



Performance Review Body Monitoring Report

Luxembourg - 2021

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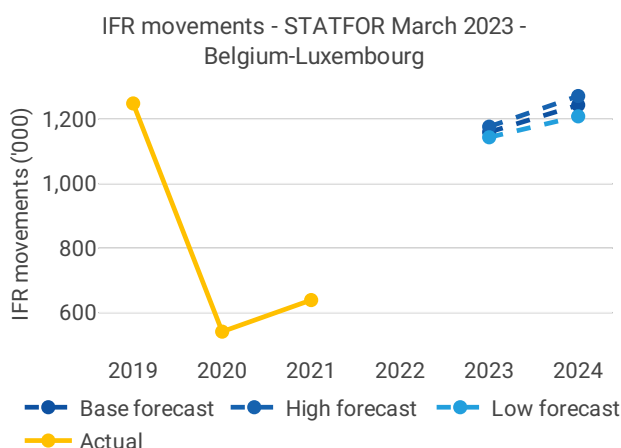
1 OVERVIEW

1.1 Contextual information

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

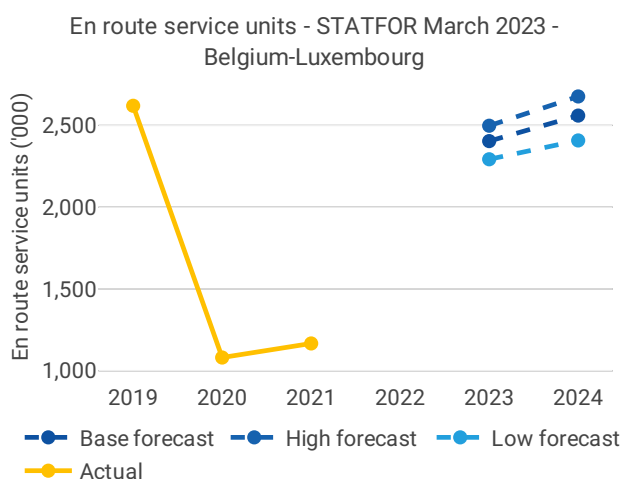
List of ACCs	0	Exchange rate (1 EUR=)		Main ANSP	
		2017: 1 EUR		• ANA Lux	
		2021: 1 EUR			
No of airports in the scope of the performance plan:		Share of Union-wide:		Other ANSPs	
• ≥80'K	0	• traffic (TSUs) 2021	1.7%	• skeyes	
• <80'K	1	• en route costs 2021	3.6%	• MUAC	
		Share en route / terminal costs 2021	94% / 6%	MET Providers	
		En route charging zone(s)		–	
		Belgium-Luxembourg			
		Terminal charging zone(s)			
		Luxembourg			

1.2 Traffic (En route traffic zone)



- The en route charging zone of Belgium-Luxembourg recorded 639K actual IFR movements in 2021, +18% compared to 2020 (541K).

- Actual 2021 IFR movements represent 51% of the actual 2019 level (1,249K).



- The en route charging zone of Belgium-Luxembourg recorded 1,167K actual en route service units in 2021, +8.0% compared to 2020 (1,081K).

- Actual 2021 service units represent 45% of the actual 2019 level (2,620K).

1.3 Safety (Main ANSP)



- ANA Lux did not achieve any of the targets in 2021 and its performance is lagging the expected improvements as per the performance plan. ANA Lux needs to improve in seven EoSM questions by the end of RP3.

- The NSA prepared and approved a corrective plan to improve the performances given that ANA Lux did not achieve its intermediate EoSM targets in two management objectives. The NSA closely supervises its implementation in the frame of its continuous oversight.

- ANA Lux uses the Occurrence Reporting Monitoring to report the safety occurrences. The specific

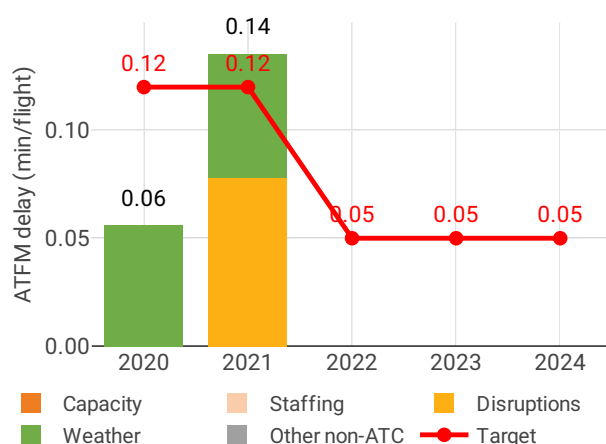
training programme was developed and implemented to improve awareness of occurrences both at the ground and air side.

- ANA Lux should improve its safety management by implementing automated safety data recording systems.

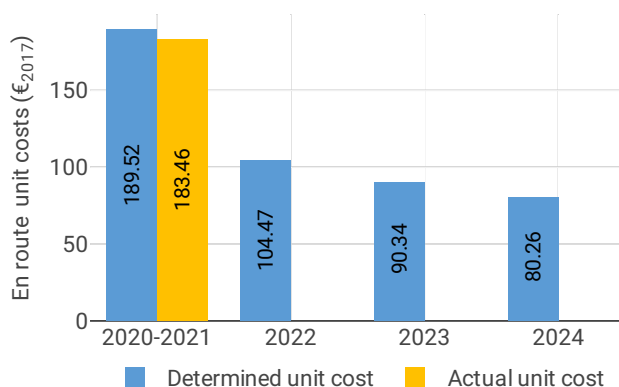
1.4 Capacity (Member State)

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

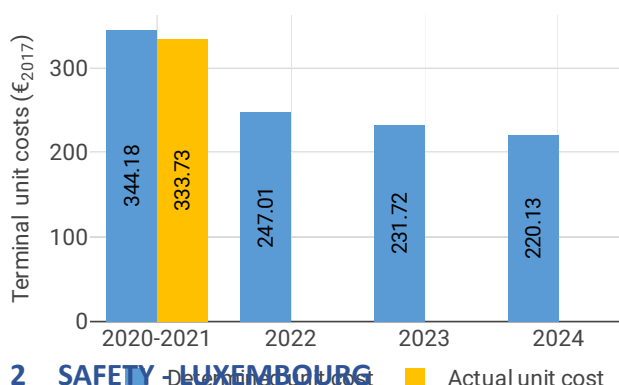
Average arrival ATFM delay per flight by delay groups



DUC/AUC - En route determined/actual unit costs (DUC/AUC)



DUC/AUC - Terminal determined/actual unit costs (DUC/AUC)



- The en route 2020/2021 actual unit cost of Belgium-Luxembourg was 183.46 €2017, -3.0% lower than the determined unit cost (189.52 €2017).

- The terminal actual unit cost of Luxembourg was 333.73 €2017, -3.0% lower than the determined unit cost (344.18 €2017).

- The en route 2021 actual service units (1,167K) were in line with the determined service units (1,161K).

- The en route 2021 actual total costs were -12 M€2017 (-5.5%) lower than determined, mainly due to lower other operating costs (-8.1 M€2017, or -15%) and lower staff costs (-3.1 M€2017, or -2.1%). The NSA did not provide explanations for the variations of costs.

- The en route actual unit cost incurred by users of Belgium-Luxembourg in 2020/2021 was 195.76€, while the terminal actual unit cost incurred by users was 324.46€ for Belgium and 303.05€ for Luxembourg.

2 SAFETY - LUXEMBOURG

2.1 PRB monitoring

- ANA Lux did not achieve any of the targets in 2021 and its performance is lagging the expected improvements as per the performance plan. ANA Lux needs to improve in seven EoSMT questions by the end of RP3.

- The NSA prepared and approved a corrective plan to improve the performances given that ANA Lux did not achieve its intermediate EoSMT targets in two management objectives. The NSA closely supervises its implementation in the frame of its continuous oversight.

- ANA Lux uses the Occurrence Reporting Monitoring to report the safety occurrences. The specific training programme was developed and implemented to improve awareness of occurrences both at the ground and air side.

- ANA Lux should improve its safety management by implementing automated safety data recording systems.

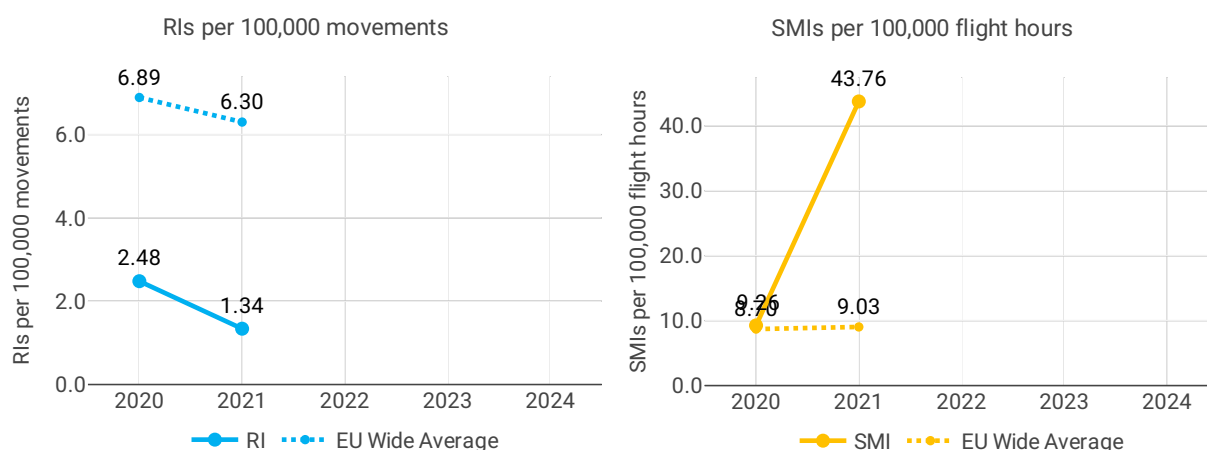
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)



Focus on EoSM

Decrease levels in maturity have been observed with respect 2020. All EoSM components remain below 2024 EoSM target levels. Improvements in safety management in all componenets are still expected during RP3 to achieve 2024 targets.

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



3 ENVIRONMENT - LUXEMBOURG

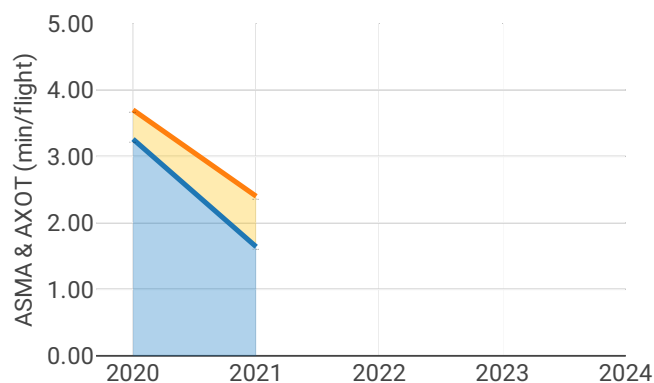
3.1 PRB monitoring

- Please refer to the KEA indicator for Belgium

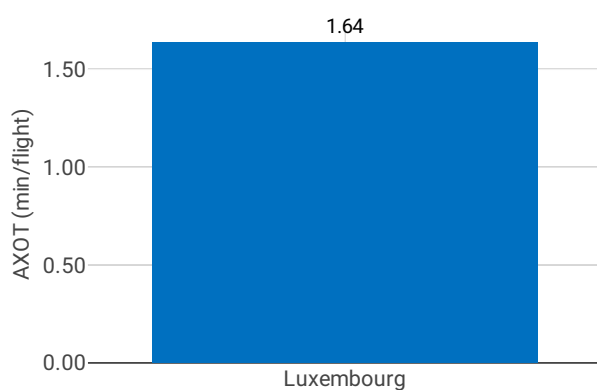
3.2 Terminal performance

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

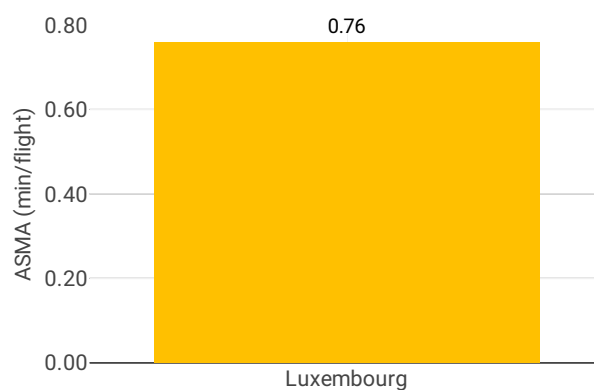
ASMA & AXOT



AXOT, main airport(s) - 2021



ASMA, main airport(s) - 2021



Focus on ASMA & AXOT

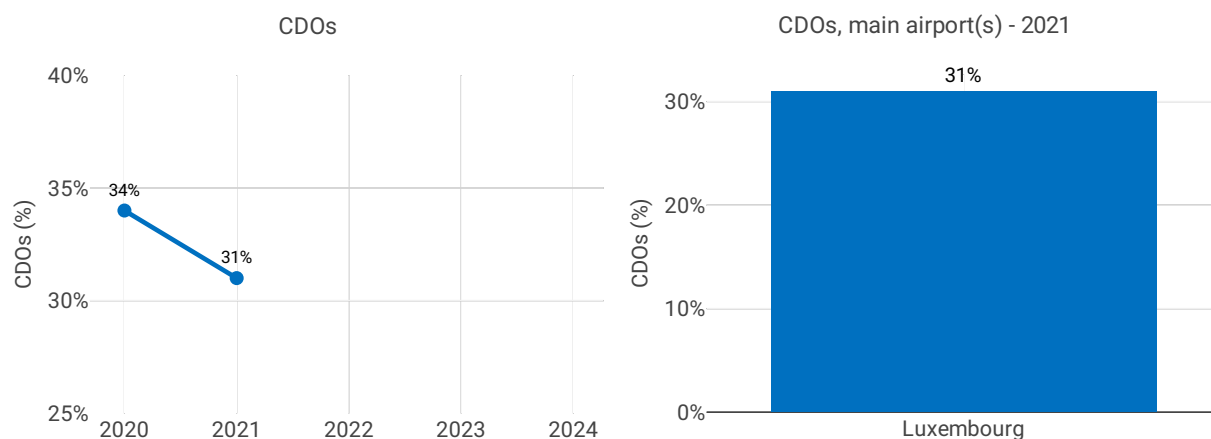
AXOT

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 30.7% which is a decrease of 2.8 percentage points but still just above the overall RP3 value (30.5%).

The monthly values decreased from 37.2% in January to 25.3% in December.

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

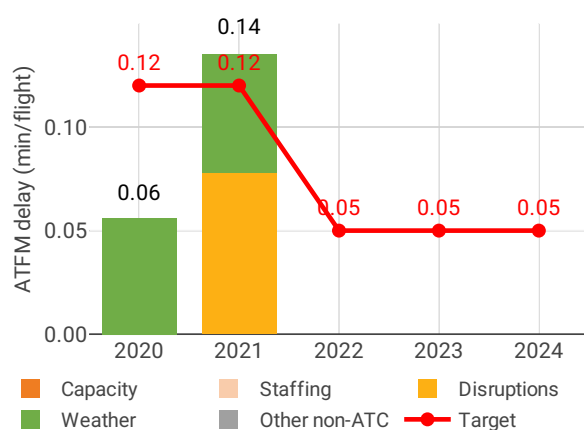
4 CAPACITY - LUXEMBOURG

4.1 PRB monitoring

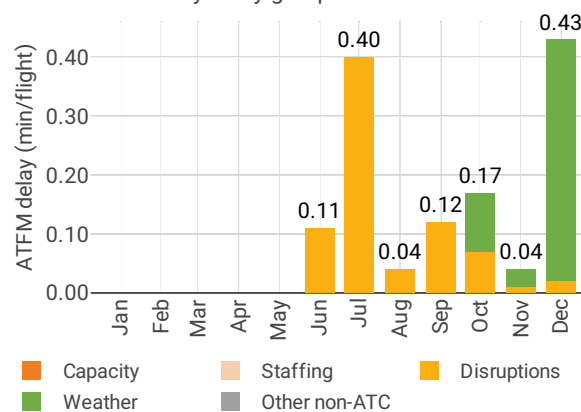
4.2 Terminal performance

4.2.1 Arrival ATFM delay (KPI#2)

Average arrival ATFM delay per flight by delay groups



Monthly distribution of arrival ATFM delay by delay groups - 2021



Focus on arrival ATFM delay

The scope of RP3 monitoring for Luxembourg comprises the main airport (ELLX), where traffic in 2021 was still 37% lower than in 2019 regardless the increase of 18% with respect to 2020.

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 2021 was 0.14 min/arr, compared to 0.06 min/arr in 2020.

ATFM slot adherence has improved (2021: 93.4%; 2020: 90.2%).

Arrival ATFM delays at Luxembourg have significantly increased in 2021. All delays were registered between June and December, and were mostly attributed to equipment issues (58%) and weather (42%) According to FABEC's monitoring report: *Target was not achieved due to traffic flow restrictions put in place as a result of a lack of required performance study of the surveillance chain and as a consequence increased separations within the TMA. It is acknowledged and known to the DAC/NSA that, during 2021, ANA has experienced some technical problems and operational constraints in its SURCHAIN that had an impact on overall capacity. Currently, ANA is actively working on the overall improvement of its SURChain. The DAC is actively and closely following the subject.*

Recommendations to the ANSP to rectify the situation:

- *Successfully implementation of the new SURChain updates as planned in its Change and Project Management;*
- *Strict adherence to the ESSAP' periodicities agreed by the DAC/NSA;*
- *Better definition of the separations minima scenarios based on the available radars and its ESSAPs results;*

Three Remedial Measures have been taken by the ANSP

End 2022: Successful implementation of new SURChain updates as planned in its Change Management and Project Management (On-going)

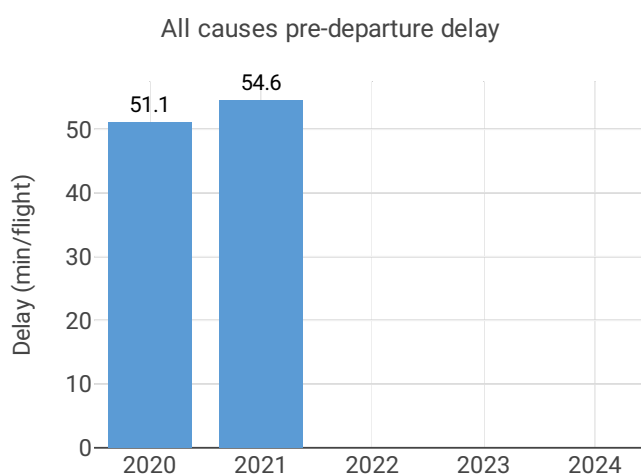
Strict adherence to the ESSAP periodicities agreed by DAC/NSA (On-going)

ANA commissioned a Eurocontrol study on the status of its SURChain and a number of recommendations will be issued, among them a redefinition of separation status. ANA is committed to implementing them (On-going)

The provisional national target on arrival ATFM delay in 2021 was not met, with actual arrival ATFM delays at 0.14 min/arr. in average, and the national target set at 0.12 min/arr.

In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024. No malus will be awarded to ANA LUX for 2021 achievement.

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



Airport level								
Airport name	Avg arrival ATFM delay (KPI#2)				Slot adherence (PI#1)			
	2020	2021	2022	2023	2020	2021	2022	2023
Luxembourg	0.06	0.14	NA	NA	90.2%	93.4%	NA%	NA%

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

Focus on performance indicators at airport level

ATFM slot adherence

With the drastic drop in traffic, regulated departures from Luxembourg virtually disappeared until July 2021.

Luxembourg's ATFM slot compliance was 93.4%, an improvement with respect to 2020 (90.2%).

With regard to the 6.6% of flights that did not adhere, 2.4% was early and 4.2% was late.

According to FABEC monitoring report: *Improvements were made with an adaption of the declared taxi time which was shorter than the actual average. ATC also leverage a cooperation with air carriers in the realm of EOBT updates to contribute to the improvement. In 2021 there were also very few slots as the few centers had capacity issues to begin with.*

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 Luxembourg.

All causes 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 Luxembourg.

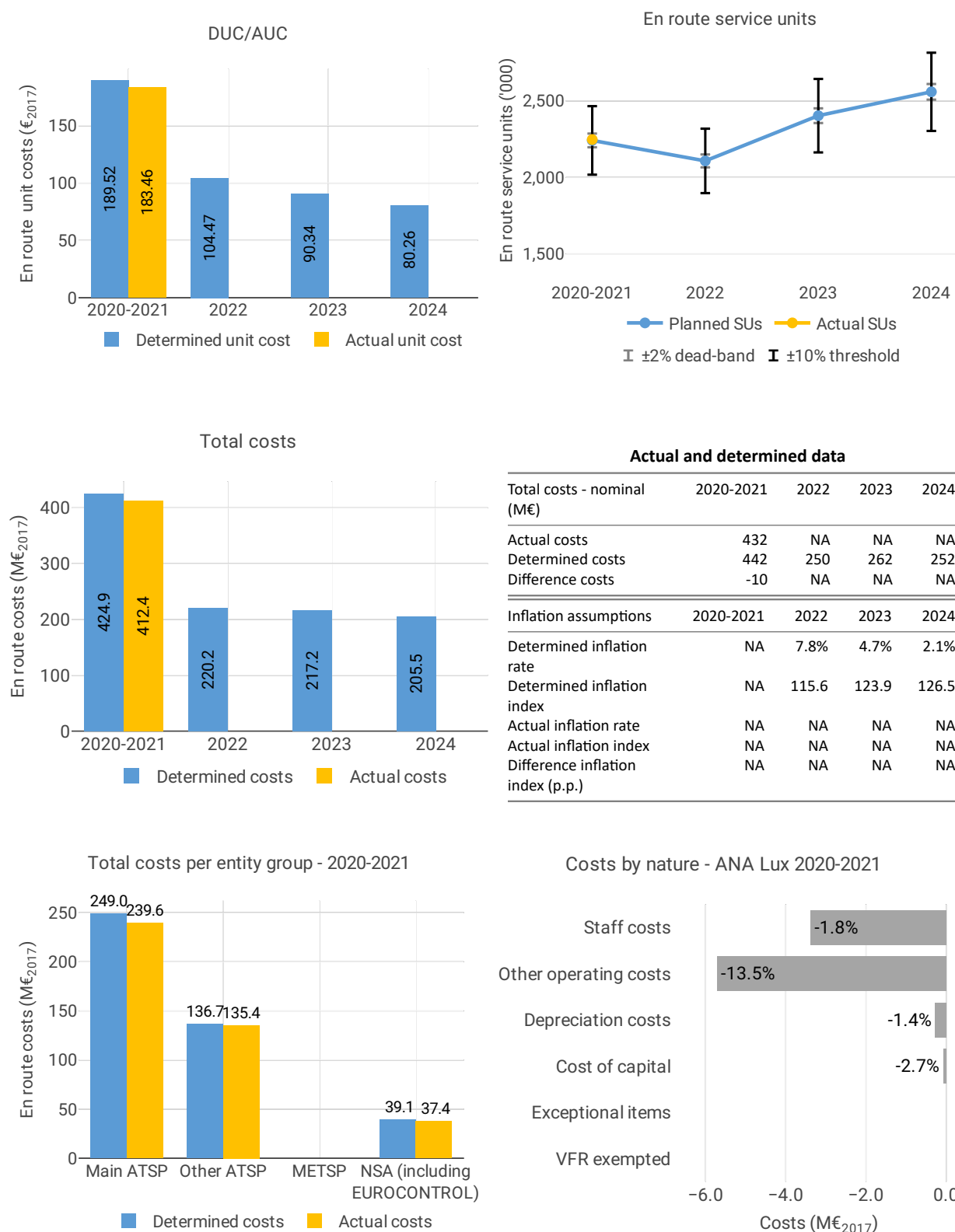
5 COST-EFFICIENCY - LUXEMBOURG

5.1 PRB monitoring

- The en route 2020/2021 actual unit cost of Belgium-Luxembourg was 183.46 €2017, -3.0% lower than the determined unit cost (189.52 €2017).
- The terminal actual unit cost of Luxembourg was 333.73 €2017, -3.0% lower than the determined unit cost (344.18 €2017).
- The en route 2021 actual service units (1,167K) were in line with the determined service units (1,161K).
- The en route 2021 actual total costs were -12 M€2017 (-5.5%) lower than determined, mainly due to lower other operating costs (-8.1 M€2017, or -15%) and lower staff costs (-3.1 M€2017, or -2.1%). The NSA did not provide explanations for the variations of costs.
- The en route actual unit cost incurred by users of Belgium-Luxembourg in 2020/2021 was 195.76€, while the terminal actual unit cost incurred by users was 324.46€ for Belgium and 303.05€ for Luxembourg.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)



Focus on unit cost

AUC vs. DUC

In the combined year 2020-2021, the en route AUC was -3.0% (or -5.76€2017) lower than the planned DUC. This results from the combination of slightly higher than planned TSUs (+0.3%) and lower than planned en-route costs in real terms (-2.8%, or -11.9 M€2017).

En route service units

The difference between actual and planned TSUs (+0.3%) falls within the $\pm 2\%$ dead band. Hence the resulting additional en-route revenue is kept by the ANSPs.

En route costs by entity

Actual real en route costs are -2.8% (-11.9 M€2017) lower than planned. This is driven by the main ANSP, Skeyes (-3.8%, or -9.4 M€2017), the other ANSPs (MUAC and ANA Luxembourg, -1.0%, or -1.4 M€2017 together) and the NSA/EUROCONTROL costs (-2.7%, or -1.0 M€2017).

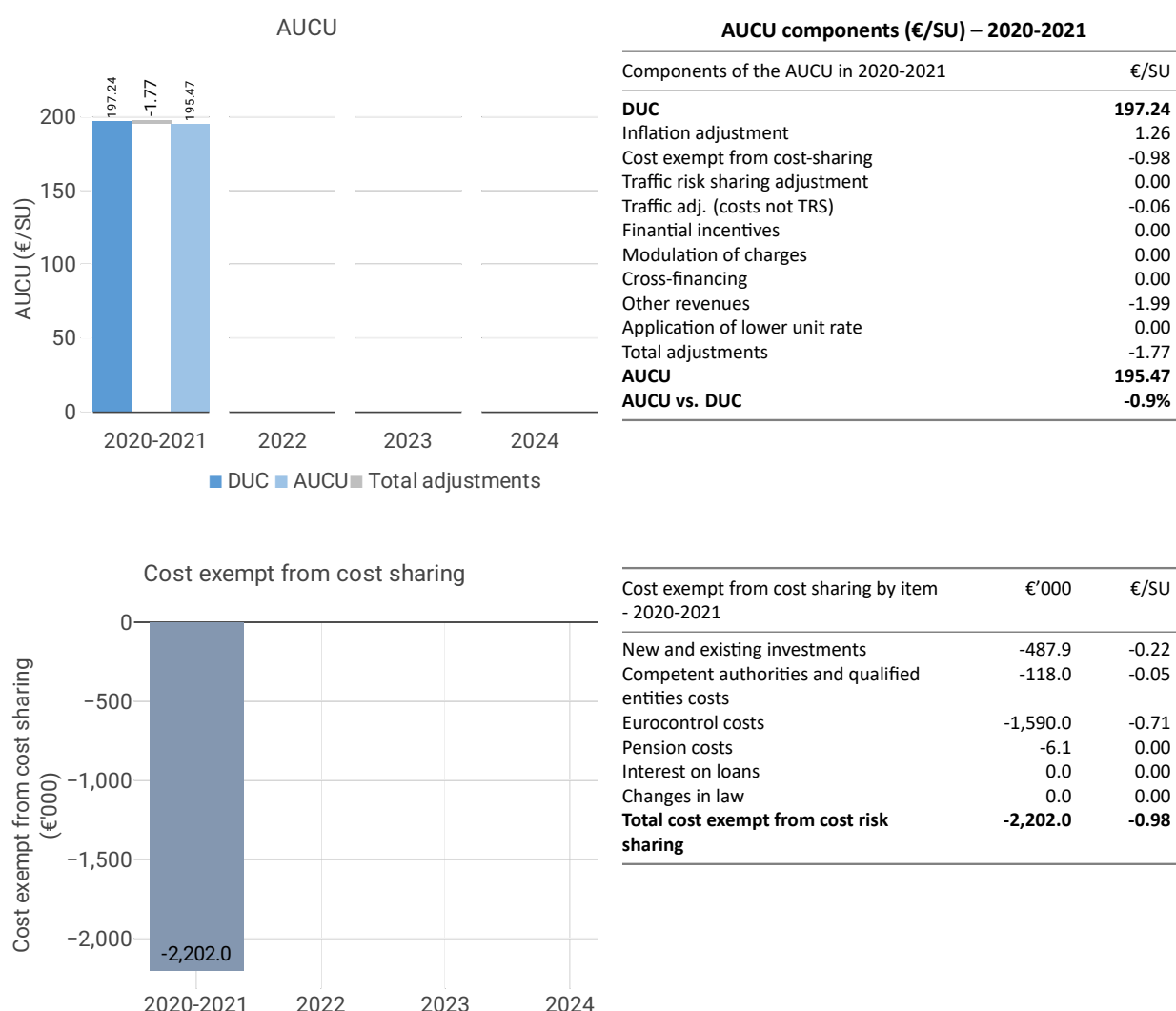
En route costs for the main ANSP at charging zone level

The lower than planned en route costs in real terms for Skeyes (-3.8%, or -9.4 M€2017) result from:

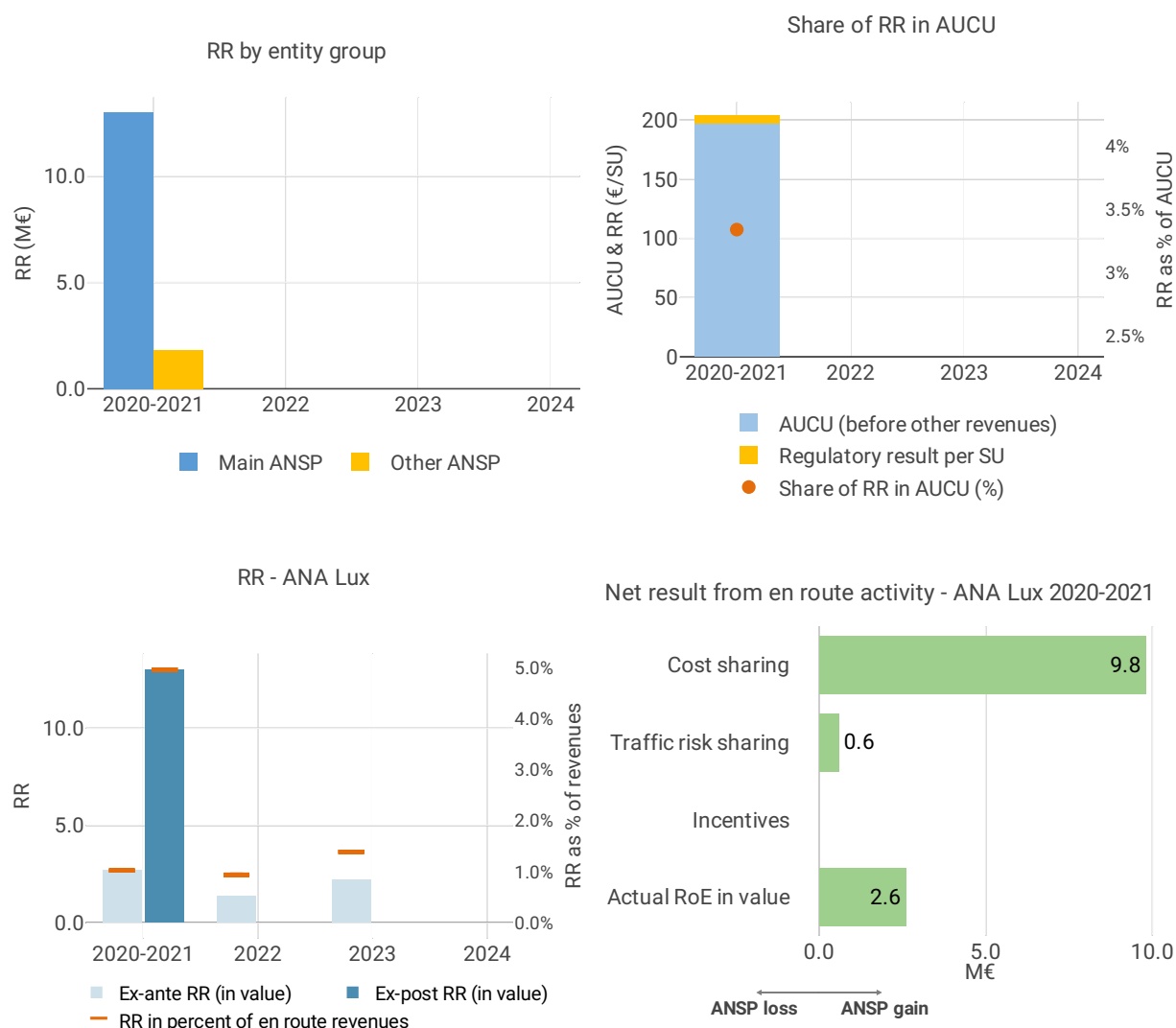
- lower staff costs (-1.8%);
- lower other operating costs (-13.5%);
- slightly lower depreciation (-1.4%); and
- lower cost of capital (-2.7%).

The additional information to the reporting tables does not provide qualitative information explaining the reasons underlying the differences between the determined and actual costs.

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



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 combined year 2020-2021

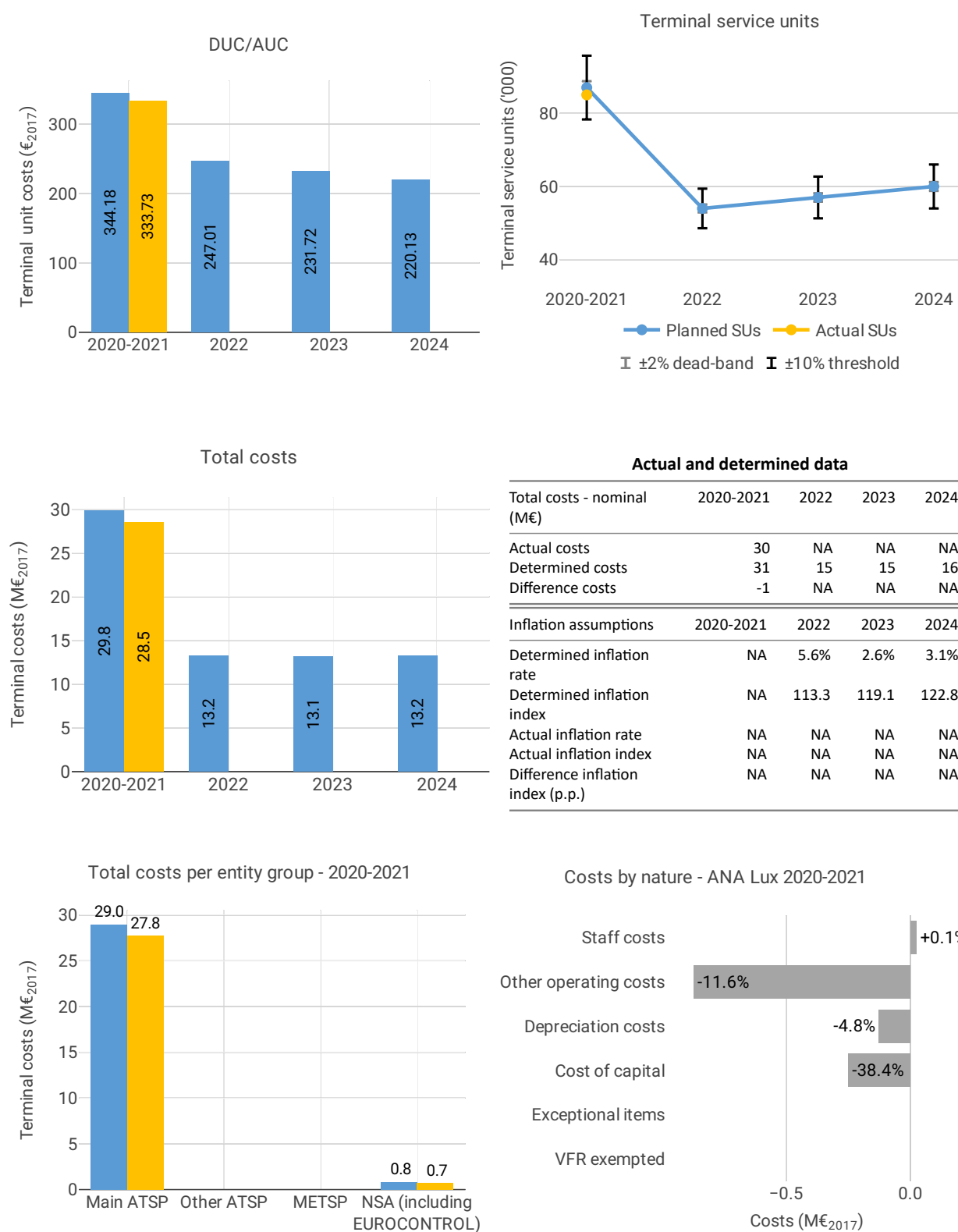
Skeyes reported a net gain of +10.4 M€, resulting from a gain of +9.8 M€ arising from the cost sharing mechanism and a gain of +0.6 M€ arising from the traffic risk sharing mechanism.

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

Ex-post, the overall RR corresponding to the net gain from the en route activity mentioned above (+10.4 M€) and the RoE (+2.6 M€) amounts to +13.0 M€ (5.0% of the en route revenues), compared to 1.0% ex-ante. The resulting ex-post rate of return on equity is 11.2%, which is higher than the 2.2% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)



Focus on unit cost

AUC vs. DUC

The AUC for the combined year 2020-2021 is lower than the planned DUC (by -3.0%, or -10.45 €2017). This is due to the combination of lower than planned TNSUs (-1.5%) and lower than planned terminal costs in real terms (by -4.5%, or -1.3 M€2017).

Terminal service units

The difference between actual and planned TNSUs (-1.5%) falls within the $\pm 2\%$ dead band. Hence the resulting loss is borne by the ANSPs.

Terminal costs by entity

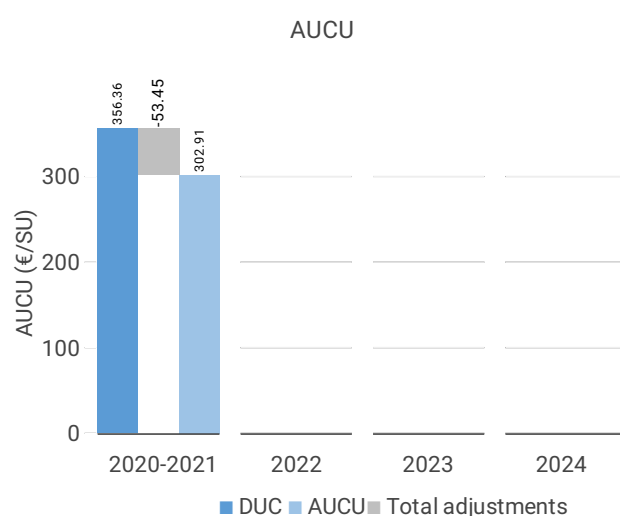
Actual real terminal costs for 2020-2021 are -4.5% (-1.3 M€2017) lower than planned. This result is driven by the main ANSP, ANA (-4.2%, or -1.2 M€2017), while the NSA costs are also lower than planned (-13.5%, or -0.1 M€2017).

Terminal costs for the main ANSP at charging zone level

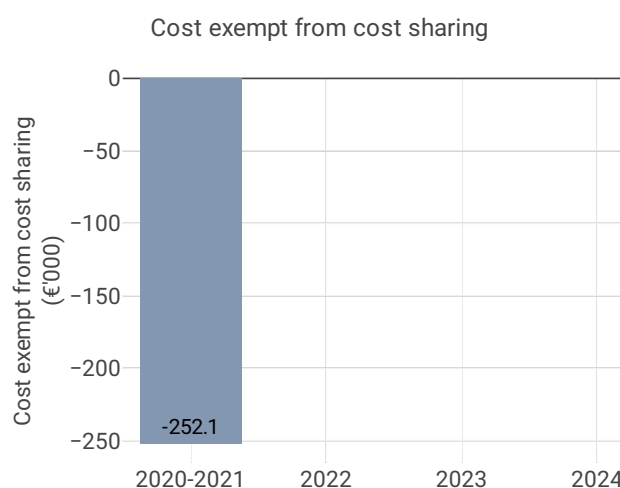
Overall, the terminal costs in real terms for ANA in 2020-2021 were lower than the determined costs from the performance plan (by -4.2%, or -1.2 M€2017). This results from:

- slightly higher staff costs (+0.1%), “mainly due to the, so far, higher success rate of ATC students, which is well above the expected 50%”;
- significantly lower other operating costs (-11.6%), mainly due to “lower overhead costs”;
- lower depreciation (-4.8%). “Due to budget constraints, ANA had to revise the investment plan which lead to project cancelations and postponements. The main difference in comparison to the plan is related to the later capitalisation of the A-SMGCS project on December 31 only, although it was initially foreseen for mid-2021”; and
- lower cost of capital (-38.4%), due to the significantly lower net current assets..

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

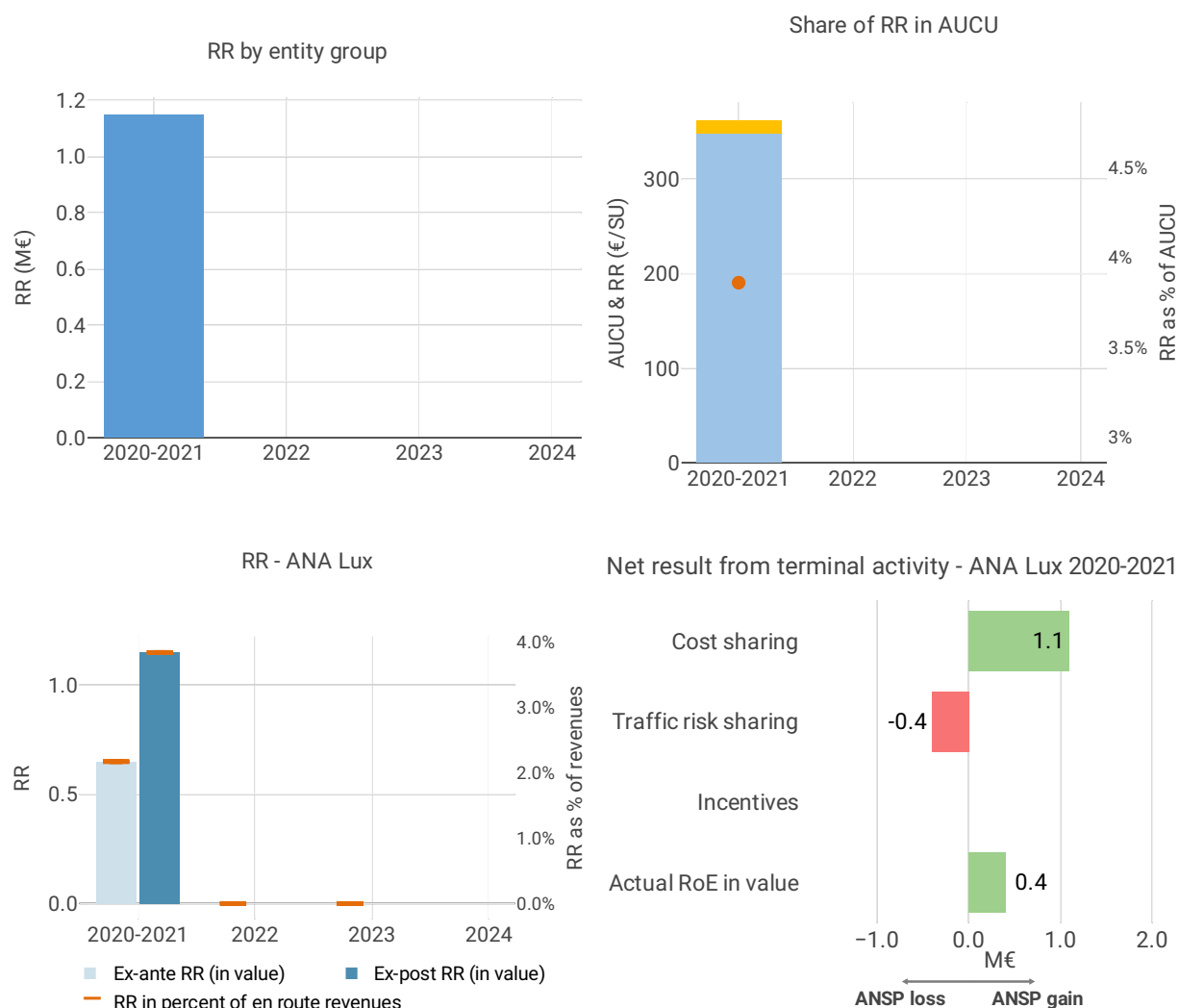


AUCU components (€/SU) – 2020-2021	
Components of the AUCU in 2020-2021	€/SU
DUC	356.36
Inflation adjustment	4.11
Cost exempt from cost-sharing	-2.95
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	0.73
Financial incentives	0.00
Modulation of charges	-9.84
Cross-financing	0.00
Other revenues	-45.51
Application of lower unit rate	0.00
Total adjustments	-53.45
AUCU	302.91
AUCU vs. DUC	-15.0%



Cost exempt from cost sharing by item - 2020-2021	€'000	€/SU
New and existing investments	-125.9	-1.47
Competent authorities and qualified entities costs	-113.5	-1.33
Eurocontrol costs	0.0	0.00
Pension costs	-12.6	-0.15
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	-252.0	-2.95

5.3.3 Regulatory result (RR)



Focus on regulatory result

ANA net gain on activity in Luxembourg terminal charging zone in the combined year 2020-2021

ANA reported a net gain of +0.8 M€, resulting from a gain of +1.2 M€ arising from the cost sharing mechanism and a loss of -0.4 M€ arising from the traffic risk sharing mechanism.

ANA overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR corresponding to the net gain from the terminal activity mentioned above (+0.8 M€) and the RoE (+0.4 M€) amounts to +1.2 M€ (3.9% of the terminal revenues), compared to 2.2% ex-ante. The resulting ex-post rate of return on equity is 5.2%, which is higher than the 1.8% planned in the PP.