PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Luxembourg - 2022

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2024/343 of 13 December 2023

List of ACCs 0

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

Exchange rate (1 EUR=)
2017: 1 EUR
2022: 1 EUR

Share of Union-wide:
- **traffic (TSUs) 2022** 1.9%
- **en route costs 2022** 3.5%

Share en route / terminal costs 2022 94% / 6%

En route charging zone(s)
Belgium-Luxembourg

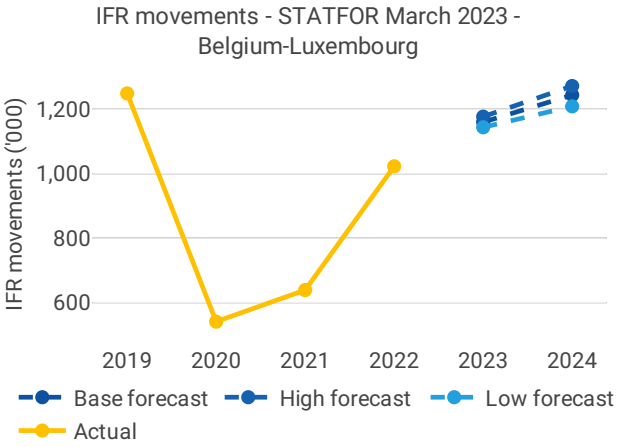
Terminal charging zone(s)
Luxembourg

Main ANSP
- ANA Lux

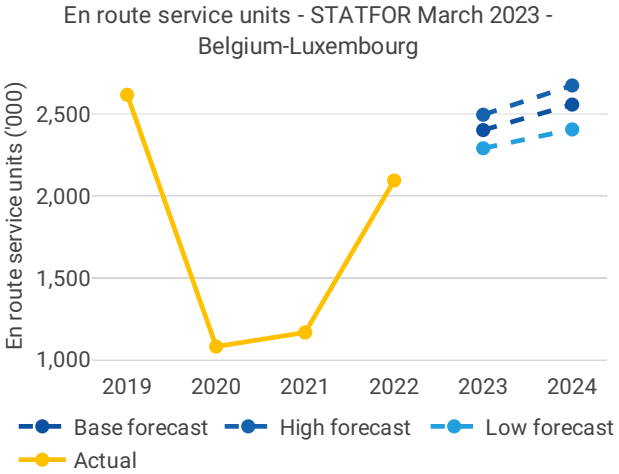
Other ANSPs
- skeyes
- MUAC

MET Providers
–

1.2 Traffic (En route traffic zone)

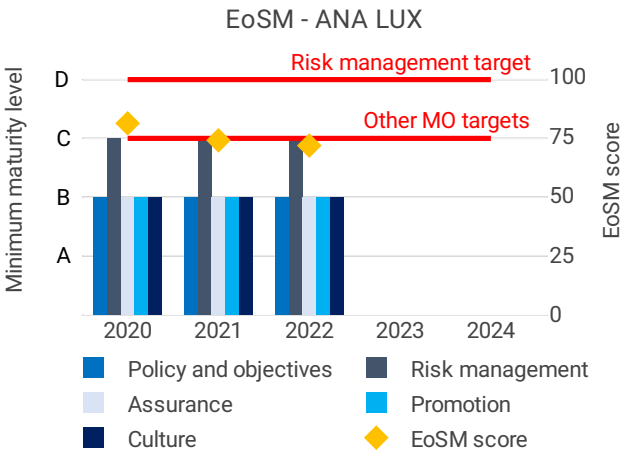


- The en route charging zone of Belgium-Luxembourg recorded 1,023K actual IFR movements in 2022, +60% compared to 2021 (639K).
- Actual 2022 IFR movements were -0.9% below the plan (1,033K).
- Actual 2022 IFR movements represent 82% of the actual 2019 level (1,249K).



- The en route charging zone of Belgium-Luxembourg recorded 2,096K actual en route service units in 2022, +80% compared to 2021 (1,167K).
- Actual 2022 service units were -0.5% above the plan (2,108K).
- Actual 2022 service units represent 80% of the actual 2019 level (2,620K).

1.3 Safety (Main ANSP)

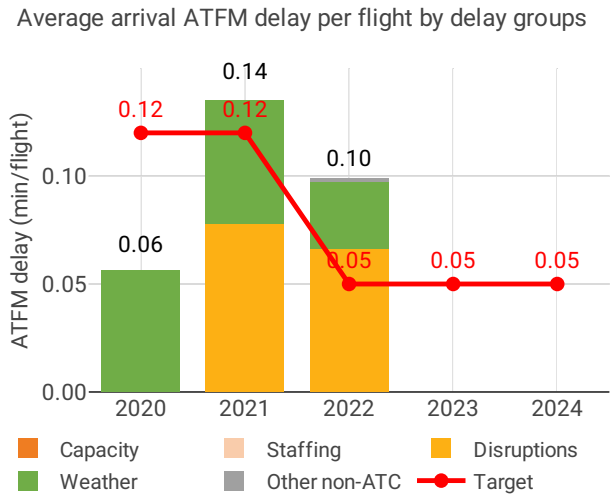


• ANA Lux did not achieve its planned maturity levels in 2022 and showed degrading performance compared with 2021. ANA Lux established a Corrective Action Plans addressing specific areas for improvements.

• The overall safety performance of ANA Lux was stable, the rate of occurrences was comparable with previous years and remained below the Union-wide average.

• ANA Lux could improve its safety management by implementing automated safety data recording systems.

1.4 Capacity (Member State)

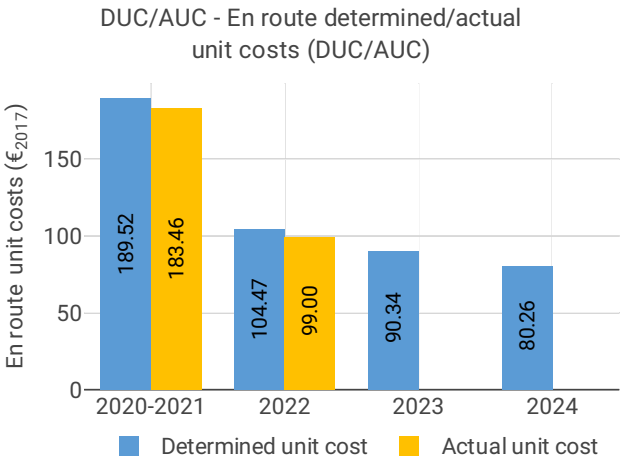


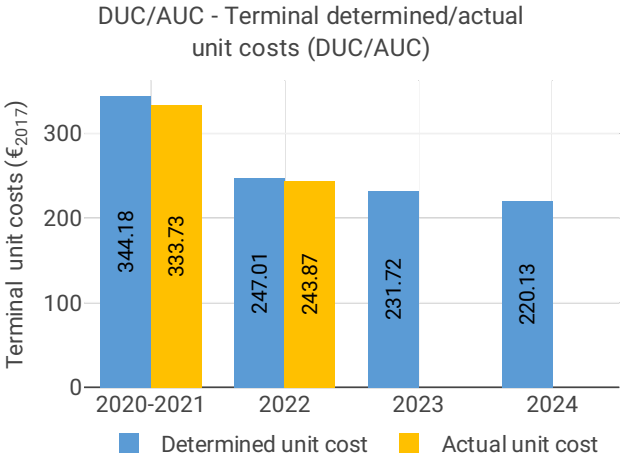
• Luxembourg registered 0.10 minutes of average airport arrival ATFM delay per flight during 2022, thus not achieving the local target of 0.05 (based on the latest submitted draft RP3 performance plan of Luxembourg).

• Compared to 2021, average arrival ATFM delays were 29% lower, while the number of IFR arrivals was 46% higher than in 2021.

• The leading cause of delays was ATC-related technical equipment issues, representing 67% of delays, while 32% of delays were related to adverse weather.

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





• The en route 2022 actual unit cost of Belgium-Luxembourg was 98.91 €2017, -5.3% lower than the determined unit cost (104.47 €2017).

• The terminal actual unit cost of Luxembourg was 243.87 €2017, -1.3% lower than the determined unit cost (247.01 €2017)

• The en route 2022 actual service units (2,096K) were in line with the determined service units (2,108K).

• The en route 2022 actual total costs were 13 M€2017 (-5.8%) lower compared to the determined, as all cost categories decreased.

• The decrease was mainly attributable to lower staff cost (-6.3 M€2017, or -4.0%) and other operating costs (-5.9 M€2017, or -12%). The reduced staff cost was due to lower staff costs in MUAC. The NSA explained that the lower other operating costs is a consequence of delayed investments.

• The en route actual unit cost incurred by users of Belgium-Luxembourg in 2022 was 119.54€, while the terminal actual unit cost incurred by users was 236.58€ for Belgium and 243.25€ for Luxembourg.

2 SAFETY - LUXEMBOURG

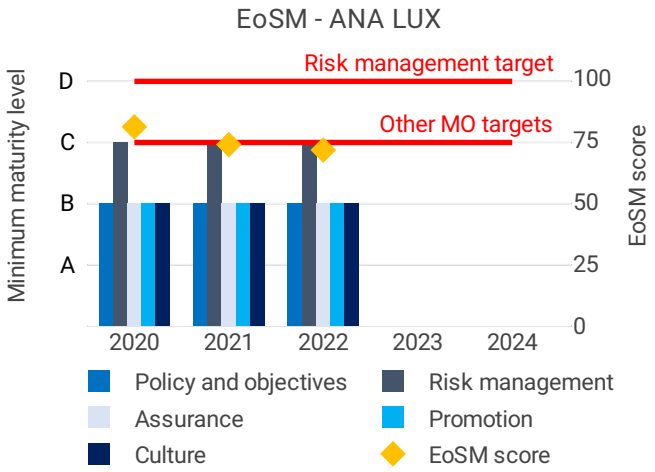
2.1 PRB monitoring

• ANA Lux did not achieve its planned maturity levels in 2022 and showed degrading performance compared with 2021. ANA Lux established a Corrective Action Plans addressing specific areas for improvements.

• The overall safety performance of ANA Lux was stable, the rate of occurrences was comparable with previous years and remained below the Union-wide average.

• ANA Lux could improve its safety management by implementing automated safety data recording systems.

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



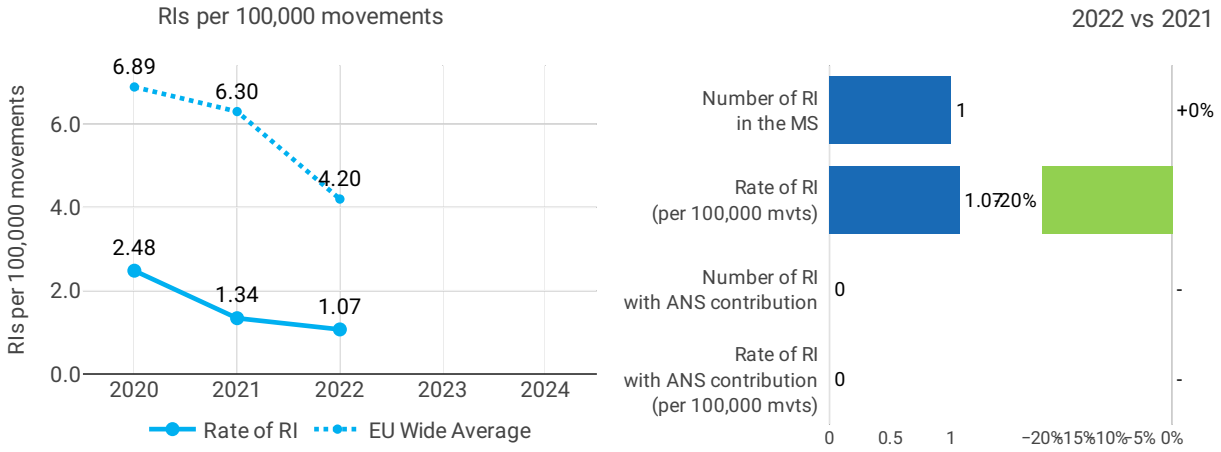
Focus on EoSM

All EoSM components remain below the RP3 target level. Compared with 2021, in 2022 a decrease of levels of maturity have been observed for five questions. Improvements in safety management in all components are to be seen during RP3 to achieve RP3 targets.

Detailed information on Safety performance monitoring for the year 2022 are included in Performance Review Body Monitoring Report 2022, Annex III – Safety report

2.3 Safety occurrences

2.3.1 Rate of runway incursions (RIs) (PI#1)



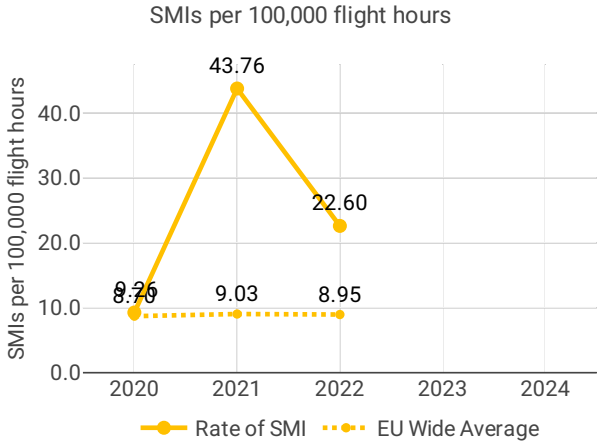
Rate of RIs per 100,000 airport movements - Luxembourg

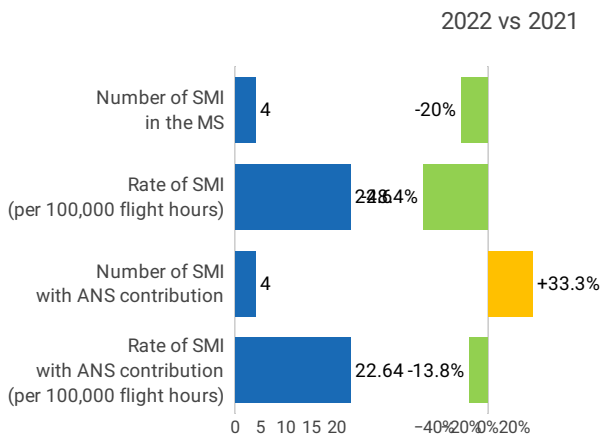
#	Airport name	APT movements	Number of RI	Rate RI per 100,000
1	Luxembourg	93,341	0	0.00

Focus on runway incursions

Detailed information on Safety performance monitoring for the year 2022 are included in Performance Review Body Monitoring Report 2022, Annex III – Safety report

2.3.2 Rate of separation minima infringements (SMIs) (PI#2)





Rate of SMI with ANS contribution per 100,000 flight hours

		Flight hours					Number of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	ANA LUX	5,067	11,425	17,665	NA	NA	0	3	4	NA	NA

		Rate of SMI per 100,000 flight hours					% variation in rate of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	ANA LUX	0.0	43.8	22.6	NA	NA	NA	0%	-48%	NA	NA

Focus on separation minima

Detailed information on Safety performance monitoring for the year 2022 are included in Performance Review Body Monitoring Report 2022, Annex III – Safety report

2.3.3 Quality of occurences reporting

Detailed information on Safety performance monitoring for the year 2022 are included in Performance Review Body Monitoring Report 2022, Annex III – Safety report

2.4 Use of automated safety data recording system (ASDRS) (PI#3)

2022	
For RIs	For SMIs
✗	✗

Detailed information on Safety performance monitoring for the year 2022 are included in Performance Review Body Monitoring Report 2022, Annex III – Safety report

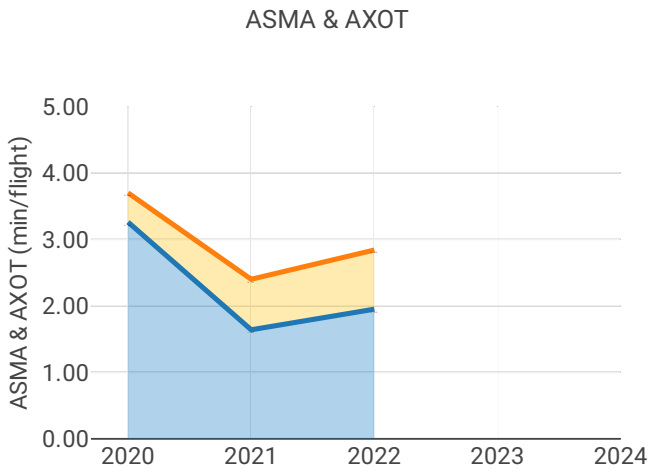
3 ENVIRONMENT - LUXEMBOURG

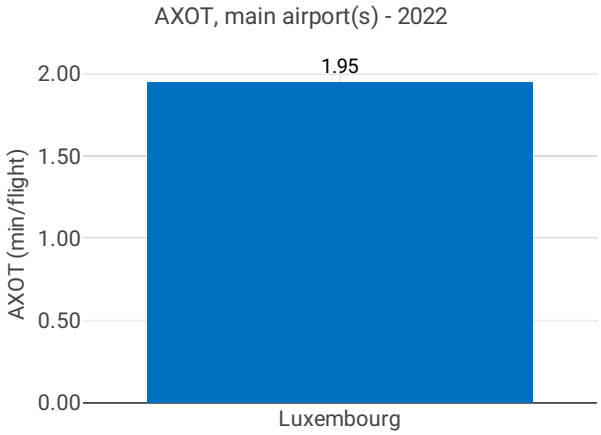
3.1 PRB monitoring

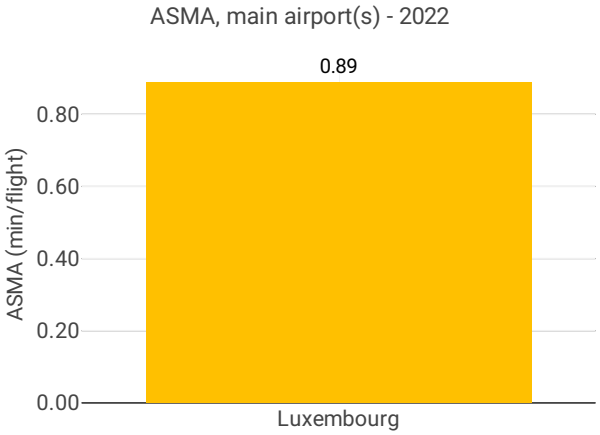
• Please refer to the KEA indicator for Belgium

3.2 Terminal performance

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







Focus on ASMA & AXOT

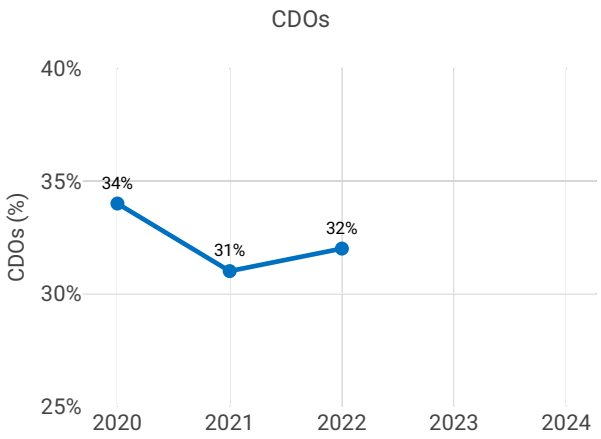
AXOT

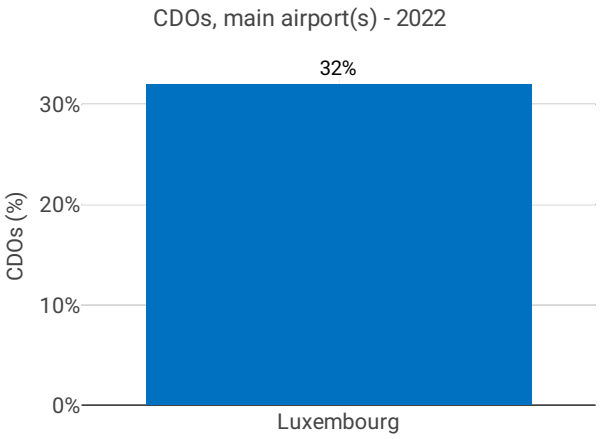
This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

ASMA

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

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





Focus CDOs

The share of CDO flights for Luxembourg is 31.6% which is an increase of 0.9 percentage points and above the overall RP3 value in 2022 (29.0%).
The monthly values stayed relatively stable during 2022.

Airport level

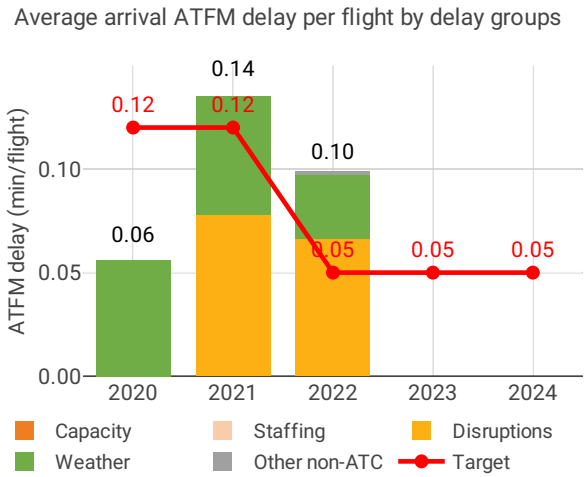
	Additional taxi-out time (PI#3)					Additional ASMA time (PI#4)					Share of arrivals applying CDO (PI#5)				
Airport Name	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Luxembourg	3.26	1.64	1.95	NA	NA	0.44	0.76	0.89	NA	NA	34%	31%	32%	NA	NA

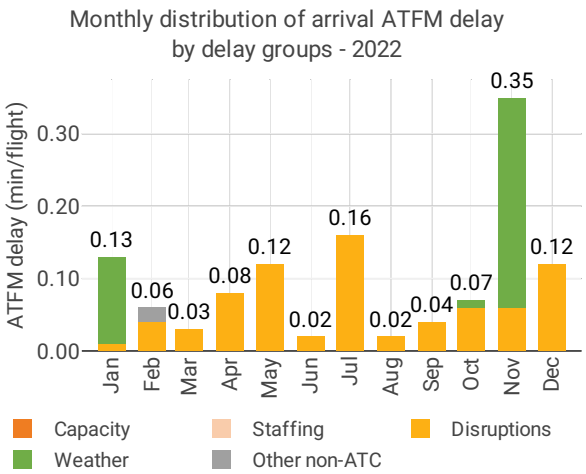
4 CAPACITY - LUXEMBOURG

4.1 PRB monitoring

4.2 Terminal performance

4.2.1 Arrival ATFM delay (KPI#2)





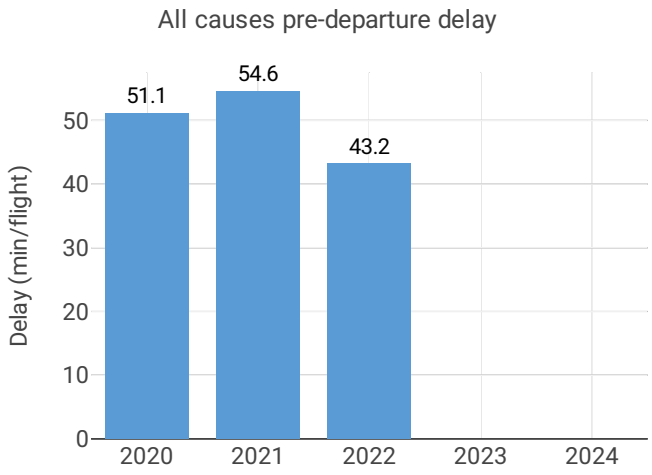
Focus on arrival ATFM delay

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic in 2022 was still 9% lower than in 2019 regardless the increase of 46% with respect to 2021. In accordance with IR (EU) 2019/317 and the traffic volume, pre-departure delays are not monitored at Luxembourg and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.
Average arrival ATFM delays in 2022 was 0.10 min/arr, compared to 0.14 min/arr in 2021. ATFM slot adherence has improved (2022: 94.1%; 2021: 93.4%).

Arrival ATFM delays at Luxembourg have decreased in 2022. 67% of all delays were attributed to equipment issues and distributed along the year. 32% of the delays were due to Weather, mostly in November and January.
According to Luxembourg's monitoring report: *The terminal ATFM arrival delay is mainly due to 2 factors: restrictions based on adverse weather (MET) conditions (low visibility procedures - LVP) and restrictions due to technical (TECH) problems. Whereas the MET conditions do not contribute, in a significant extend, to the fluctuations of the delay values (and the ANSP has no influence on this), the RADAR performance of Luxembourg surveillance (SURCHAIN)requires extended separation standard of 8NM as soon as one of the 4 sensors of ELLX RADAR network is unavailable. This 8NM separation request has a direct influence on the delays, as the IFR arrivals are mandatorily reduced to 12 arrivals/h. (instead of max 20 arrivals/h). Recommendations to the ANSP to rectify the situation: Implementation of the recommendation made by EUROCONTROL in its SUR study of the actual SUR infrastructure.*
3. Arrival ATFM Delay – National TargetThe national target on arrival ATFM delay in 2022 was met.
According to Luxembourg's monitoring report: *The underperformance of the SURCHAIN and its operational impact is known to the NSA, which is actively monitoring the situation through its national oversight activities. A set of recommendation to improve the overall SUR infrastructure has been made through an independent study made by EUROCONTROL. These recommendations have been integrated into the ANSP Project Management. Implementation is foreseen at the latest by 2025.*

Luxembourg's ATFM slot compliance was 94.1%, a slight improvement with respect to 2021 (93.4%). With regard to the 5.9% of flights that did not adhere, 1.8% was early and 4.1% was late.

4.2.2 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	2024	2020	2021	2022	2023	2024
Luxembourg	0.06	0.14	0.10	NA	NA	90.2%	93.4%	94.1%	NA%	NA%

	ATC pre departure delay (PI#2)					All causes pre departure delay (PI#3)				
Airport name	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Luxembourg	0.02	0.04	0.04	NA	NA	51.1	54.6	43.2	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Luxembourg.

ATC pre-departure delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Luxembourg.

All causes pre-departure delay

No data available: airport operator data flow not established, or more than two months of missing / non-validated data

5 COST-EFFICIENCY - LUXEMBOURG

5.1 PRB monitoring

• The en route 2022 actual unit cost of Belgium-Luxembourg was 98.91 €2017, -5.3% lower than the determined unit cost (104.47 €2017).

• The terminal actual unit cost of Luxembourg was 243.87 €2017, -1.3% lower than the determined unit cost (247.01 €2017)

• The en route 2022 actual service units (2,096K) were in line with the determined service units (2,108K).

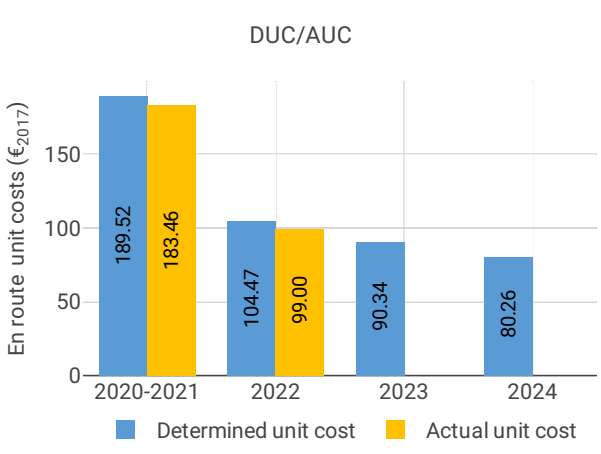
• The en route 2022 actual total costs were 13 M€2017 (-5.8%) lower compared to the determined, as all cost categories decreased.

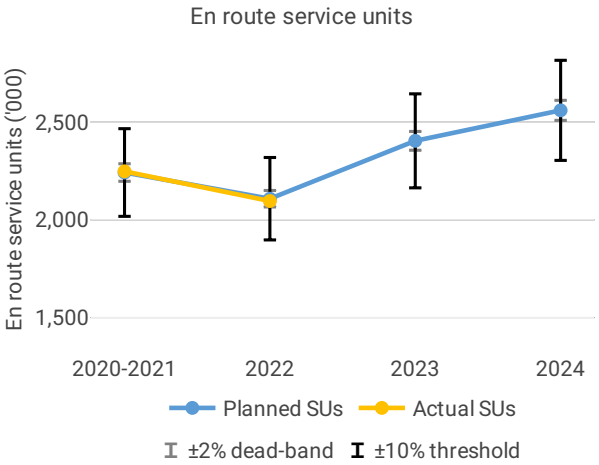
• The decrease was mainly attributable to lower staff cost (-6.3 M€2017, or -4.0%) and other operating costs (-5.9 M€2017, or -12%). The reduced staff cost was due to lower staff costs in MUAC. The NSA explained that the lower other operating costs is a consequence of delayed investments.

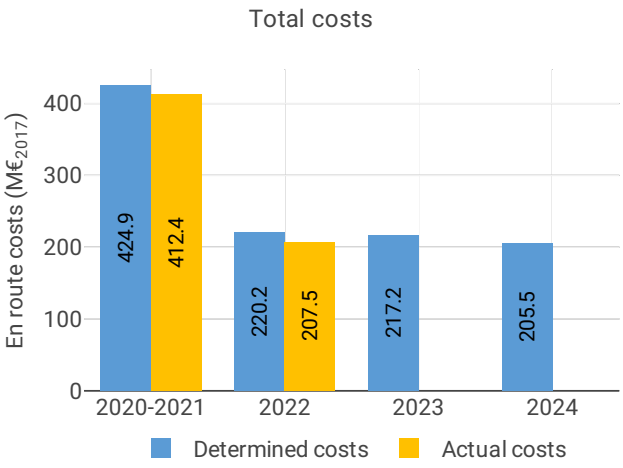
• The en route actual unit cost incurred by users of Belgium-Luxembourg in 2022 was 119.54€, while the terminal actual unit cost incurred by users was 236.58€ for Belgium and 243.25€ for Luxembourg.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

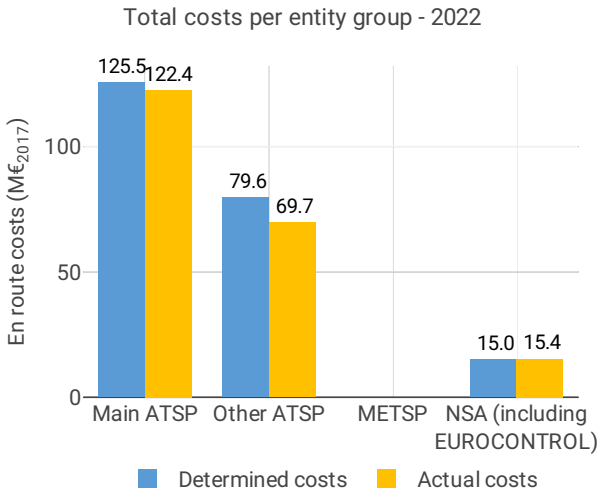


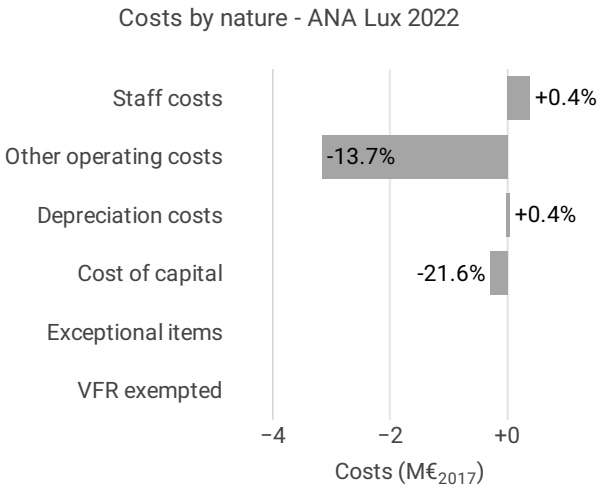




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	432	240	NA	NA
Determined costs	442	250	262	252
Difference costs	-10	-10	NA	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%	NA	NA
Actual inflation index	NA	118.3	NA	NA
Difference inflation index (p.p.)	NA	+2.7	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the en route AUC was -5.3% (or -5.56 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-5.8%, or -12.8 M€2017) and slightly lower than planned TSUs (-0.5%). It should be noted that actual inflation index in 2022 was +2.7 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-0.5%) falls inside the ±2% dead band. Hence loss of en route revenues is borne by the ANSPs

En route costs by entity

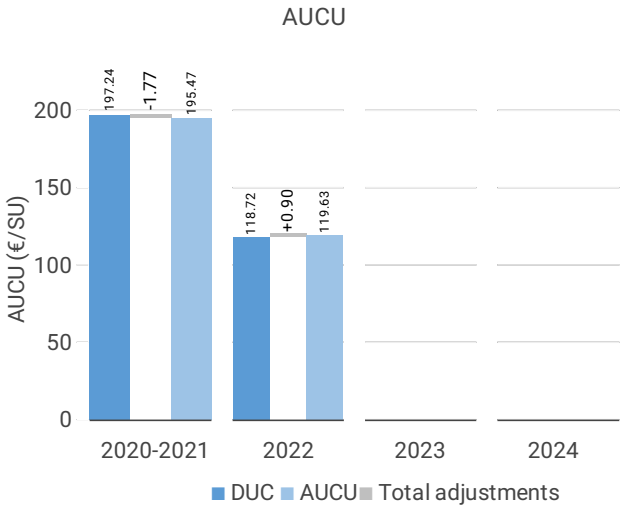
Actual real en route costs are -5.8% (-12.8 M€2017) lower than planned. This is the result of lower costs for the other ANSPs (ANA and MUAC, -12.5%, or -10.0 M€2017) and the main ANSP, skeyes (-2.4%, or -3.0 M€2017), while the NSA/EUROCONTROL costs are higher (+1.1%, or +0.2 M€2017) than planned.

En route costs for the main ANSP at charging zone level

Lower than planned en route costs in real terms for skeyes in 2022 (-2.4%, or -3.0 M€2017) result from:
- Slightly higher staff costs (+0.4%) in real terms, but in nominal terms the staff costs are higher than planned (+2.7%) mainly due to the Belgium automatic mandatory salary indexation of salaries based on the actual inflation (10.3%) which was higher that the planned (7.8%);
- Significantly lower other operating costs (-13.7%), due to delay of certain projects, which has negatively impacted the involvement of external support and license costs.

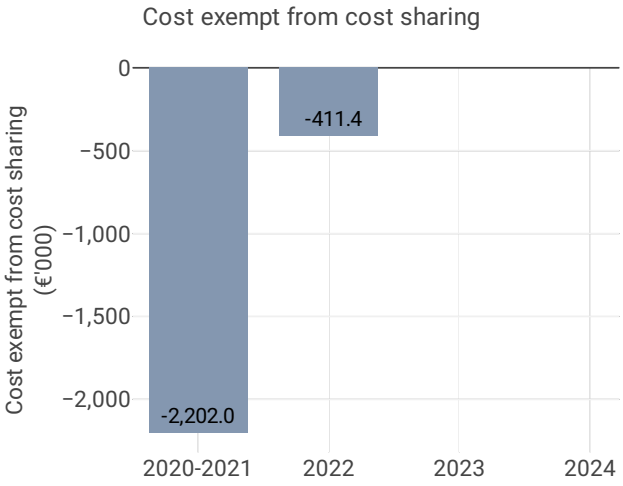
- Slightly higher depreciation (+0.4%),
- Significantly lower cost of capital (-21.6%), mainly due to a lower fixed asset base.

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



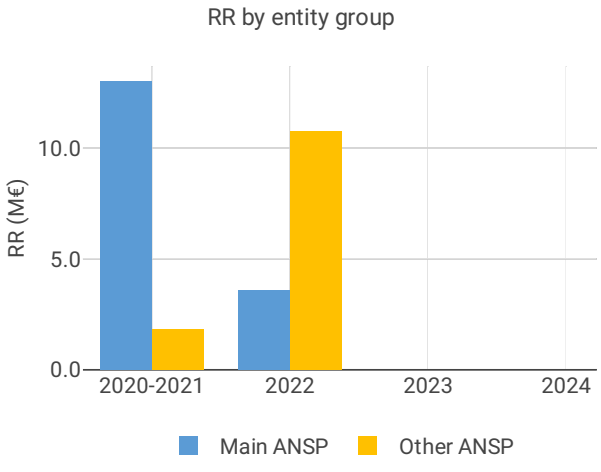
AUCU components (€/SU) – 2022

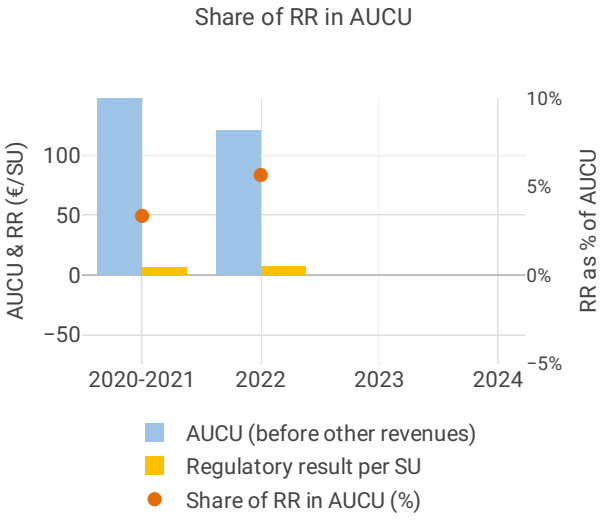
Components of the AUCU in 2022	€/SU
DUC	**118.72**
Inflation adjustment	2.46
Cost exempt from cost-sharing	-0.20
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	0.06
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-1.42
Application of lower unit rate	0.00
Total adjustments	0.90
AUCU	**119.63**
AUCU vs. DUC	**+0.8%**

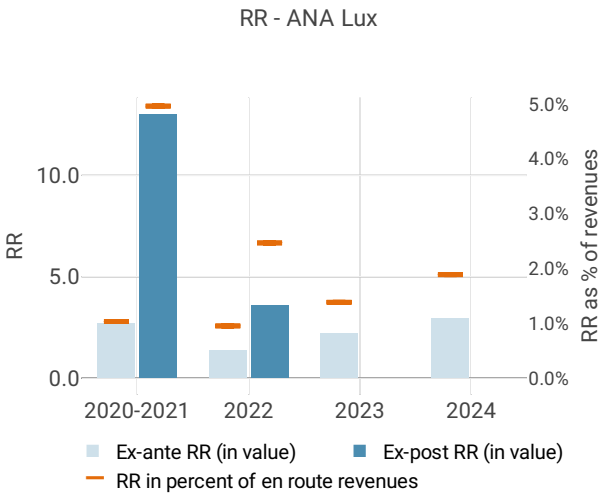


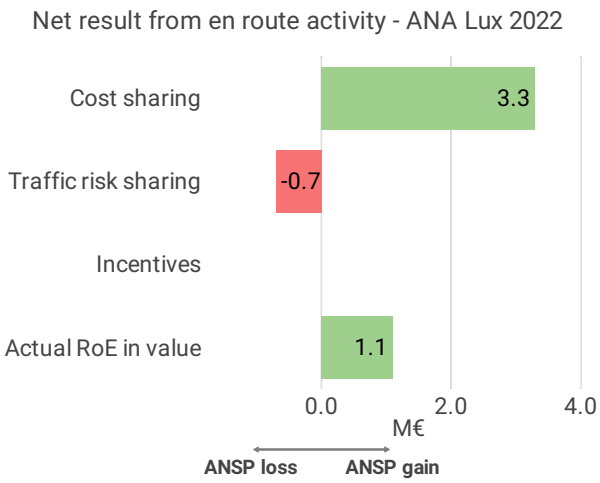
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-729.9	-0.35
Competent authorities and qualified entities costs	-27.4	-0.01
Eurocontrol costs	376.2	0.18
Pension costs	-30.3	-0.01
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-411.4**	**-0.20**

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 2022

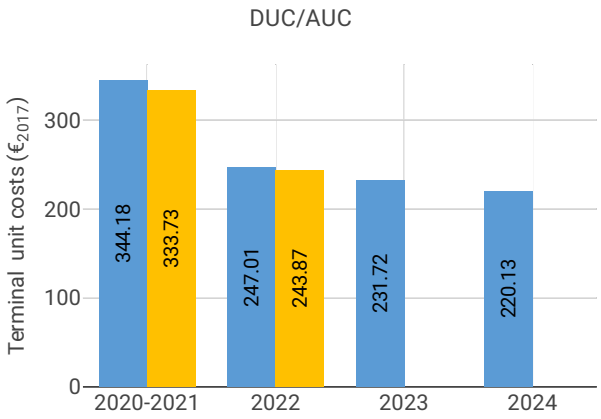
skeyes reported a net gain of +2.5 M€, as a combination of a gain of +3.3 M€ arising from the cost sharing mechanism, with a loss of -0.7 M€ arising from the traffic risk sharing mechanism.

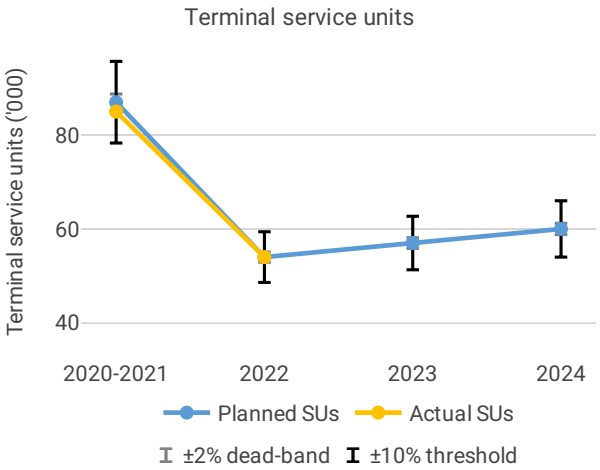
skeyes overall regulatory results (RR) for the en route activity

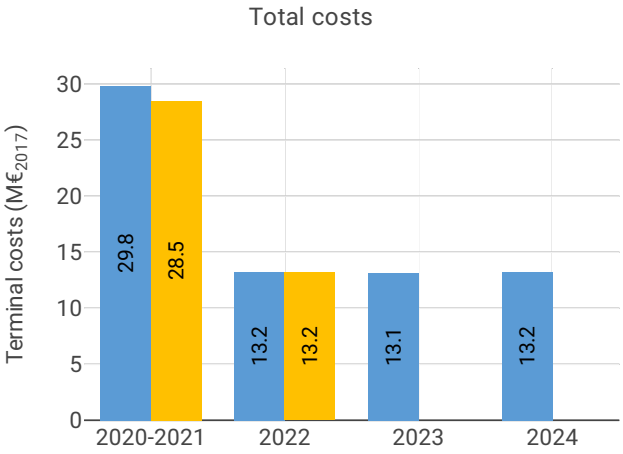
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+2.5 M€) and the actual RoE (+1.1 M€) amounts to +3.6 M€ (2.5% of the en route revenues). The resulting ex-post rate of return on equity is 8.4%, which is higher than the 2.5% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

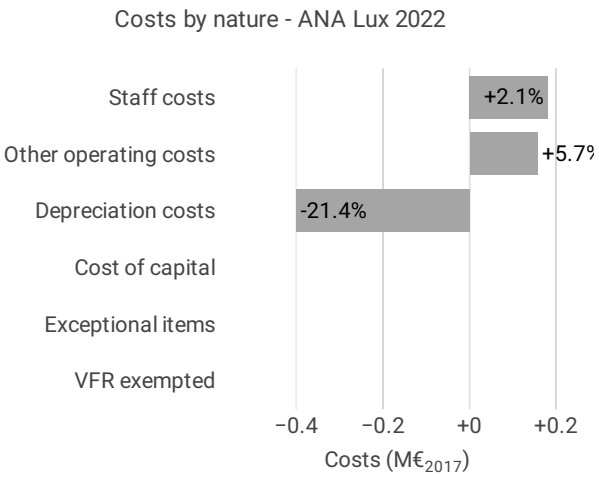






Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	30	15	NA	NA
Determined costs	31	15	15	16
Difference costs	-1	0	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	5.6%	2.6%	3.1%
Determined inflation index	NA	113.3	119.1	122.8
Actual inflation rate	NA	8.2%	NA	NA
Actual inflation index	NA	116.1	NA	NA
Difference inflation index (p.p.)	NA	+2.8	NA	NA



Focus on unit cost

AUC vs. DUC

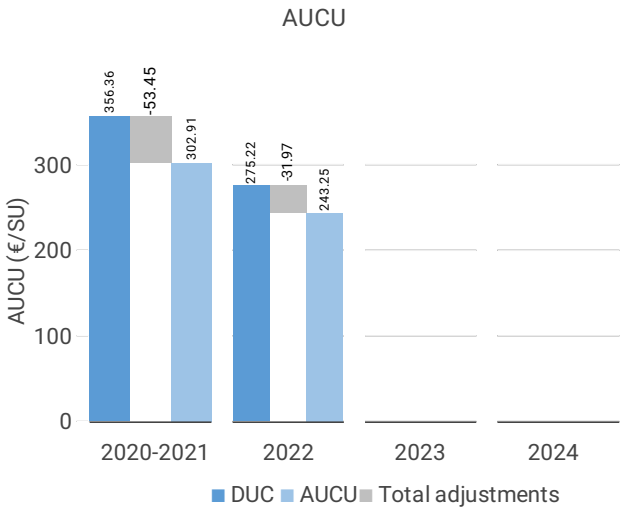
In 2022, the terminal AUC was -1.3% (or -3.14 €2017) lower than the planned DUC. This results from the combination of slightly higher than planned TNSUs (+0.8%) and slightly lower than planned terminal costs in real terms (-0.5%, or -0.1 M€2017). It should be noted that actual inflation index in 2022 was +2.8 p.p. higher than planned.

Terminal service units

Terminal costs by entity

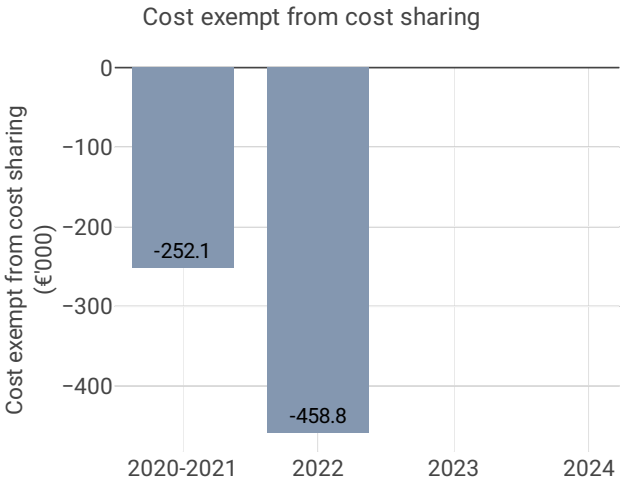
Terminal costs for the main ANSP at charging zone level

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



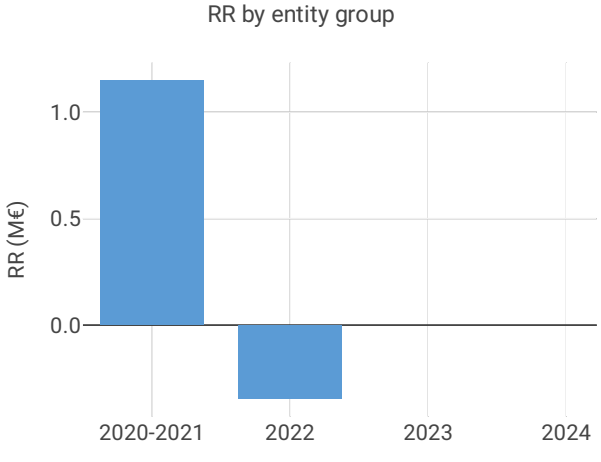
AUCU components (€/SU) – 2022

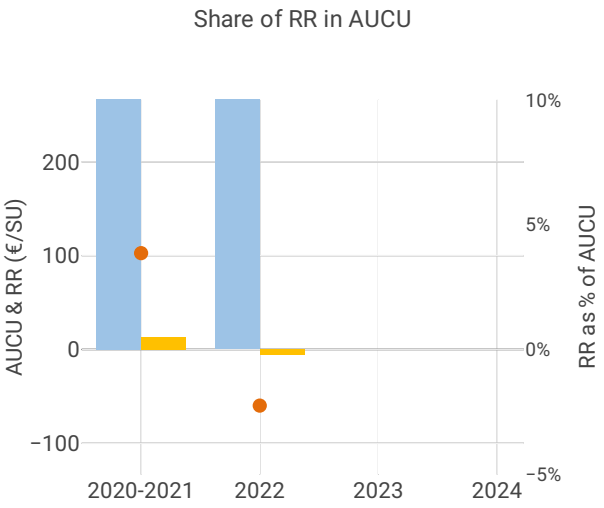
Components of the AUCU in 2022	€/SU
DUC	**275.22**
Inflation adjustment	5.80
Cost exempt from cost-sharing	-8.49
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	-0.26
Finantial incentives	0.00
Modulation of charges	11.41
Cross-financing	0.00
Other revenues	-40.43
Application of lower unit rate	0.00
Total adjustments	-31.97
AUCU	**243.25**
AUCU vs. DUC	**-11.6%**

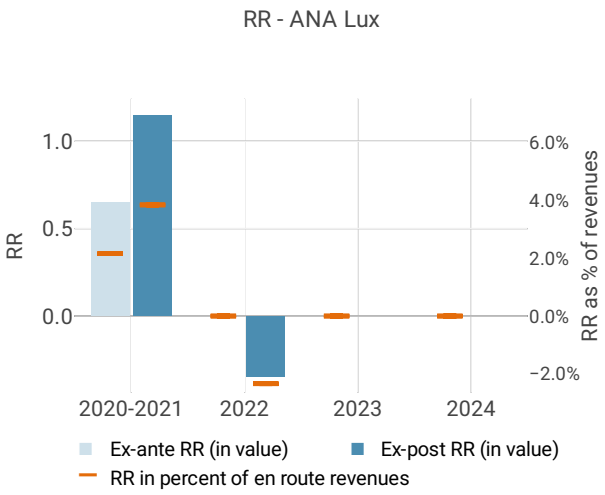


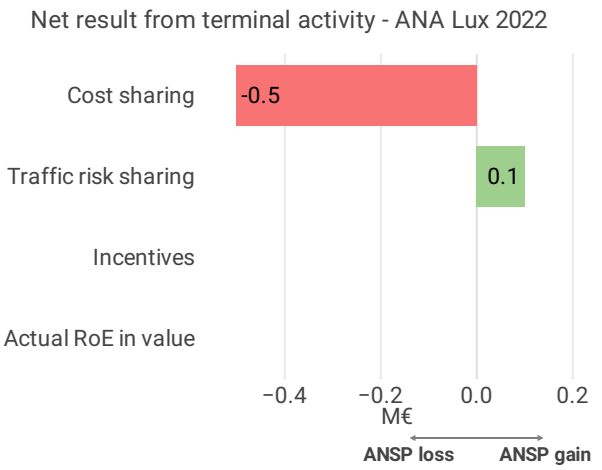
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-400.5	-7.41
Competent authorities and qualified entities costs	0.0	0.00
Eurocontrol costs	0.0	0.00
Pension costs	-58.3	-1.08
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-458.8**	**-8.49**

5.3.3 Regulatory result (RR)









Focus on regulatory result

ANA net gain on activity in the Luxembourg terminal charging zone in the year 2022

ANA reported a net loss of -0.3 M€, as a combination of a loss of -0.5 M€ arising from the cost sharing mechanism, with a gain of +0.1 M€ arising from the traffic risk sharing mechanism.

ANA overall regulatory results (RR) for the Luxembourg terminal charging zone activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-0.3 M€) amounts to -0.3 M€ (-2.3% of the terminal revenues), as the RoE for ANA has been set to zero. The resulting ex-post rate of return on equity is -2.2%.