYT, SAW, FCO, ORY, PMI, LIS, DUB, VIE, MAN, STN, ATH, ZRH, OSL, CPH, MXP, TLV, BER, BRU, ARN, AGP, DUS, WAW, GVA, ALC, BGY, LTN, HEL, OPO, OTP, LPA, BUD.



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