PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Belgium - 2023

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2024/350 of 13 December 2023

List of ACCs 1
Brussels ACC

No of airports in the scope of the performance plan:
- **≥80'K** 1
- **<80'K** 0

Exchange rate (1 EUR=)
2017: 1 EUR
2023: 1 EUR

Share of Union-wide:
- **traffic (TSUs) 2023** 2.0%
- **en route costs 2023** 3.5%

Share en route / terminal costs 2023 87% / 13%

En route charging zone(s)
Belgium-Luxembourg

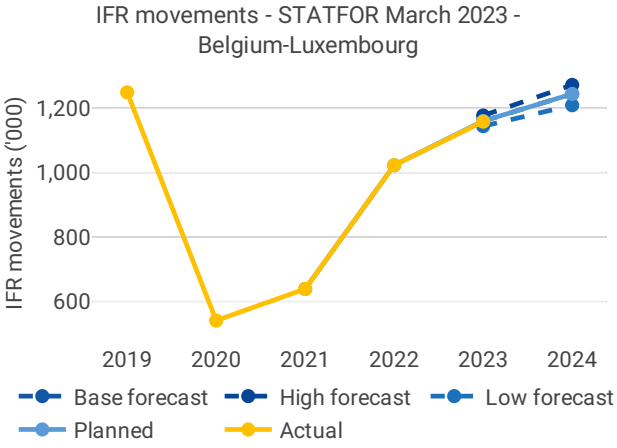
Terminal charging zone(s)
Belgium

Main ANSP
- skeyes

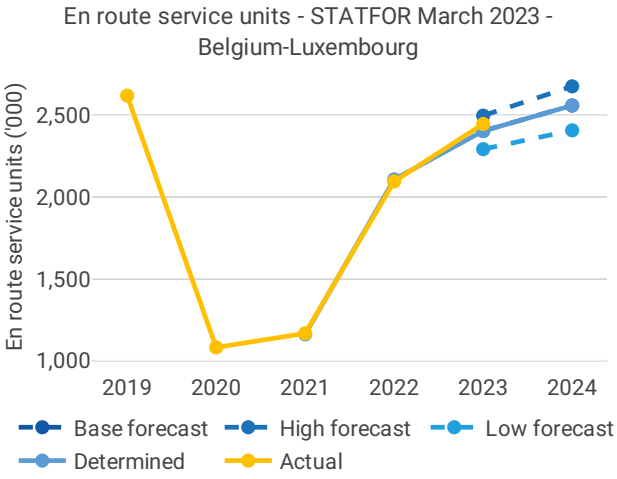
Other ANSPs
- MUAC

MET Providers
–

1.2 Traffic (En route traffic zone)

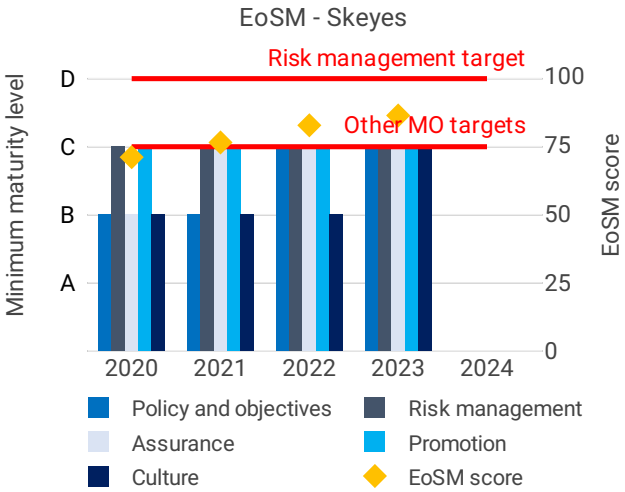


- The en route charging zone of Belgium-Luxembourg recorded 1,158K actual IFR movements in 2023, +13% compared to 2022 (1,023K).
- Actual 2023 IFR movements were -1.3% below the plan (1,173K).
- Actual 2023 IFR movements represent 93% of the actual 2019 level (1,249K).



- The en route charging zone of Belgium-Luxembourg recorded 2,447K actual en route service units in 2023, +17% compared to 2022 (2,096K).
- Actual 2023 service units were +2% above the plan (2,404K).
- Actual 2023 service units represent 93% of the actual 2019 level (2,620K).

1.3 Safety (Main ANSP)



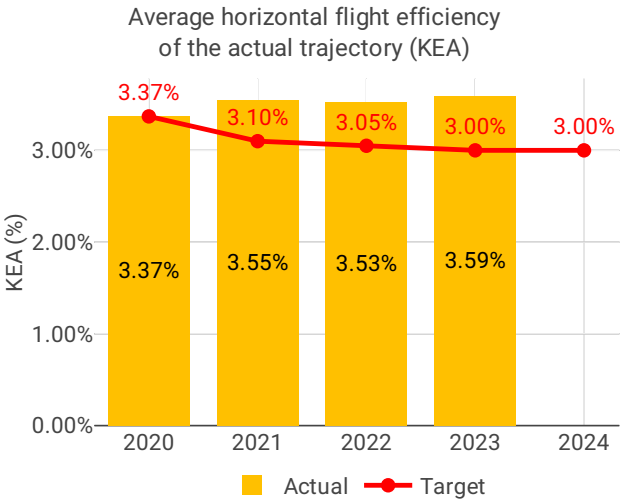
• In 2023, skeyes did not achieve its planned maturity level for risk management but it improved for safety culture reaching the RP3 target. skeyes made no progress in the safety risk management component and is behind its planned maturity level for this management objective. The ANSP established corrective measures to ensure the RP3 target level is met by 2024.

• The NSA cautions that the skeyes might not be able to achieve the RP3 targets unless compliance with (prescriptive) EoSM guidance material is fully demonstrated.

• The overall safety performance of skeyes was stable, the runway incursion rate was higher than in 2022 but remained below the Union-wide average.

• Skeyes does not use automated safety data recording systems.

1.4 Environment (Member State)



• Belgium achieved a KEA performance of 3.59% compared to its target of 3.00% and did not contribute positively to the Union-wide target.

• The NSA states that given the limited size of the Belgium-Luxembourg airspace, the possibility of improving performance is limited.

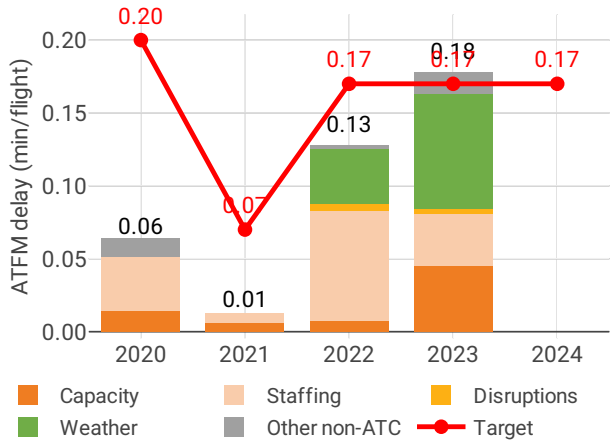
• Both KEP and SCR improved in comparison with 2022's performance. Despite the KEA target being missed, the improvement in SCR shows that Belgium has improved the environmental efficiency of its airspace when accounting for impacts outside of its control.

• The share of CDO flights marginally decreased from 16.91% to 16.20% in 2023.

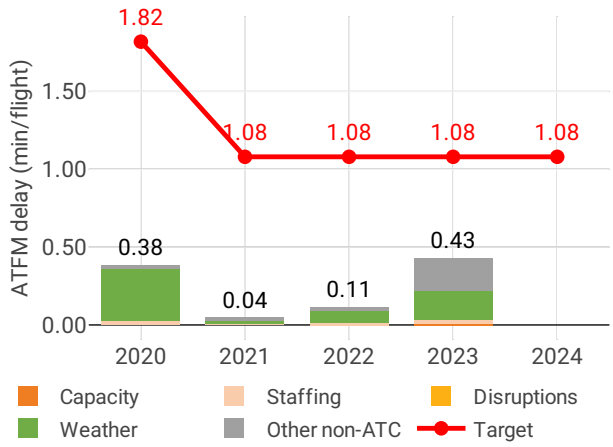
• During 2023, additional time in terminal airspace increased from 0.57 to 0.75 min/flight, while additional taxi out time increased from 1.53 to 2.14 min/flight.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• The average number of IFR movements was 13% below 2019 levels in Belgium-Luxembourg in 2023.

• Belgium-Luxembourg registered 0.18 minutes of average en route ATFM delay per flight during 2023, thus not achieving the local target value of 0.17. Delays in Belgium-Luxembourg decreased by 0.09 minutes per flight year-on-year.

• Delays were highest in May and between July and October, mostly driven by ATC staffing and adverse weather.

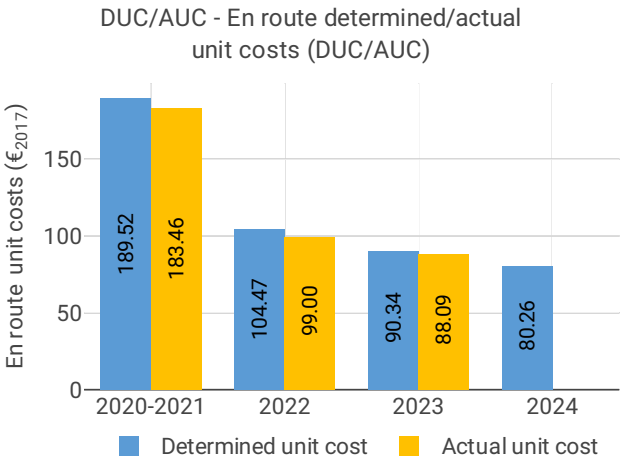
• The share of delayed flights with delays longer than 15 minutes in Belgium-Luxembourg decreased by 3 p.p. compared to 2022 and was lower than 2019 values.

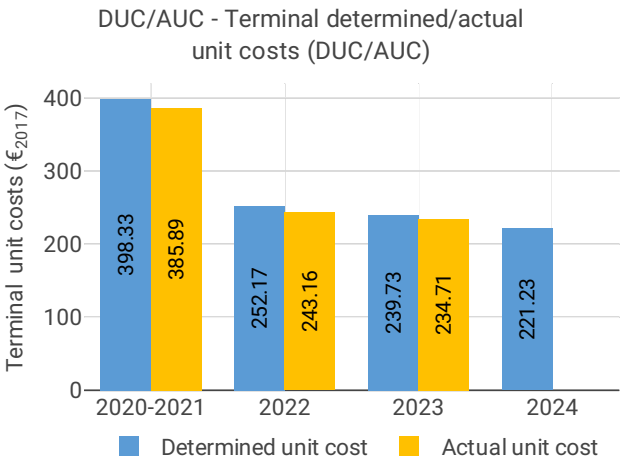
• The number of ATCOs in OPS is expected to increase by 12% by 2024, with the actual value being below the 2023 plan in Brussels by 6 FTEs.

• The yearly total of sector opening hours in Brussels ACC was 28,519, showing a 0.4% increase compared to 2022. Sector opening hours are 2.1% below 2019 levels.

• Brussels ACC registered 19.46 IFR movements per one sector opening hour in 2023, being 10.7% below 2019 levels.

1.6 Cost-efficiency (En route/Terminal charging zone(s))





• The en route 2023 actual unit cost of Belgium-Luxembourg was 88.09 €2017, -2.5% lower than the determined unit cost (90.34 €2017). The terminal actual unit cost of Belgium was 234.71 €2017, -2.1% lower than the determined unit cost (239.73 €2017). The terminal actual unit cost of Luxembourg was 263.82 €2017, +14% higher than the determined unit cost (231.72 €2017).

• The en route 2023 actual service units (2.45M) were +1.8% higher than the determined service units (2.40M).

• The en route 2023 actual total costs were -1.7 M€2017 (-0.8%) lower compared to determined. The gap was mainly attributable to lower other operating costs (-4.6 M€2017, or -10%). The NSA explained that the lower other operating costs resulted from utility expenses decreasing more rapidly than anticipated in 2023, following a steep increase in the previous year.

• skeyes spent 12 M€2017 in 2023 related to costs of investments for en route charging zone, which was more than determined (+0.4 M€2017, or +3.4%). According to the NSA, this overspend is due to the "decommissioning of equipment (ISAAC SR4, old WAN)" which was not foreseen in the performance plan, resulting in an overspent of depreciation costs (+0.4 M€2017, or +4.8%).

• The en route actual unit cost incurred by users of Belgium-Luxembourg in 2023 was 106.60€ (-2.2% below the 2023 DUC), while the terminal actual unit cost incurred by users was 214.99€ (-26% below the 2023 DUC) for Belgium and 236.97€ (-12% below the 2023 DUC) for Luxembourg. The difference between the AUCU and the DUC for the Belgium EBBR charging zone is strongly affected by the adjustment of other revenues (-11 M€).

2 SAFETY - BELGIUM

2.1 PRB monitoring

• In 2023, skeyes did not achieve its planned maturity level for risk management but it improved for safety culture reaching the RP3 target. skeyes made no progress in the safety risk management component and is behind its planned maturity level for this management objective. The ANSP established corrective measures to ensure the RP3 target level is met by 2024.

• The NSA cautions that the skeyes might not be able to achieve the RP3 targets unless compliance with (prescriptive) EoSM guidance material is fully demonstrated.

• The overall safety performance of skeyes was stable, the runway incursion rate was higher than in 2022 but remained below the Union-wide average.

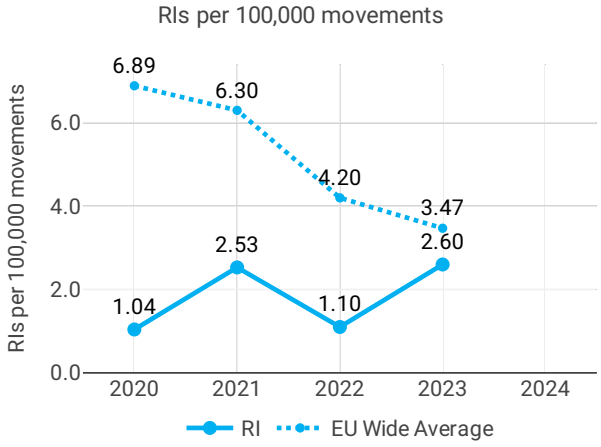
• Skeyes does not use automated safety data recording systems.

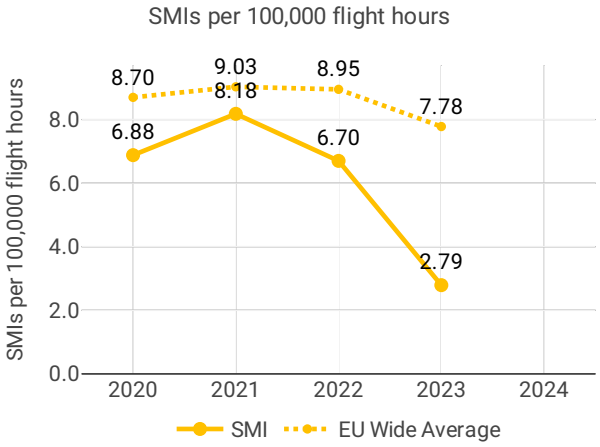
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

Focus on EoSM

Four out of five EoSM components of the ANSP meet the RP3 target level. Compared with 2022, in 2023 the "Safety Culture" component was improved and consequently achieved the RP3 target. A single remaining component "Safety Risk Assessment" is below the RP3 target for two questions that are to be improved during RP3.

2.3 Occurrences - Rate of runway incursions (RIs) (PI#1) & Rate of separation minima infringements (SMIs) (PI#2)





3 ENVIRONMENT - BELGIUM

3.1 PRB monitoring

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• The NSA states that given the limited size of the Belgium-Luxembourg airspace, the possibility of improving performance is limited.

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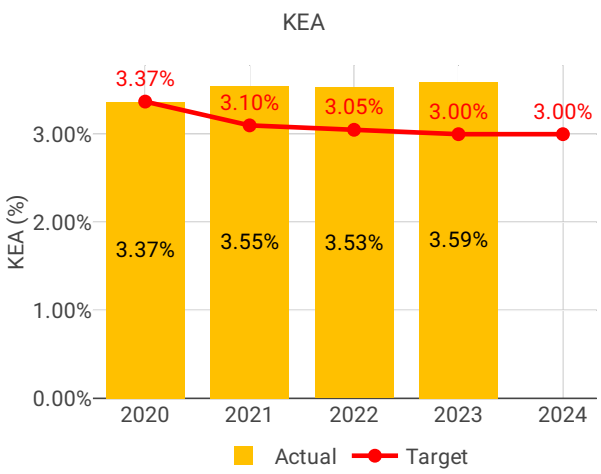
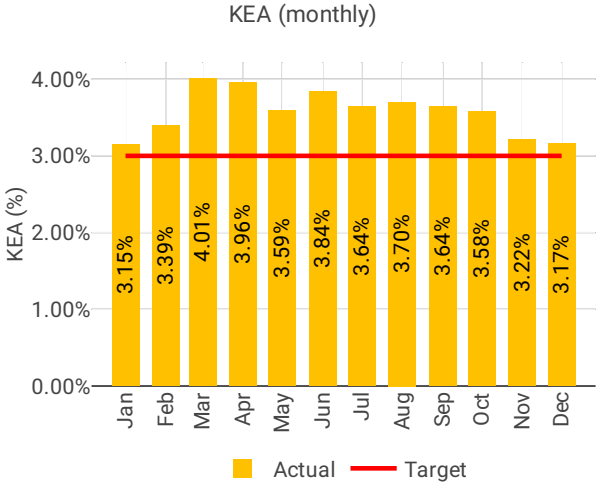
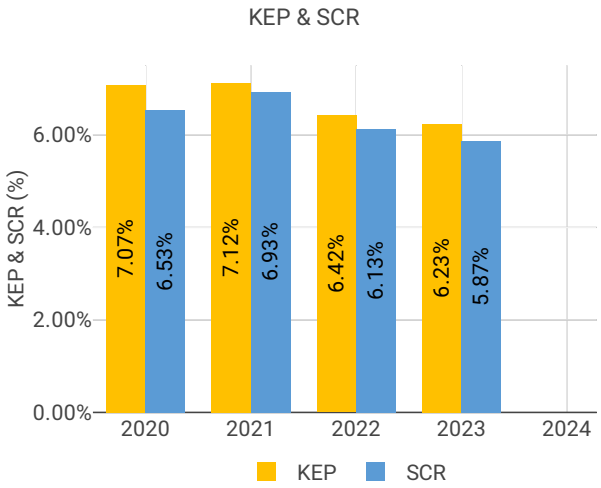
• During 2023, additional time in terminal airspace increased from 0.57 to 0.75 min/flight, while additional taxi out time increased from 1.53 to 2.14 min/flight.

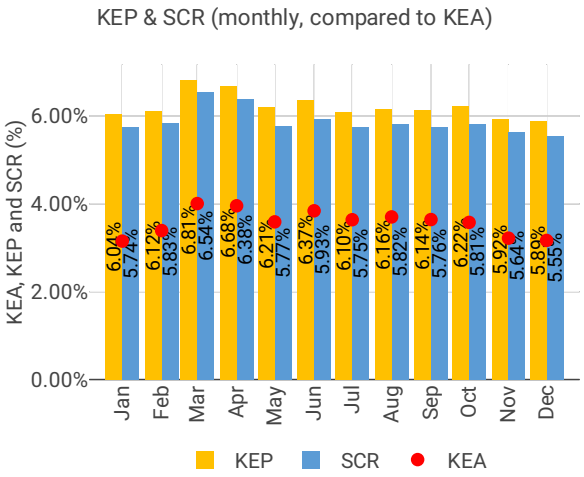
3.2 En route performance

3.2.1 Horizontal flight efficiency of the actual trajectory (KEA) (KPI#1), of the last filed flight plan (KEP) (PI#1) & shortest constrained route (SCR) (PI#2)



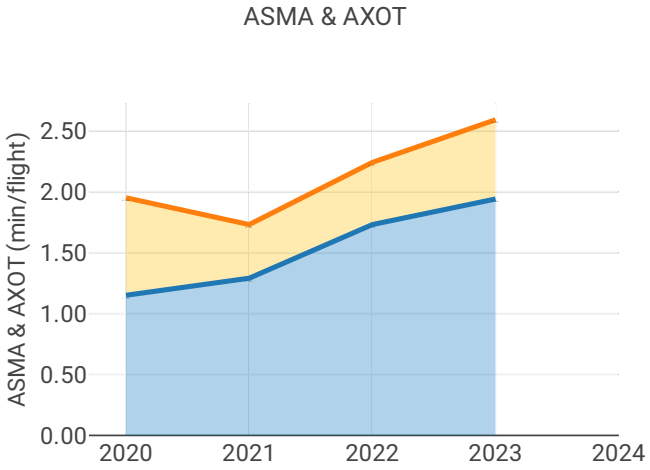


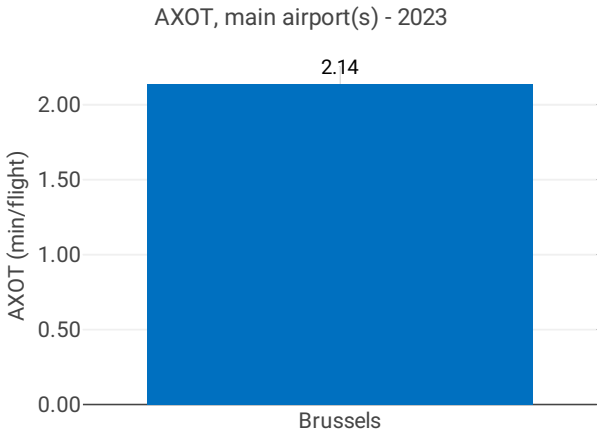


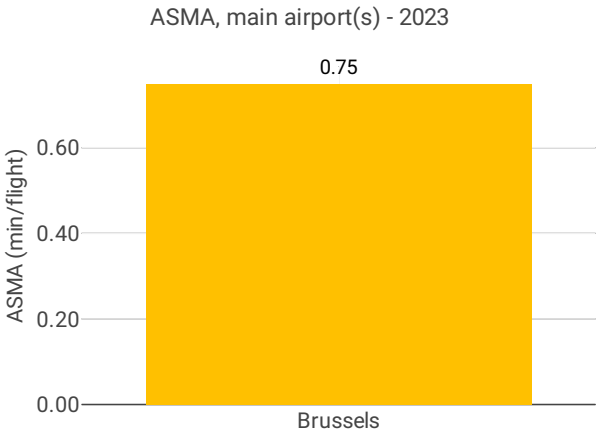


3.3 Terminal performance

3.3.1 Additional taxi-out time (AXOT) (PI#3) & Arrival Sequencing and Metering Area (ASMA) time (PI#4)







Focus on ASMA & AXOT

AXOT

Additional taxi-out times at Brussels (EBBR; 2019: 2.21 min/dep.; 2020: 1.36 min/dep.; 2021: 1.28 min/dep.; 2022: 1.53 min/dep.; 2023: 2.14 min/dep.) increased in 2023 but remained well below the SES average in 2023 of 2.81 min/dep.

According to the Belgian monitoring report: *For Belgium, it is noted that some factors included in the Taxi-out time (for example: push-back time) influence this indicator but are beyond control of ANSP.*

A-CDM is implemented for many years, and continuously being improved. Latest improvements were focused on incorporating de-icing (and hence reducing taxi times).Improvement of A-CDM is also part of Stargate (EU Green Deal Project for more sustainable aviation). Within this framework, skeyes will provide support to Brussels Airport in developing e-learning modules to create awareness and better understanding of the concept for the airport stakeholders and the fellow airports. The Lighthouse will also enhance reporting and monitoring of KPIs within A-CDM towards more efficient and, thus, more sustainable operations.

The monitoring report also mentions: *The additional taxi-out time is computed by EUROCONTROL/PRU and can be retrieved on the SES e-dashboard (https://www.eurocontrol.int/prudata/dashboard/data/) but the indicator is not available for all airports. However, the methodology defined by PRU is still under discussion because it remains unclear what the time difference from year to year indicates, or the meaningfulness of an airport A versus airport B comparison, in particular when focussing on the ANSP influence on the performance.*

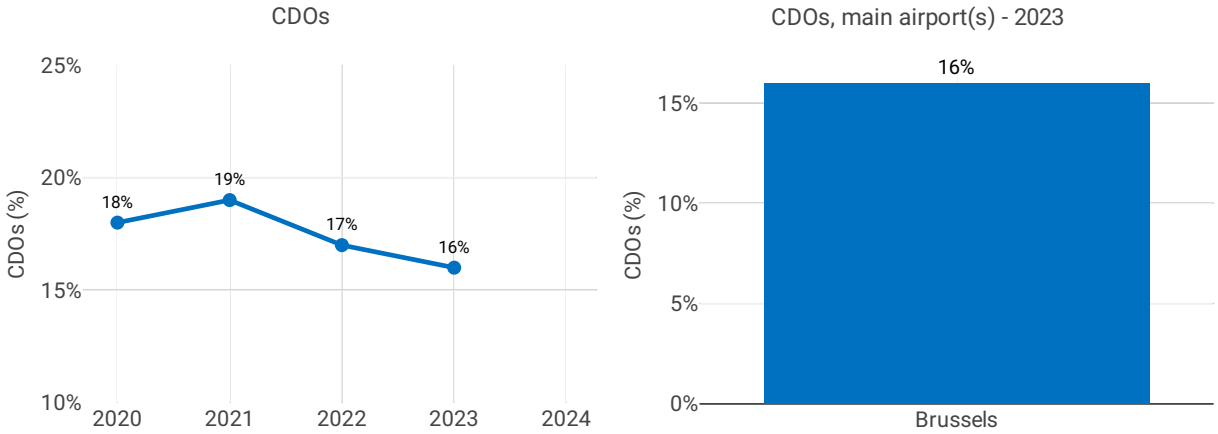
ASMA

Additional ASMA times at Brussels increased in 2023 (EBBR; 2019: 1 min/arr.; 2020: 0.89 min/arr.; 2021: 0.47 min/arr.; 2022: 0.57 min/arr.; 2023: 0.75 min/arr.) but remain well below the SES average of 1.16 min/arr.

According to the Belgian monitoring report: *For Belgium, ASMA is considered to be intended primarily to capture terminal holdings. Within EBBR, stacking aircraft in holding to absorb delays (similar to EGLL) is seldomly applied. Within a radius of 30 NM around EBBR, radar vectoring is most often applied. Depending on the traffic demand, shorter or longer trajectories are being flown (-> sequencing). However radar vectoring has the advantage that shortest routes can be issued, hence leading to 'best possible' ASMA values, while of course taking into account applicable restrictions (e.g. noise abatement).Purely for the sake of ASMA, the current working methods (vectoring), probably leave very limited room for improvement. The real challenge is improving predictability in the arrival process (vectoring -> increased use of fixed routings), without deteriorating ASMA.*

The monitoring report also mentions: *The additional time in terminal airspace (ASMA) is computed by EUROCONTROL/PRU and can be retrieved on the SES e-dashboard (https://www.eurocontrol.int/prudata/dashboard/data/) However, the methodology defined by PRU is still under discussion. FABEC trials showed that changes of the ambient air temperature alone can significantly infuence the measured performance.*

3.3.2 Share of arrivals applying continuous descent operations (CDOs) (PI#5)



Focus CDOs

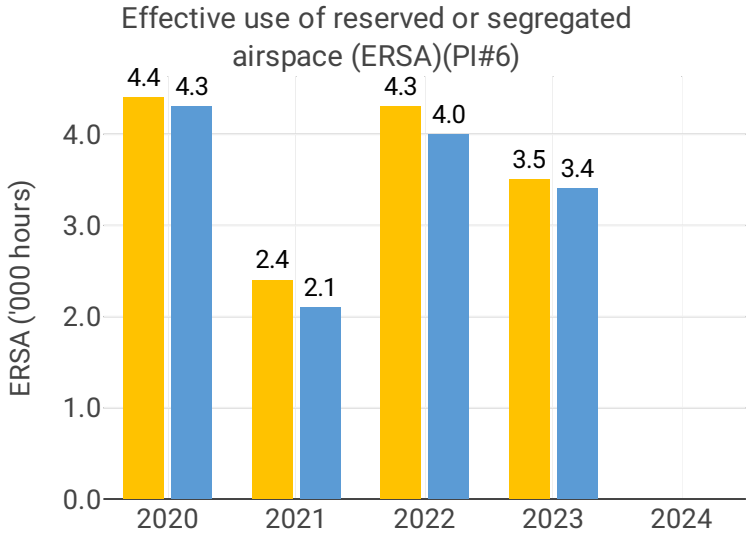
The share of CDO flights for Brussels is 16.0% which is a decrease of 1.1 percentage points but still quite low compared to other airports with similar traffic numbers and the overall RP3 value in 2023 (28.8%).According to the Belgian monitoring report: *skeyes has been running several initiatives/projects to improve the facilitation of CDOs at EBBR. This includes implementation of PBN procedures, promotion of RNP (Required Navigation Performance) procedures (in the framework of Stargate project – see 2.2.2.(d)) and operational demonstration of ISGS (Increased Second Glide Slope) at Brussels airport (in the framework*

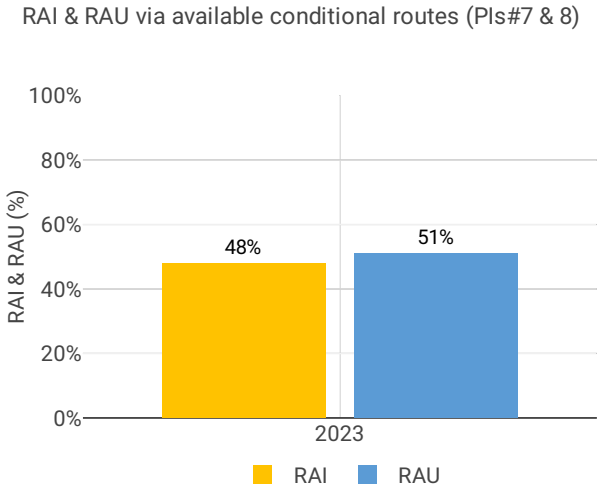
of HERON project, currently in its planning phase; demonstrations are planned to take place in 2024). Besides, skeyes maintains a collaboration with main OPS stakeholders at EBBR (ATC/airport/airlines) through CEM (Collaborative Environmental Management) platform to further reduce the environmental impact of airport operations.

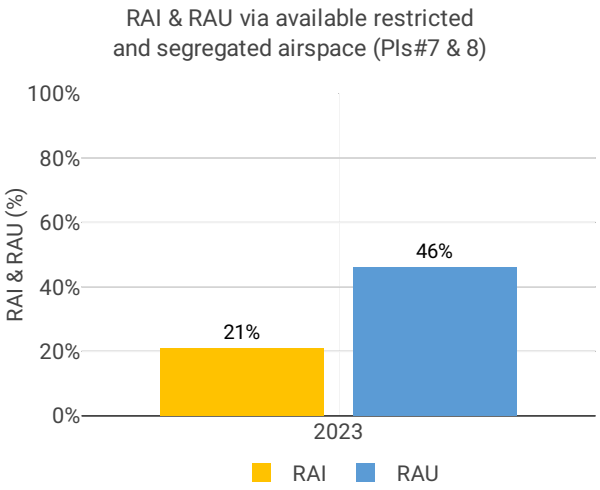
Airport level

	Additional taxi-out time (PI#3)					Additional ASMA time (PI#4)					Share of arrivals applying CDO (PI#5)				
Airport Name	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Brussels	1.36	1.28	1.53	2.14	NA	0.89	0.47	0.57	0.75	NA	18%	20%	17%	16%	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

For obvious flight safety reasons, military activities must be segregated from civil flows which has an impact on both horizontal (HFE) and vertical flight efficiency (VFE).
Because ASM manageable areas form an integral part of the nominal system, military airspace reservations shall be considered as part of the performance baseline rather than a key factor degrading environmental KPIs.
As a result of implementation of the FUA concept the impact of military activities using Restricted Airspace(RSA) on civil performance is highly minored when associated with an efficient ASM process:

- At strategic level (HLAPB) by designing areas in accordance with A-FUA concept (MVPA/VGA structures), especially for congested airspaces.
- At pre-tactical level (AMC), by managing these areas in a dynamic way, with an associated level 2 CDM process, validated by HLAPB.
- At tactical level (ACC/Regional Military Control Centre) by activating/deactivating areas as close as possible to actual use and allowing crossing or direct routes when possible (in accordance with TRA status), with an associated level 3 CDM process validated by HLAPB.
- At each level, HLAPB, AMC or ACC/Regional Military Control Centre, a key factor of efficiency is a trust-driven civil-military cooperation. As a counterpart, AOs and CFSPs must be reactive and take efficiently into account available or released airspaces. At last, ANSP have also to adapt the route network to create more DCTs within military areas.
Finally, local circumstances (e.g. constrained airspace, proximity of international hubs, etc….) as well as a large number of military missions that differ from one State to another must be taken into account. Therefore, airspace needs (e.g. airspace requirements for the 5th generation fighters) and related ASM procedures of the States differ and standardized objectives cannot be defined.

Military - related measures implemented or planned to improve capacity

FABEC States are working on mid-term improvements regarding implementation of ASM level 1. 2. and 3 procedures. Some local initiatives regarding ASM/ATFCM convergence, like the traffic Light Scheme concept in France are promoted at FABEC level, as well as at ECAC level in the EUROCONTROL OEP framework. Another major improvement is the interconnection of the existing ASM tools (e.g. LARA, STANLY_ACOS) at FABEC Level, to enhance regional coordination among FABEC AMCs as well as with the NM.

Initiatives implemented or planned to improve PI#6

Since Jan 23 BEL implemented fully (after trial period) the advanced FUA principles whereby only planned activity is published via AUP on D-1. while extra bookings remain possible up to H-3; this results in a more stable network for the airline users and ANSPs without impacting too much the flexibility of the military. The BB-AUP was introduced in the Belgian Airspace

Initiatives implemented or planned to improve PI#7

MIL is unable to provide this data

Initiatives implemented or planned to improve PI#8

MIL is unable to provide this data as need for radar data.

4 CAPACITY - BELGIUM

4.1 PRB monitoring

• The average number of IFR movements was 13% below 2019 levels in Belgium-Luxembourg in 2023.

• Belgium-Luxembourg registered 0.18 minutes of average en route ATFM delay per flight during 2023, thus not achieving the local target value of 0.17. Delays in Belgium-Luxembourg decreased by 0.09 minutes per flight year-on-year.

• Delays were highest in May and between July and October, mostly driven by ATC staffing and adverse weather.

• The share of delayed flights with delays longer than 15 minutes in Belgium-Luxembourg decreased by 3 p.p. compared to 2022 and was lower than 2019 values.

• The number of ATCOs in OPS is expected to increase by 12% by 2024, with the actual value being below the 2023 plan in Brussels by 6 FTEs.

• The yearly total of sector opening hours in Brussels ACC was 28,519, showing a 0.4% increase compared to 2022. Sector opening hours are 2.1% below 2019 levels.

• Brussels ACC registered 19.46 IFR movements per one sector opening hour in 2023, being 10.7% below 2019 levels.

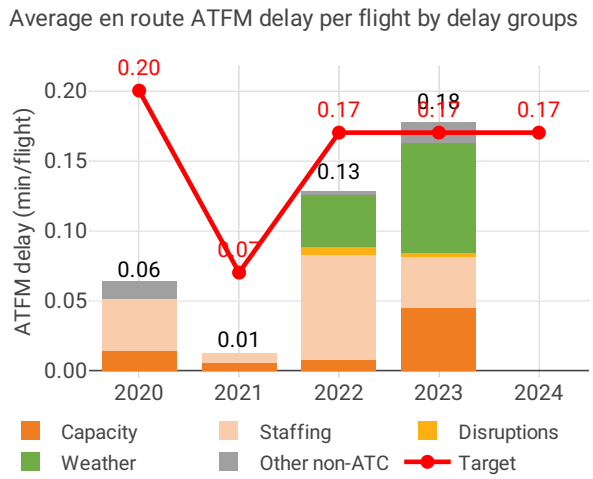
• Belgium registered an average airport arrival ATFM delay of 0.43 minutes per flight in 2023, achieving the local target of 1.08 minutes.

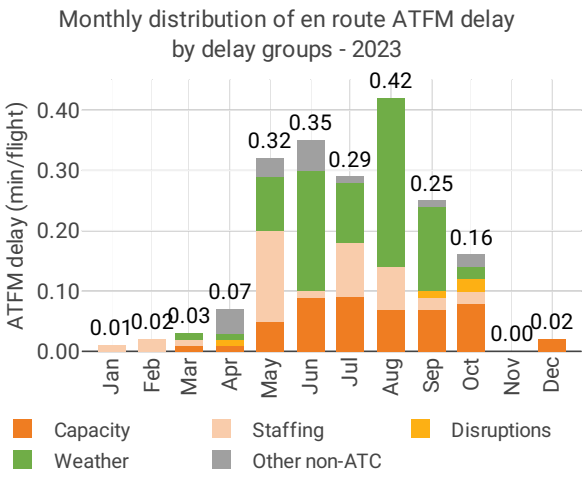
• Compared to 2022, average arrival ATFM delays in Belgium were 290% higher in 2023, while the number of IFR arrivals increased by 8%.

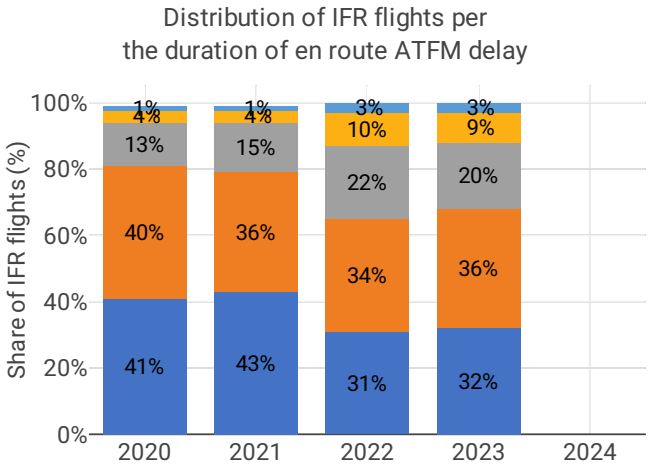
• The main reasons for delays were other, non-ATC related causes, responsible for 49% and weather, accounting for 44% of delays.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Belgium & Luxembourg did not achieve the required en route capacity performance for 2023. There were 1,174k flights handled in the airspace of Belgium & Luxembourg (both Brussels ACC and the Brussels sectors in MUAC) with 206k minutes of en route ATFM delay. In 2022 there were 1,038k flights with 131k minutes of en route ATFM delay.

NSA's assessment of capacity performance

En route capacity target was not achieved. All causes targets was not met due to two severe weather events in August 2023 and two big military exercises in the vicinity of MUAC in summer 2023 (air defender '23 and task force '23).

Monitoring process for capacity performance

For skeyes, capacity monitoring is executed via the process as described in the manual of the NSA. Relevant data are collected from skyes, FABEC and other entities (Eurocontrol dashboard). If occuring delays a justification can be requested from skeyes, with potential corrective action request afterwards.
MUAC reports its en-route capacity performance to the states through the MUAC Finance and Performance committee. The performance data is also monitored on a monthly basis through the FAO/PMG (FABEC ANSP Office / Performance Management Group) capacity report. This report is based on MUAC data and available PRU data, which is consolidated and analysed and the results compared to the reference and indicative values. Even though the FABEC states now have national performance plans, the monitoring for en-route capacity performance is carried out under the auspices of the FABEC Financial and Performance Committee (FPC), counterpart of the European Commission at the States side, consulting and reporting to FABEC Council as appropriate.
On a monthly basis and through the FAO/PMG /FABEC ANSP OFFICE/ Performance Management Group) the ANSPs collectively submit a report to the FPC, based on PRU available data, consolidated and analysed, on their joint progress in achieving the FABEC target set and reference or indicative values and on the results and analysis of the en- route capacity achievement.
In case the target set and/or the annual/reference values are threatened not to be met, FAO/PMG is asked to propose to FPC possible corrective measures which the ANSPs determine fit to react to the weaker performance at FAB, national and/or ACC level, in order to remedy the situation.
The FPC analyses the reports, assesses the actions considered by the ANSPs together with the necessity of appropriate measures to be taken by the States or the NSAs and makes an advice to the proposals, made by the FAO/PMG, to the FABEC Council for such appropriate measures, after consultation with the FAO/PMG. The potential corrective measures take into account the seriousness of the risk of not meeting the targets set and/or the annual/reference values.
This monitoring process is described in the FABEC FPC States Performance Process description, which is regularly updated.

Capacity planning

A weekly Rolling NOP, published every Friday has been introduced through which NM coordinates with all partners to ensure capacity is available at ACCs and in the airspace they manage, and on the ground at airports, to meet the expected traffic demand from the airlines on each day of the next six weeks enabling to coordinate all operational stakeholders throughout the pandemic to ensure that network actors can plan their recovery effectively based on predicted traffic levels.

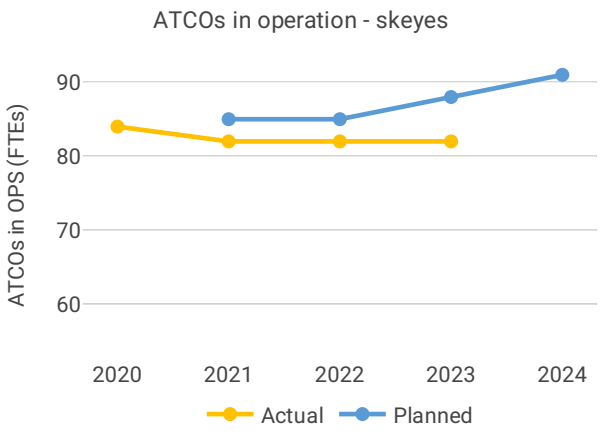
Application of Corrective Measures for Capacity (if applicable)

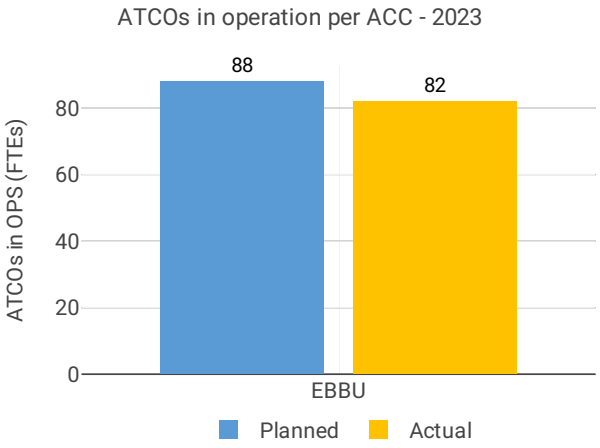
None. As the weather situation was considered to be exceptional, at this moment no specific measures were needed to be considered.

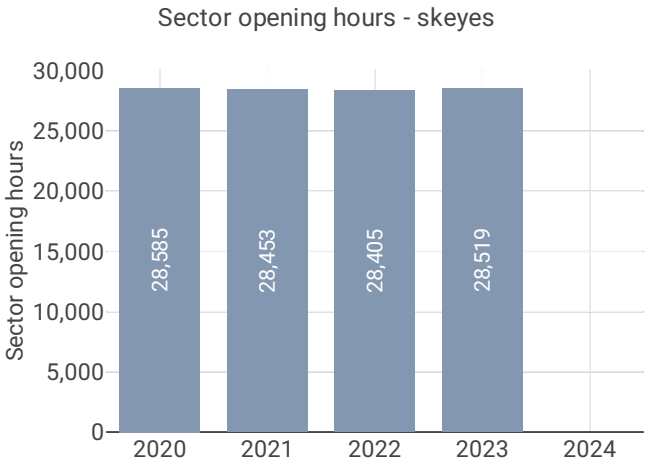
En route Capacity Incentive Scheme

Skeyes: No incentive scheme was applicable for Belgium in 2023 since the performance plan was only adopted in the same year.**MUAC**: No incentive scheme was applicable for Belgium in 2023 since the performance plan was only adopted in the same year.

4.2.2 Other indicators





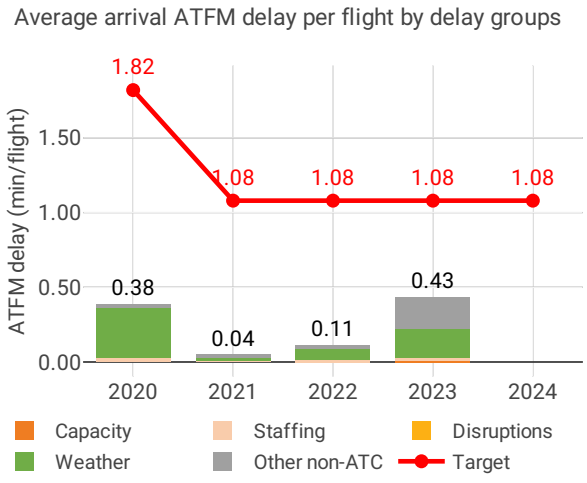


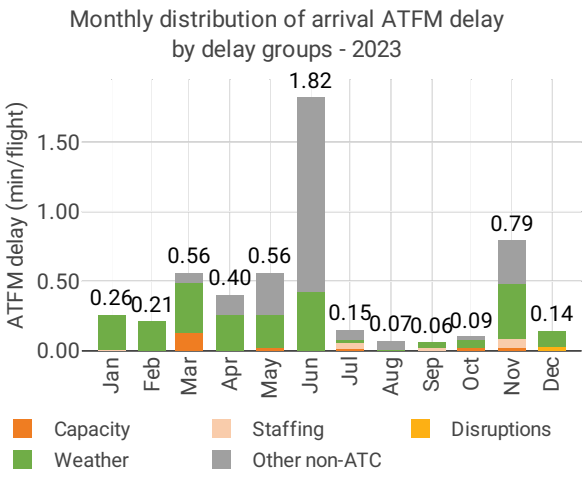
Focus on ATCOs in operations

skeyes: the difference in 2021 and 2022 was partially offset in 2023 by the arrival of new ATCOs who had completed their training and by the change in working arrangements for existing ATCOs.
MUAC: fewer ATCOs passed the course + more ATCOs extended their career.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





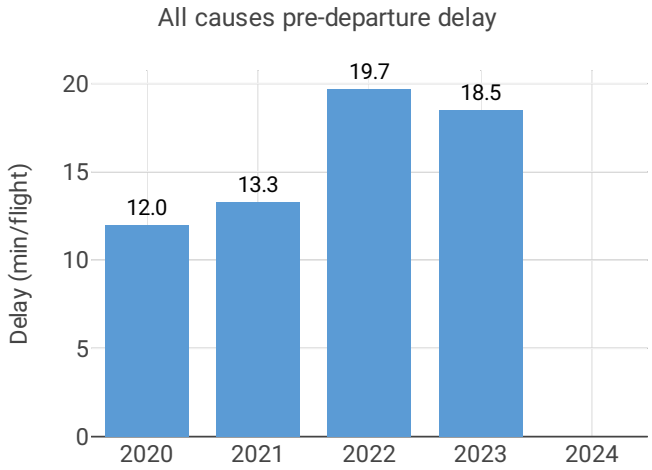
Focus on arrival ATFM delay

Belgium identifies only Brussels airport as subject to RP3 monitoring.
The Airport Operator Data Flow is fully established and the monitoring of pre-departure delays can be performed. The data quality of the pre-departure delay reporting, which did not allow the calculation of the ATC pre-departure delay in 2020 and 2021, improved allowing the calculation of this indicator in 2022 and 2023.
Traffic levels in 2023 were still 18% less than in 2019 at Brussels airport, despite the 8% increase with respect to 2022.
Average arrival ATFM delays in 2023 was 0.43 min/arr, compared to 0.11 min/arr in 2022. The national target was met.
ATFM slot adherence is very stable (2023: 95.6%; 2022: 95.5%)

ATFM arrival delays at Brussels have increased in 2023 (EBBR; 2019: 0.90 min/arr; 2020: 0.38 min/arr; 2021: 0.04 min/arr; 2022: 0.11 min/arr; 2023: 0.43 min/arr). Most of these delays were attributed to Aerodrome Capacity (47%) followed by weather (44%).

The Belgian performance plan sets a national target on arrival ATFM delay for 2023 of 1.08 min/arr. This target was met with an actual performance of 0.43 min/arr.
The incentive scheme uses modulated pivot values limited CRSTMP delay causes. This pivot value for CRSTMP is 0.12 min/arr in 2023. According to the attribution of the regulation reason, the actual CRSTMP value for 2023 is 0.036 min/arr. The NSA however mentions in the monitoring report that *As the Belgium PP was only adopted in 2023 this incentive scheme is not applicable.*

4.3.2 Other terminal performance indicators (PI#1-3)



Airport level

	Avg arrival ATFM delay (KPI#2)				Slot adherence (PI#1)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Brussels	0.38	0.04	0.11	0.43	97.4%	96.6%	95.5%	95.6%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Brussels	0.35	0.45	0.57	0.64	13.9	15.3	20.6	19.3

Focus on performance indicators at airport level

ATFM slot adherence

Brussels ATFM slot compliance in 2023 was 95.6%
With regard to the 4.4% of flights that did not adhere, 2.6% was early and 1.7% was late.
The Belgian monitoring report highlights that *national level and main national individual airports involved are above the 80% threshold of compliance.*

ATC pre-departure delay

ATC pre-departure delay at Brussels increased in 2023 (EBBR: 2022: 0.57 min/dep; 2023: 0.63 min/dep) but it is still below the pre-pandemic value (0.78 min/dep).

All causes pre-departure delay

The total (all causes) delay in the actual off block time at Brussels decreased in 2023 (EBBR: 2020: 13.88 min/dep.; 2021: 15.29 min/dep.; 2022: 20.59 min/dep.; 2023: 19.3 min/dep.) and sits just above the SES average of 19.15 min/dep.
According to the Belgian monitoring report: *Skeyes focusses its effort on the reduction of ATFM delays which are directly under the control of ANSP.*
All cause departure delay is very generic and ATFM delay is only a small contributor. Departure delay can be generated by ATFM en-route delay (not only local airport, but the complete Network) but also reactionary and turnaround delay, technical issues with the aircraft, airport operations, problems with passengers and or luggage, etc. In other words, it is not always possible to address a specific reason as this delay is quite generic.

5 COST-EFFIENCY - BELGIUM

5.1 PRB monitoring

• The en route 2023 actual unit cost of Belgium-Luxembourg was 88.09 €2017, -2.5% lower than the determined unit cost (90.34 €2017). The terminal actual unit cost of Belgium was 234.71 €2017, -2.1% lower than the determined unit cost (239.73 €2017). The terminal actual unit cost of Luxembourg was 263.82 €2017, +14% higher than the determined unit cost (231.72 €2017).

• The en route 2023 actual service units (2.45M) were +1.8% higher than the determined service units (2.40M).

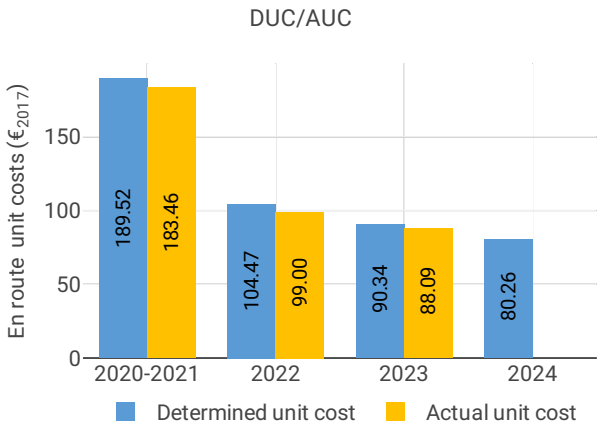
• The en route 2023 actual total costs were -1.7 M€2017 (-0.8%) lower compared to determined. The gap was mainly attributable to lower other operating costs (-4.6 M€2017, or -10%). The NSA explained that the lower other operating costs resulted from utility expenses decreasing more rapidly than anticipated in 2023, following a steep increase in the previous year.

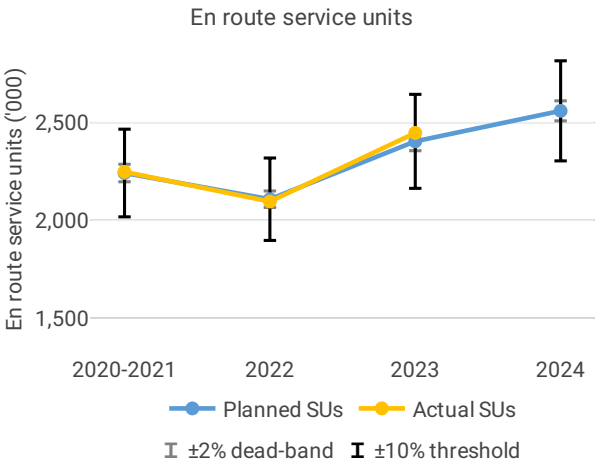
• skeyes spent 12 M€2017 in 2023 related to costs of investments for en route charging zone, which was more than determined (+0.4 M€2017, or +3.4%). According to the NSA, this overspend is due to the "decommissioning of equipment (ISAAC SR4, old WAN)" which was not foreseen in the performance plan, resulting in an overspent of depreciation costs (+0.4 M€2017, or +4.8%).

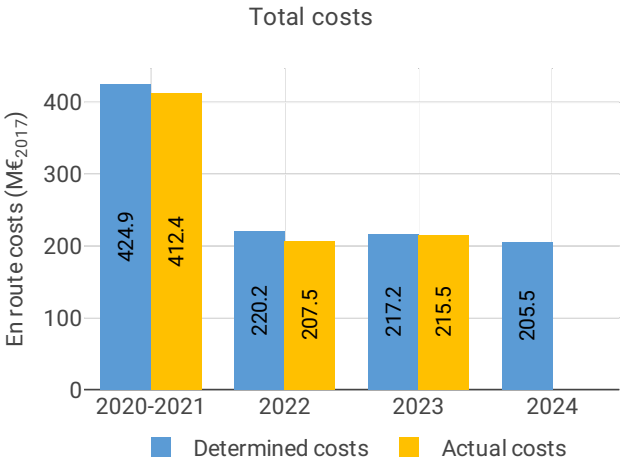
• The en route actual unit cost incurred by users of Belgium-Luxembourg in 2023 was 106.60€ (-2.2% below the 2023 DUC), while the terminal actual unit cost incurred by users was 214.99€ (-26% below the 2023 DUC) for Belgium and 236.97€ (-12% below the 2023 DUC) for Luxembourg. The difference between the AUCU and the DUC for the Belgium EBBR charging zone is strongly affected by the adjustment of other revenues (-11 M€).

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

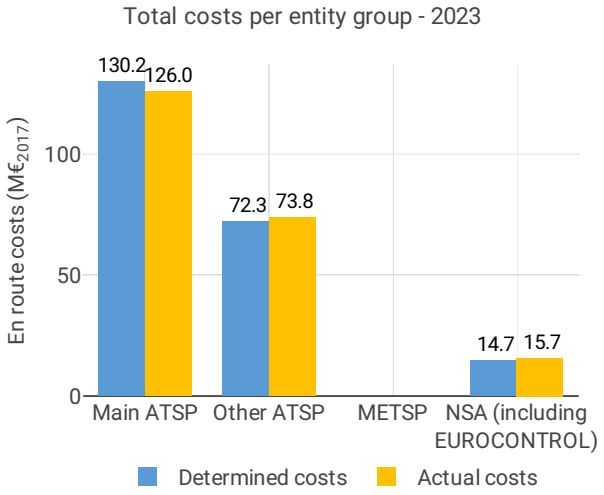


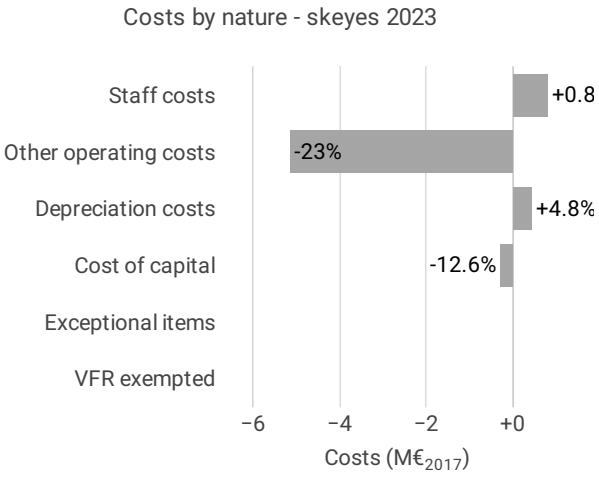




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	432	240	255	NA
Determined costs	442	250	262	252
Difference costs	-10	-10	-8	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	7.8%	4.7%	2.1%
Determined inflation index	NA	115.6	123.9	126.5
Actual inflation rate	NA	10.3%	2.3%	NA
Actual inflation index	NA	118.3	121	NA
Difference inflation index (p.p.)	NA	+2.7	-2.8	NA





Focus on unit cost

AUC vs. DUC

In 2023, the en route AUC was -2.5% (or -2.25 €2017) lower than the planned DUC. This results from the combination of higher than planned TSUs (+1.8%) and slightly lower than planned en route costs in real terms (-0.8%, or -1.7 M€2017).

En route service units

The difference between actual and planned TSUs (+1.8%) falls inside the ±2% dead band. Hence gain of additional en route revenues is kept by the ANSPs.

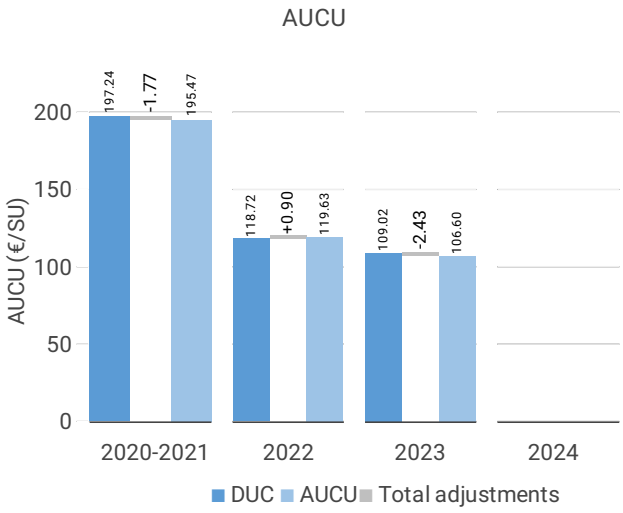
En route costs by entity

Actual real en route costs are -0.8% (-1.7 M€2017) lower than planned. This is the result of lower costs for the main ANSP, skeyes (-3.2%, or -4.2 M€2017) and higher costs for the NSA/EUROCONTROL (+7.1%, or +1.1 M€2017) and the other ANSPs (ANA and MUAC, +2.1%, or +1.5 M€2017).

En route costs for the main ANSP at charging zone level

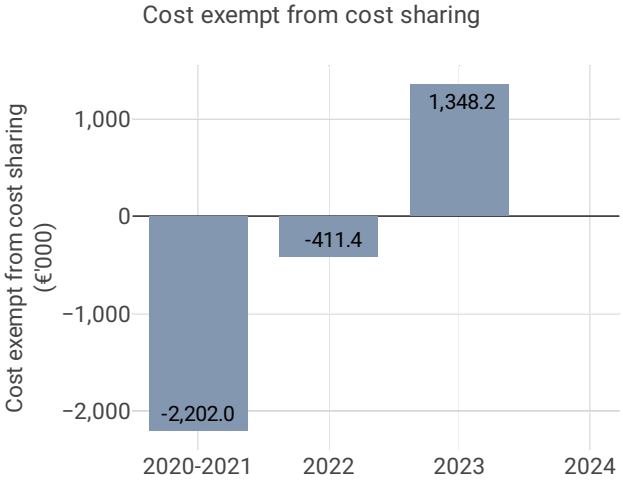
Lower than planned en route costs in real terms for skeyes in 2023 (-3.2%, or -4.2 M€2017) result from:
- Slightly higher staff costs (+0.8%) due to inflation index impact (-2.8 p.p.) since in nominal terms staff costs are lower than planned by -1.5%;
- Significantly lower other operating costs (-23.0%), primarily due to lower utility costs. Energy costs, which had risen sharply in 2022 due to the economic crisis and the war in Ukraine, decreased more quickly than expected in 2023. Additionally, some revenues were deducted from the 2023 actual cost base, including financial revenues, a SESAR subsidy, and a reversed provision for a legal dispute that was no longer necessary (these costs were not originally included in the plan);
- Higher depreciation (+4.8%), "*mainly due to additional depreciation costs after decommissioning of equipment (ISAAC SR4, old WAN), which was not foreseen in the performance plan*"; and,
- Significantly lower cost of capital (-12.6%), mainly due to a lower fixed asset base.

5.2.2 Actual unit cost incurred by the users (AUCU) (PI#1)



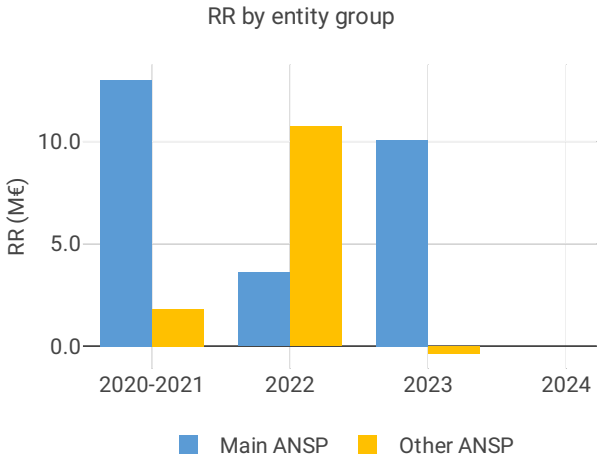
AUCU components (€/SU) – 2023

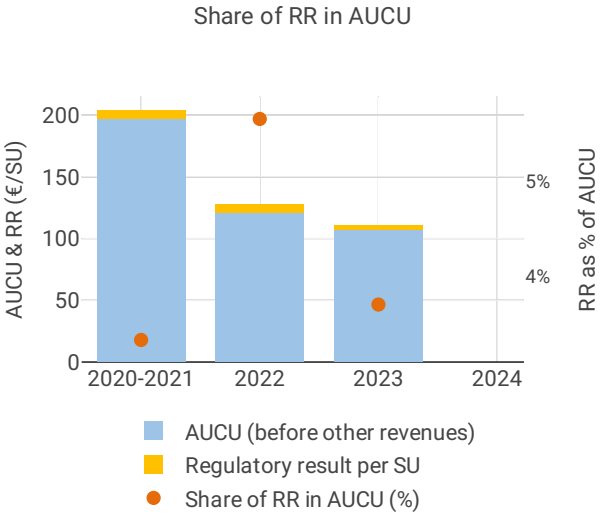
Components of the AUCU in 2023	€/SU
DUC	**109.02**
Inflation adjustment	-2.17
Cost exempt from cost-sharing	0.55
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	-0.17
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.64
Application of lower unit rate	0.00
Total adjustments	-2.43
AUCU	**106.60**
AUCU vs. DUC	**-2.2%**

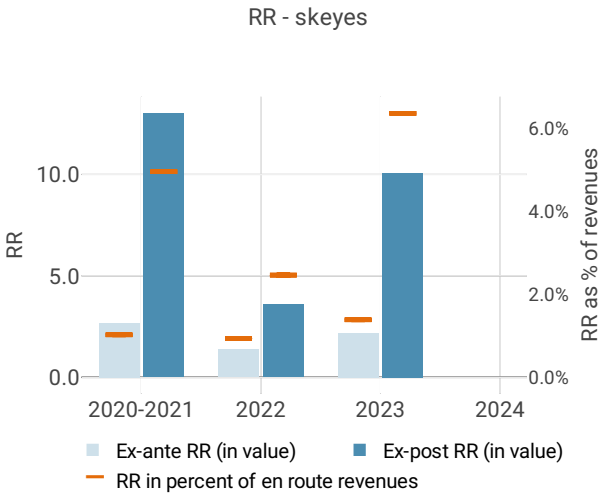


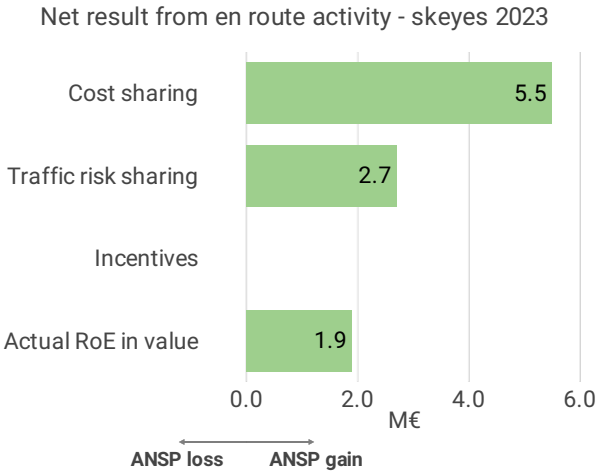
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	327.6	0.13
Competent authorities and qualified entities costs	28.8	0.01
Eurocontrol costs	1,016.6	0.42
Pension costs	-24.9	-0.01
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**1,348.2**	**0.55**

5.2.3 Regulatory result (RR)









Focus on regulatory result

skeyes net gain on activity in the Belgium-Luxembourg en route charging zone in the year 2023

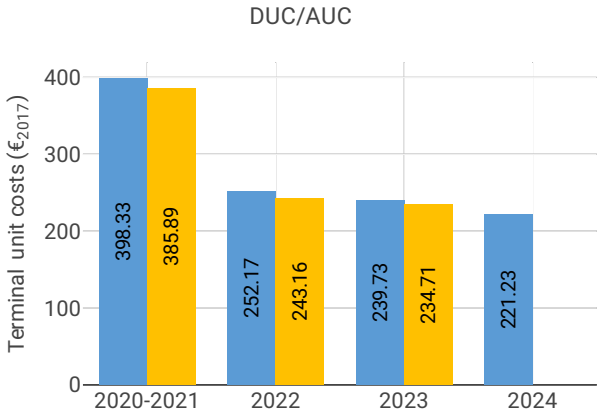
skeyes reported a net gain of +8.2 M€, as a combination of a gain of +5.5 M€ arising from the cost sharing mechanism, with a gain of +2.7 M€ arising from the traffic risk sharing mechanism.

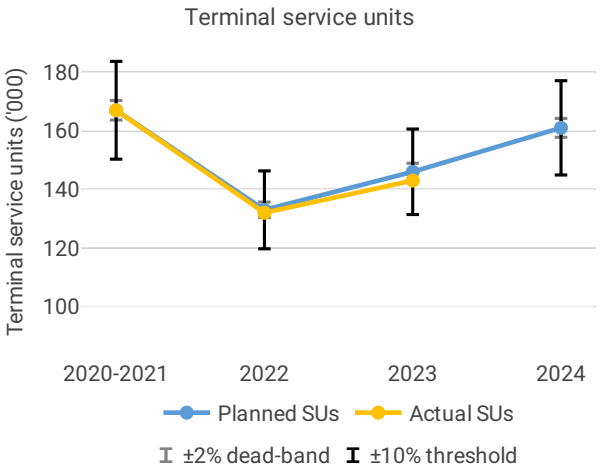
skeyes overall regulatory results (RR) for the en route activity

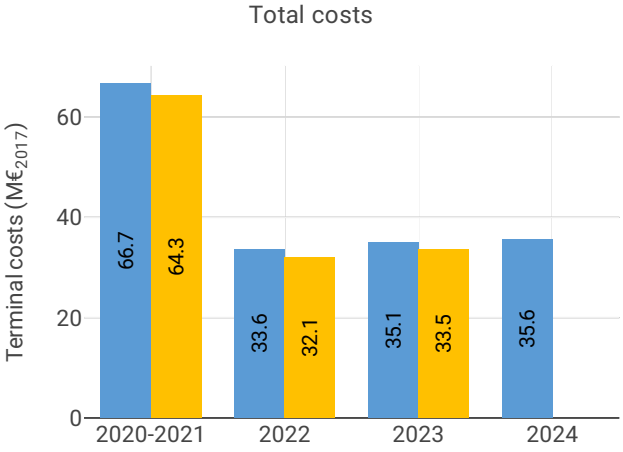
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+8.2 M€) and the actual RoE (+1.9 M€) amounts to +10.1 M€ (6.4% of the en route revenues). The resulting ex-post rate of return on equity is 19.9%, which is higher than the 3.8% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

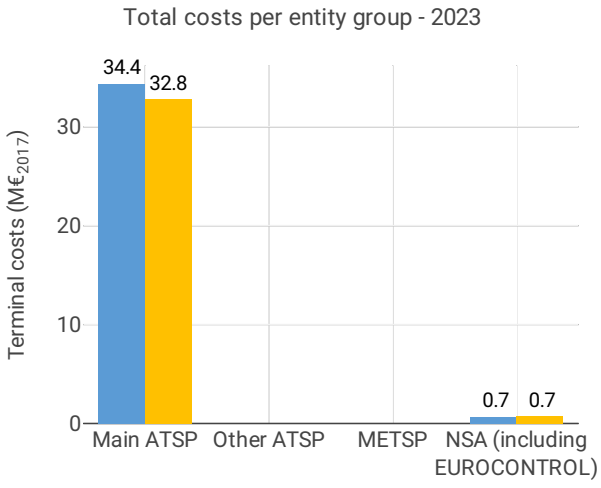


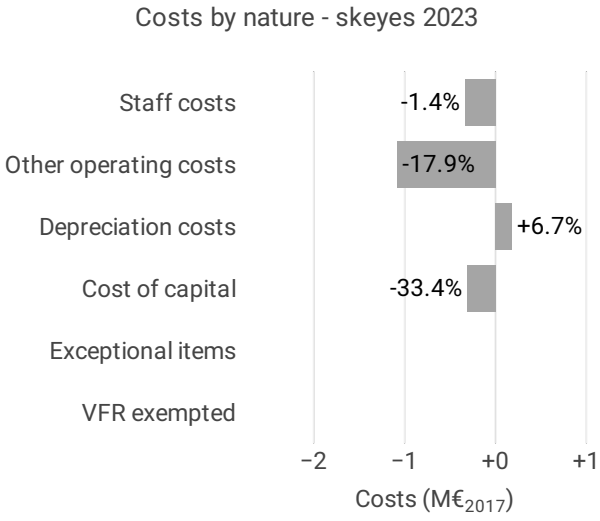




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	67	37	40	NA
Determined costs	70	38	42	44
Difference costs	-2	-1	-3	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	7.8%	4.7%	2.1%
Determined inflation index	NA	115.6	123.9	126.5
Actual inflation rate	NA	10.3%	2.3%	NA
Actual inflation index	NA	118.3	121	NA
Difference inflation index (p.p.)	NA	+2.7	-2.8	NA





Focus on unit cost

AUC vs. DUC

In 2023, the terminal AUC was -2.1% (or -5.02 €2017) lower than the planned DUC. This results from the combination of lower than planned terminal costs in real terms (-4.4%, or -1.5 M€2017) and lower than planned TNSUs (-2.3%).

Terminal service units

The difference between actual and planned TNSUs (-2.3%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users.

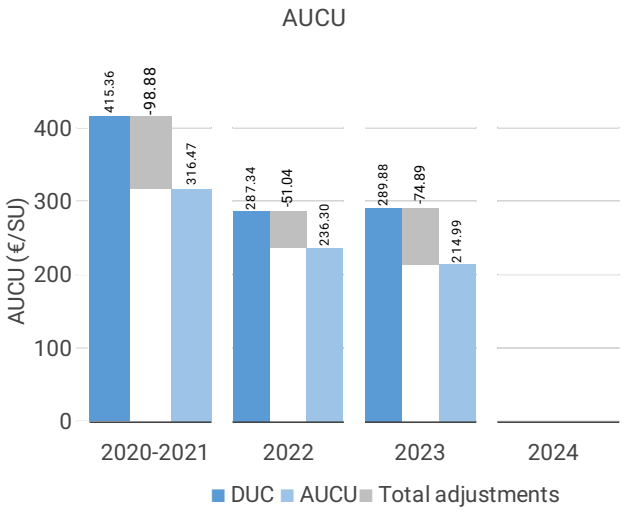
Terminal costs by entity

Actual real terminal costs are -4.4% (-1.5 M€2017) lower than planned. This is the result of lower costs for the main ANSP, skeyes (-4.5%, or -1.5 M€2017). Costs for the NSA are higher (+2.8%, or +0.02 M€2017) than planned.

Terminal costs for the main ANSP at charging zone level

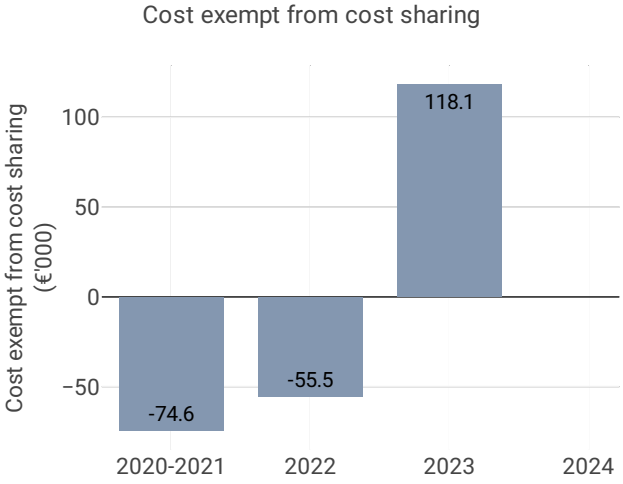
Lower than planned terminal costs in real terms for skeyes in 2023 (-4.5%, or -1.5 M€2017) result from:
- Slightly lower staff costs (-1.4% or -4% in nominal terms). No additional driver information has been provided apart of the lower inflation than expected.
- Significantly lower other operating costs (-17.9%), primarily due to lower utility costs. Energy costs, which had risen sharply in 2022 due to the economic crisis and the war in Ukraine, decreased more quickly than expected in 2023;
- Significantly higher depreciation (+6.7%) "*mainly due to additional depreciation costs after decommissioning of equipment (a.o. multilateration EBBR airport radar), which was not foreseen in the performance plan"*; and
- Significantly lower cost of capital (-33.4%) mainly due to a lower fixed asset base.

5.3.2 Actual unit cost incurred by the users (AUCU) (PI#1)



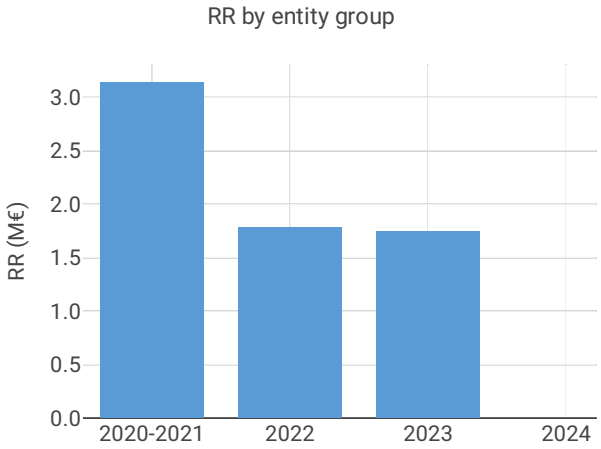
AUCU components (€/SU) – 2023

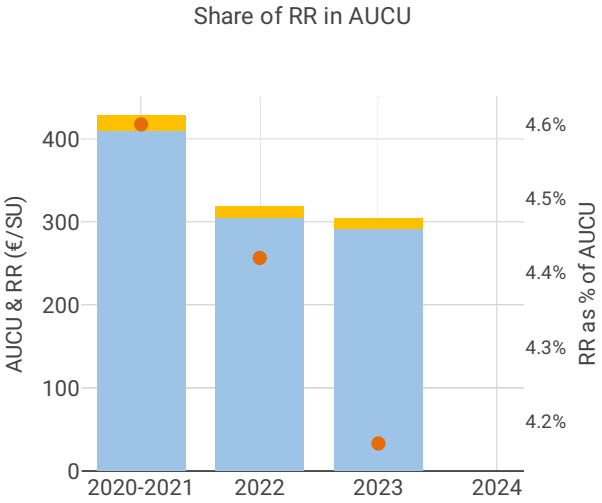
Components of the AUCU in 2023	€/SU
DUC	**289.88**
Inflation adjustment	-6.06
Cost exempt from cost-sharing	0.83
Traffic risk sharing adjustment	0.61
Traffic adj. (costs not TRS)	0.52
Finantial incentives	0.00
Modulation of charges	7.20
Cross-financing	0.00
Other revenues	-77.99
Application of lower unit rate	0.00
Total adjustments	-74.89
AUCU	**214.99**
AUCU vs. DUC	**-25.8%**

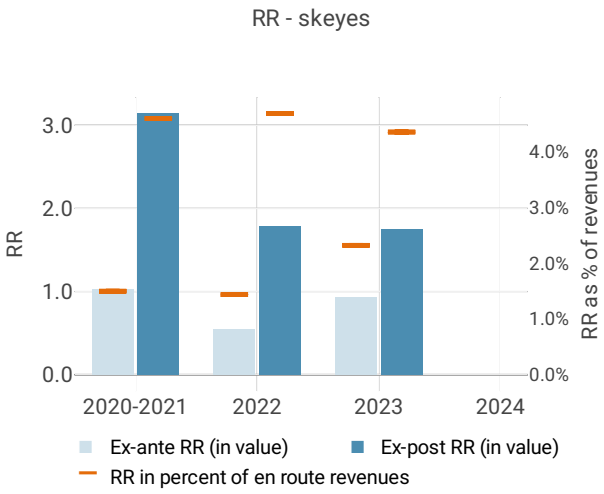


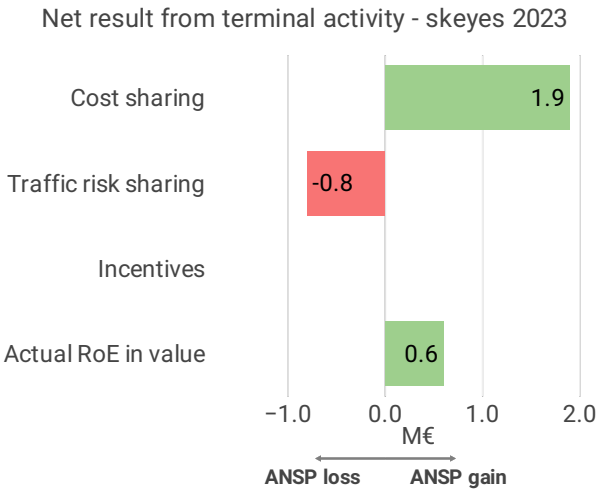
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	98.8	0.69
Competent authorities and qualified entities costs	19.2	0.13
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**118.1**	**0.83**

5.3.3 Regulatory result (RR)









Focus on regulatory result

skeyes net gain on activity in the Belgium terminal charging zone in the year 2023

skeyes reported a net gain of +1.1 M€, as a combination of a gain of +1.9 M€ arising from the cost sharing mechanism, with a loss of -0.8 M€ arising from the traffic risk sharing mechanism.

skeyes overall regulatory results (RR) for the Belgium terminal charging zone activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.1 M€) and the actual RoE (+0.6 M€) amounts to +1.7 M€ (4.3% of the terminal revenues). The resulting ex-post rate of return on equity is 10.7%, which is higher than the 3.8% planned in the PP.