PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Portugal - 2023

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/767 of 13 April 2022

List of ACCs 1
Lisbon ACC

No of airports in the scope of the performance plan:
- **≥80'K** 2
- **<80'K** 8

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

Share of Union-wide:
- **traffic (TSUs) 2023** 3.4%
- **en route costs 2023** 2.4%

Share en route / terminal costs 2023 79% / 21%

En route charging zone(s)
Portugal Continental

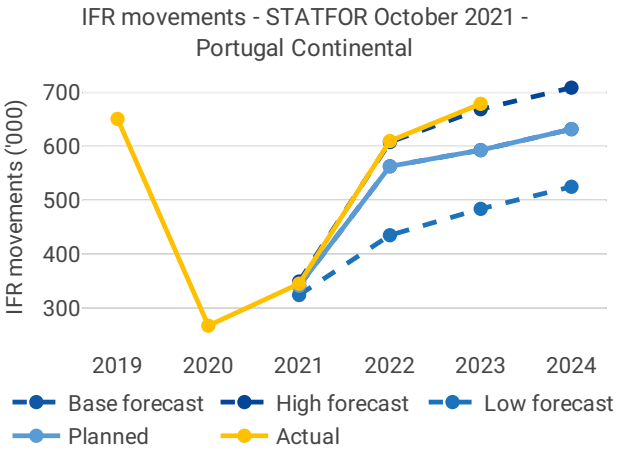
Terminal charging zone(s)
Portugal

Main ANSP
- NAV Portugal (Continental)

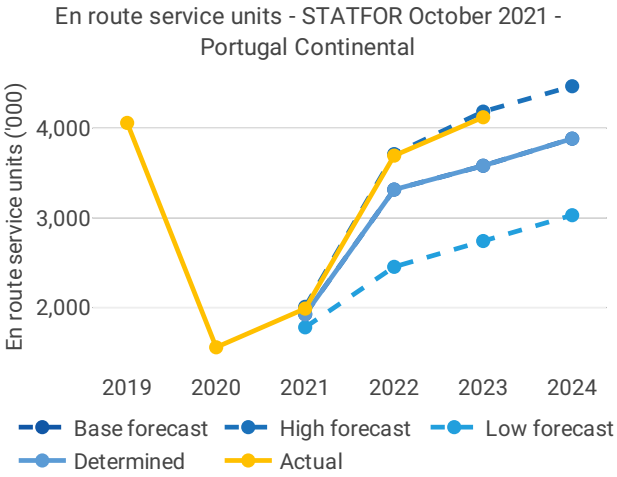
Other ANSPs
- Estado Maior da Força Aérea
- Estado Maior da Armada

MET Providers
- IPMA

1.2 Traffic (En route traffic zone)

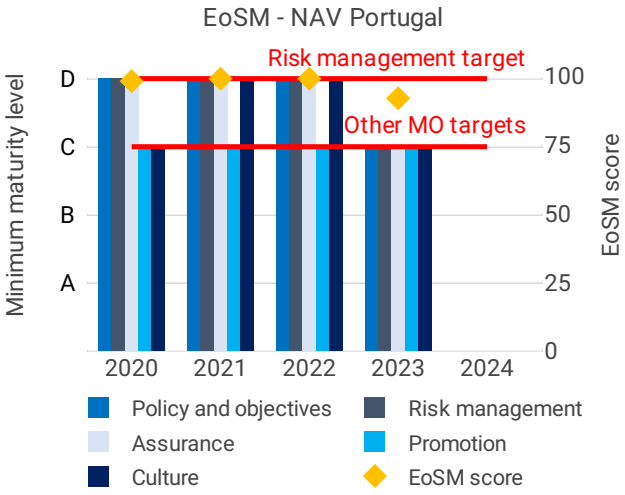


- Portugal recorded 677K actual IFR movements in 2023, +11% compared to 2022 (610K).
- Actual 2023 IFR movements were +14% above the plan (593K).
- Actual 2023 IFR movements were +4% above the actual 2019 level (651K).



- Portugal recorded 4,132K actual en route service units in 2023, +12% compared to 2022 (3,695K).
- Actual 2023 service units were +15% above the plan (3,582K).
- Actual 2023 service units are +2% above the actual 2019 level (4,060K).

1.3 Safety (Main ANSP)

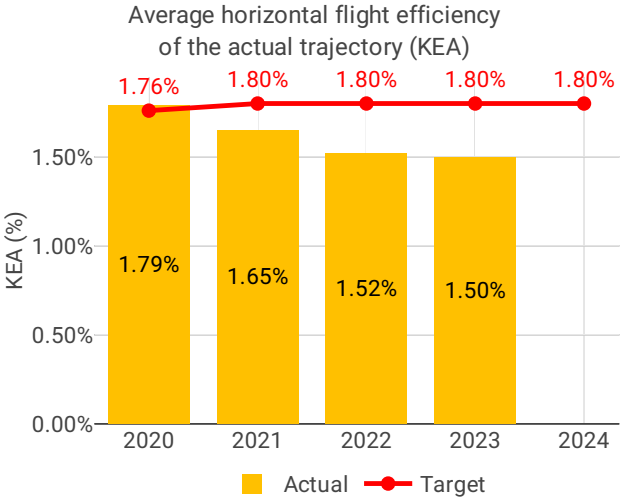


• NAV Portugal has already achieved the RP3 EoSM targets in 2020 for all five management objectives, but in 2023 the ANSP failed to maintain its level for safety risk management. NAV Portugal requires to implement specific measure in the area of occurrence analysis and monitoring of functional system underperformance. The NSA has not raised a potential risk of not meeting RP4 target levels.

• Portugal recorded stable performance with respect to safety occurrences with lower rates of separation infringement and runway incursion relative to 2022. The NSA was in the process of reviewing the State Safety Plan (SSP) related to monitoring of occurrences and implementation and efficiency of specific measures.

• NAV Portugal do not use automated safety data recording systems.

1.4 Environment (Member State)



• Portugal achieved a KEA performance of 1.50% compared to its target of 1.80% and contributed positively towards achieving the Union-wide target.

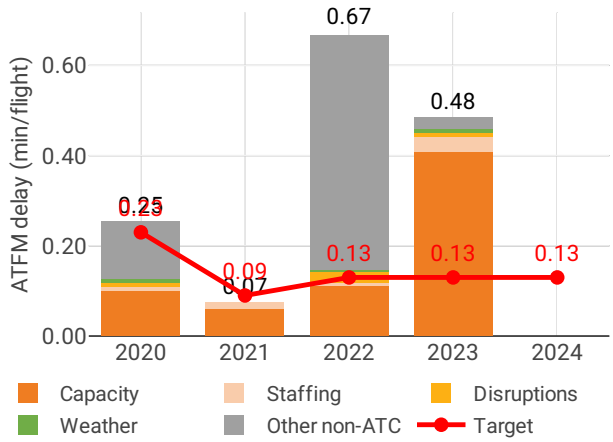
• KEP and SCR improved compared to 2022 levels.

• The share of CDO flights increased from 50.45% to 53.10% in 2023.

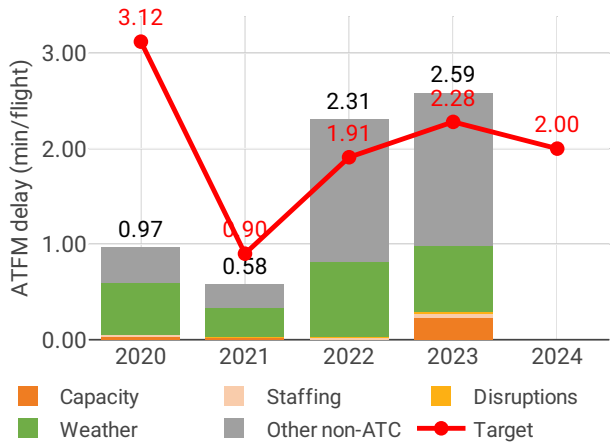
• During 2023, additional time in terminal airspace increased from 1.32 to 1.51 min/flight, while additional taxi out time increased from 2.34 to 2.70 min/flight.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Portugal registered 0.49 minutes of average en route ATFM delay per flight during 2023 which has been adjusted to 0.48 during the post-ops adjustment process, thus not achieving the local target value of 0.13. Delays in Portugal decreased by 0.18 minutes per flight year-on-year.

• Delays were dispersed during the whole calendar year, being the highest in May, mainly due to ATC capacity.

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

• The average number of IFR movements was 4% above 2019 levels in Portugal in 2023.

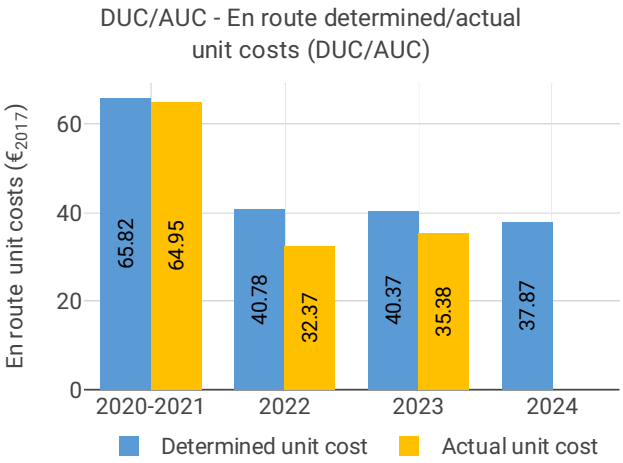
• The number of ATCOs in OPS is expected to increase by 25% by 2024, with the actual value being below the 2023 plan in Lisbon by 21 FTEs.

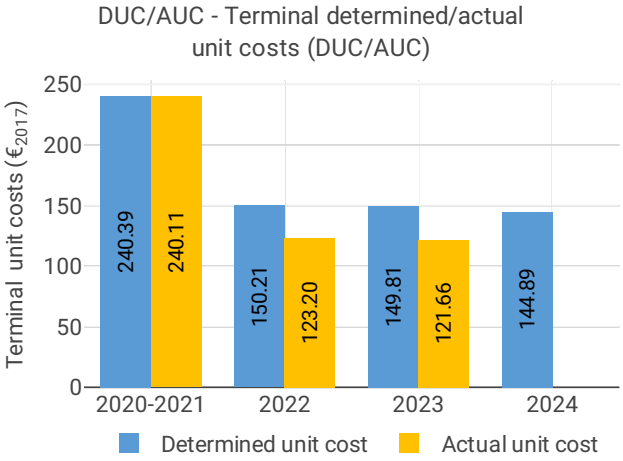
• The yearly total of sector opening hours in Lisbon ACC was 68,150, showing a 2.1% increase compared to 2022. Sector opening hours are 1.4% below 2019 levels.

• Lisbon ACC registered 9.12 IFR movements per one sector opening hour in 2023, being 4.0% above 2019 levels.

• Year-on-year traffic growth in Portugal was 11%, with IFR movements being 14% above the STATFOR October 2021 Base forecast. While capacity provision improved and, in some aspects, exceeded 2019 performance, there remains a capacity gap, mainly due to a lack of ATCOs and airspace structure issues, which will have to be resolved to close the gap.

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





• The en route 2023 actual unit cost of Portugal was 35.38 €2017, -12% lower than the determined unit cost (40.37 €2017). The terminal 2023 actual unit cost was 121.66 €2017, -19% lower than the determined unit cost (149.81 €2017).

• The en route 2023 actual service units (4.1M) were +15% higher than the determined service units (3.6M).

• The en route 2023 actual total costs were +1.3 M€2017 (+0.9%) higher than determined. This difference was predominantly due to an overspend in depreciation costs (+1.2 M€2017, or +7.5%), which resulted from the increase of investment in the new ATM system TOPSKY during 2023 after being postponed in the initial years of RP3. The PRB highlights that the actual number of ACC ATCOs in OPS FTEs for NAV Portugal were -12% below plan.

• Portugal presented a deviation from the criteria to achieve capacity targets, which was considered justified. Considering that actual number of ATCOs have been lower than planned, and that the 2023 en route capacity targets have not been achieved, the situation raises serious concern.

• NAV Portugal spent 23 M€2017 in 2023 related to costs of investments for both en route and terminal charging zones, +3.5% more than determined (22 M€2017).

• The en route actual unit cost incurred by users in 2023 was 39.55€ (-5.7% below the 2023 DUC), while the terminal actual unit cost incurred by users was 143.65€ (-8.1% below the 2023 DUC).

• The PRB will take into consideration the implementation of the RP3 performance plans when assessing the RP4 cost-efficiency targets and recommends that the NSA of Portugal submits a detailed report of the capacity-related measures implemented during 2024. Should the RP3 planned measures not be implemented by the end of RP3, the PRB recommends Portugal to consider the reimbursement to airspace users of excess funds received by ANSPs for measures not implemented during RP3.

2 SAFETY - PORTUGAL

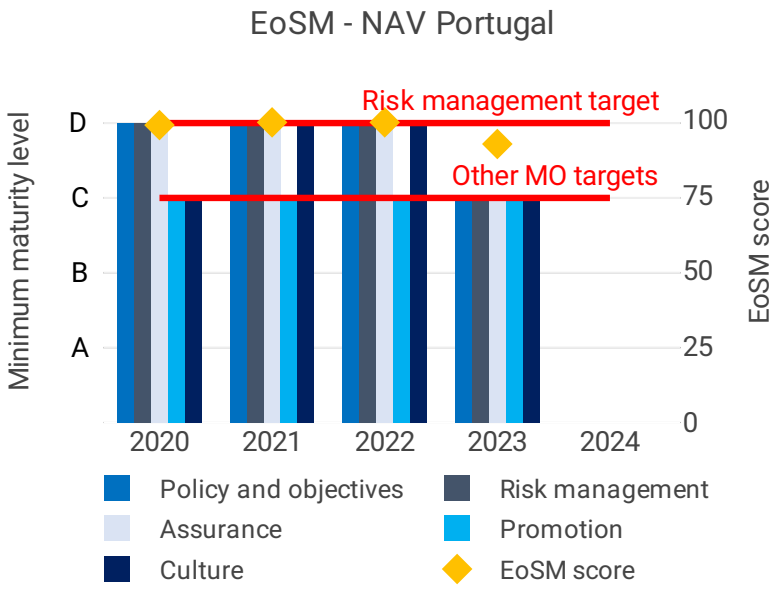
2.1 PRB monitoring

• NAV Portugal has already achieved the RP3 EoSM targets in 2020 for all five management objectives, but in 2023 the ANSP failed to maintain its level for safety risk management. NAV Portugal requires to implement specific measure in the area of occurrence analysis and monitoring of functional system underperformance. The NSA has not raised a potential risk of not meeting RP4 target levels.

• Portugal recorded stable performance with respect to safety occurrences with lower rates of separation infringement and runway incursion relative to 2022. The NSA was in the process of reviewing the State Safety Plan (SSP) related to monitoring of occurrences and implementation and efficiency of specific measures.

• NAV Portugal do not use automated safety data recording systems.

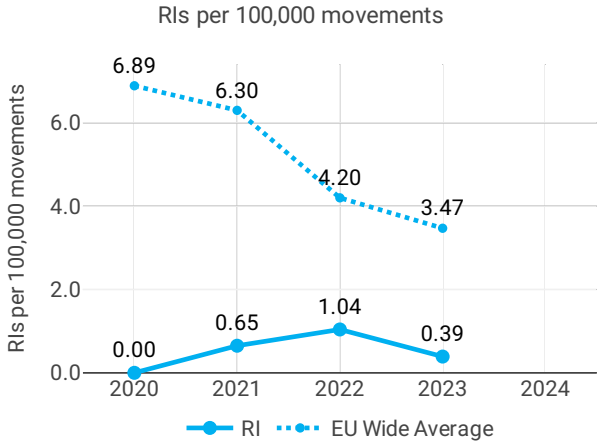
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

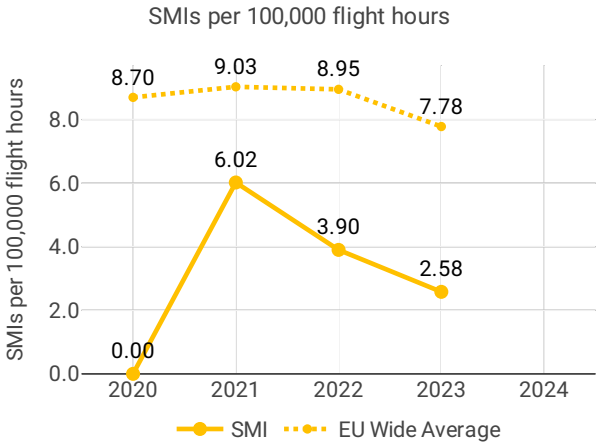


Focus on EoSM

Four out of five EoSM components of the ANSP meet the RP3 target level. Over 2023, the component "Safety Risk Management" was degraded and is below 2024 target level. Improvements for two questions in "Safety Risk Management" are still expected during RP3 to achieve RP3 targets.

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





3 ENVIRONMENT - PORTUGAL

3.1 PRB monitoring

• Portugal achieved a KEA performance of 1.50% compared to its target of 1.80% and contributed positively towards achieving the Union-wide target.

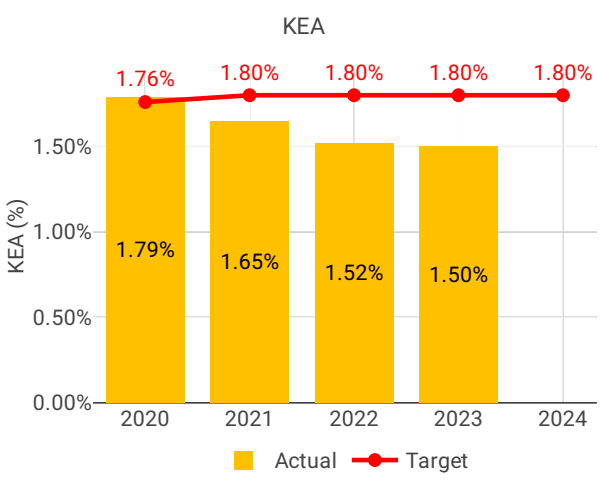
• KEP and SCR improved compared to 2022 levels.

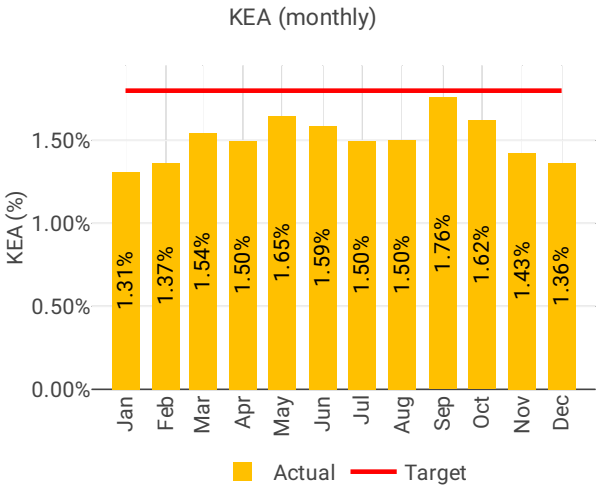
• The share of CDO flights increased from 50.45% to 53.10% in 2023.

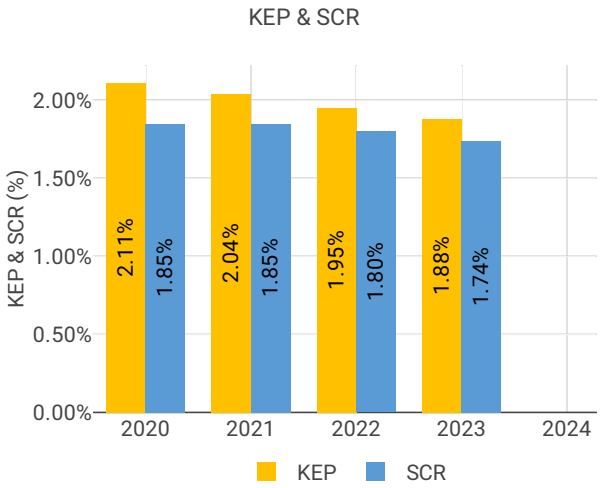
• During 2023, additional time in terminal airspace increased from 1.32 to 1.51 min/flight, while additional taxi out time increased from 2.34 to 2.70 min/flight.

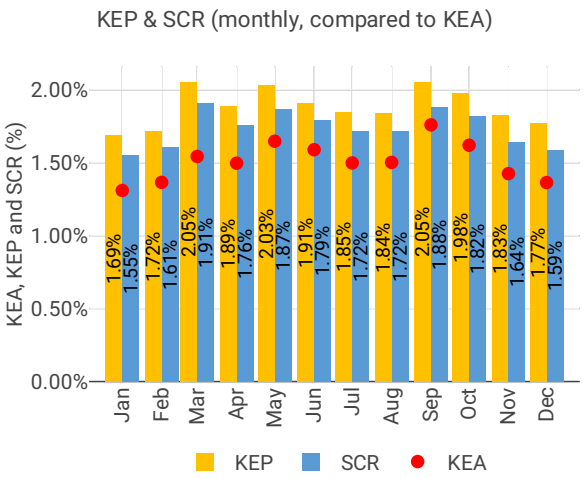
3.2 En route performance

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)



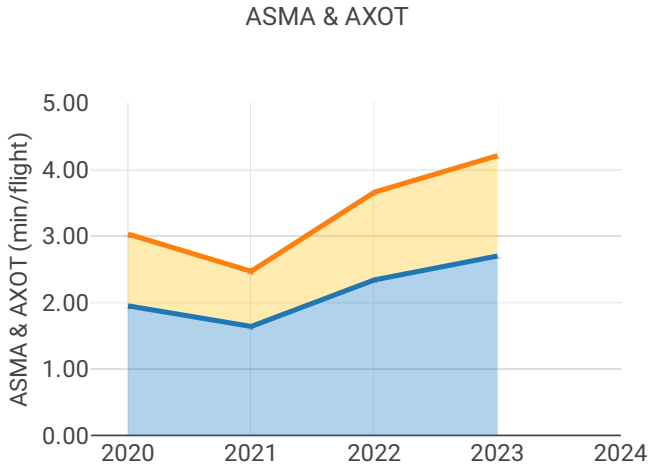


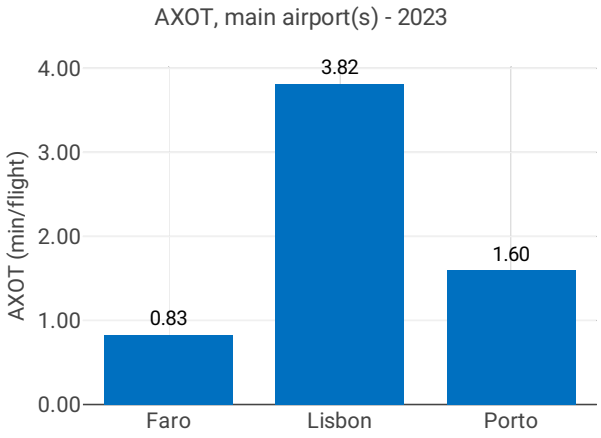


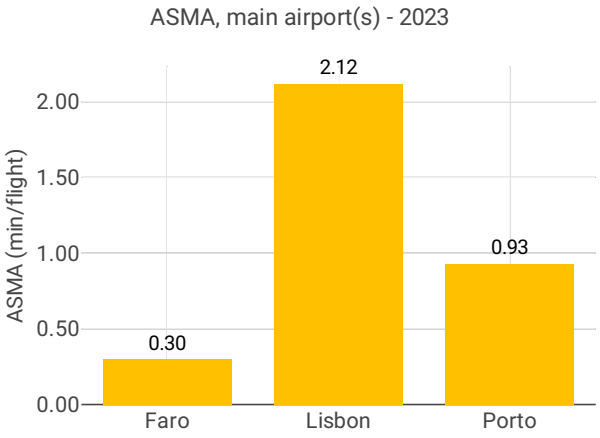


3.3 Terminal performance

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







Focus on ASMA & AXOT

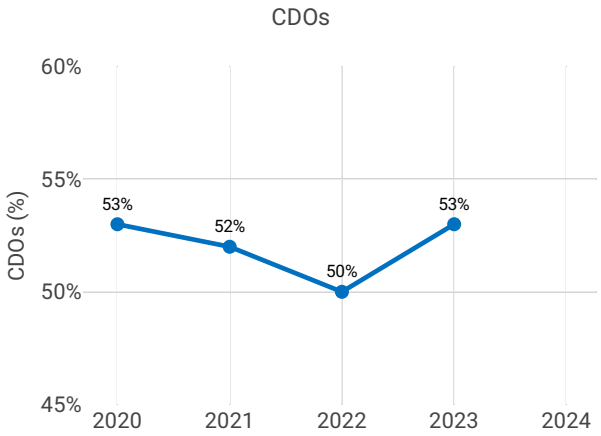
AXOT

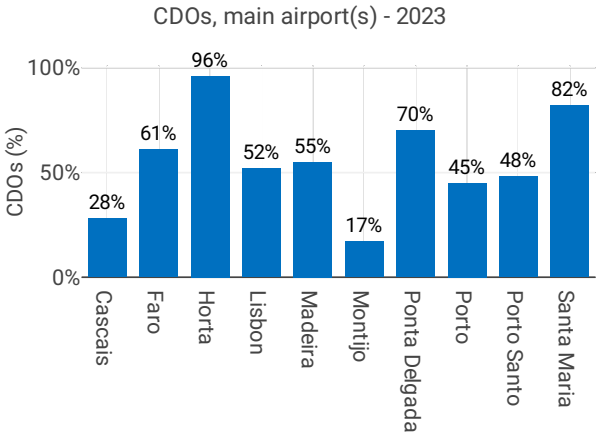
Additional taxi-out times at Lisbon (LPPT; 2019: 3.96 min/dep.; 2020: 2.68 min/dep.; 2021: 1.93 min/dep.; 2022: 3.18 min/dep.; 2023: 3.82 min/dep.) increased again in 2023 resulting in the 4th highest additional taxi-out times in the SES area and well above the SES average of 2.81 min/dep.
According to the Portuguese monitoring report: *Regular performance and capacity reports by the ANSP are presented to the NSA in which the ENV KPI is specifically addressed.*

ASMA

Like the additional taxi-out times, the additional times in the terminal airspace at Lisbon (LPPT; 2019: 2.75 min/arr.; 2020: 1.51 min/arr.; 2021: 1.15 min/arr.; 2022: 1.84 min/arr.; 2023: 2,12 min/arr.) experimented an increase in 2023 and resulted well above the SES average of 1.16 min/arr. with the second highest value of all SES monitored airports.
According to the Portuguese monitoring report: *Regular performance and capacity reports by the ANSP are presented to the NSA in which the ENV KPI is specifically addressed.*

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





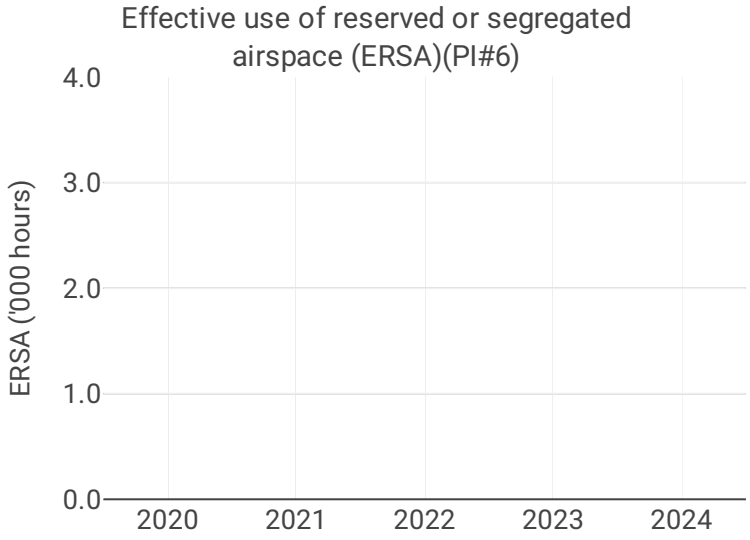
Focus CDOs

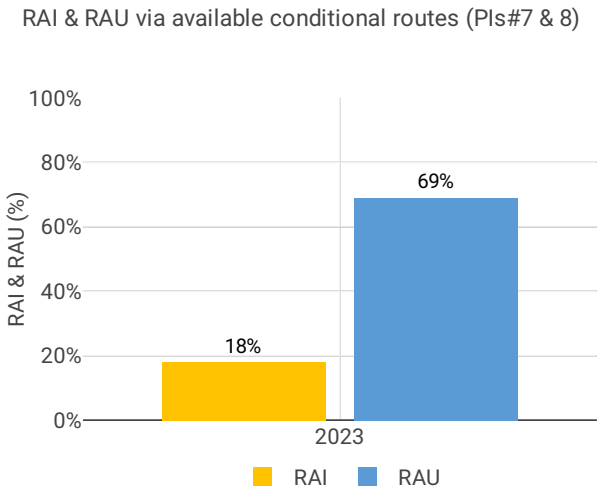
All airports except Cascais have shares of CDO flights well above the overall RP3 value in 2023 (28.8%), ranging from 28.0% (Cascais - LPCS) to 96.1% (Horta - LPHR). It should however be noted that Horta had only 181 arriving flights in 2023.
Most airports have an increase of the share of CDO flights, with the biggest increase for Santa Maria by 5.4 percentage points.
According to the Portuguese monitoring report: *Regular performance and capacity reports by the ANSP are presented to the NSA in which the ENV KPI is specifically addressed.*

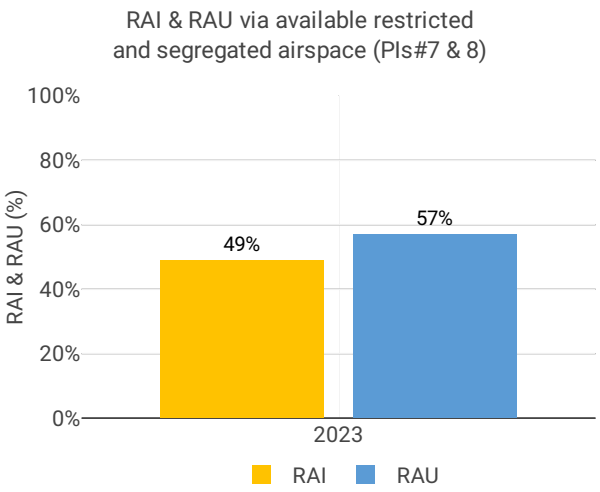
Airport level

	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
Faro	0.27	0.65	0.65	0.83	NA	0.33	0.19	0.21	0.30	NA	62%	58%	57%	61%	NA
Lisbon	2.68	1.93	3.18	3.82	NA	1.51	1.15	1.84	2.12	NA	55%	51%	49%	52%	NA
Porto	1.45	1.67	1.61	1.60	NA	0.61	0.57	0.89	0.93	NA	46%	43%	41%	45%	NA
Cascais	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42%	34%	27%	28%	NA
Madeira	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	46%	48%	52%	55%	NA
Montijo	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30%	32%	23%	17%	NA
Porto Santo	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	68%	65%	52%	48%	NA
Santa Maria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	75%	77%	82%	NA
Flores	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100%	100%	NA	NA
Horta	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	99%	98%	96%	NA
Ponta Delgada	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67%	67%	70%	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

Airspace design is established in accordance with the FUA principles for strategic, pre-tactical and tactical levels. The military training missions are conducted primarily within the restricted airspace associated with military aerodromes or, when necessary, at the temporary segregated airspace established at strategic level. This type of airspace usage results in direct and short transit routes to and from the established training areas. The average transit route extension between the military aerodromes and the training areas in Portugal is around 20 NM.Additionally, the average duration of the training missions, (not including the transit times) is one (1) hour, except during major exercises.A close and active daily coordination between the military and the civil ANSP is, since long, the trademark of the Portuguese ASM. Also, the FUA coordination is supported by the Local and regional Airspace Management Tool (LARA), which enables the required level of civil military interoperability for the ASM process. As a general assessment, the environmental impact of the military during the RP3 period is expected to be low, since the military training activity was reduced due to the pandemic, and the current airspace structure promotes the optimization of transit times between air bases and training areas, thus reducing the associated carbon footprint.

Military - related measures implemented or planned to improve capacity

AsM is the main enabler to minimize the military impact on the capacity KPA, which is supported by the LARA tool, and is achieved through a close civil military cooperation at all the three FUA levels.
On a daily basis, the FUA level 2 and 3 is managed by the ASM cell which is jointly manned by civil and military personnel, co-located within the Lisbon ACC. This provides for a close liaison at both pre-tactical

and tactical level.
Overall, the reduction of the military training activity, including exercises, should result in a low impact in capacity. Moreover, the activation of airspace under the FUA principle should not be included in any type of capacity reduction, since, in the current operational arrangements between the Portuguese civil ANSP and the military, the required blocks of airspace are only active between the actual time the military aircraft enter the area until the moment they vacate it, thus increasing capacity.
The current trend by some ANSP to include the use of FUA by the military as a "capacity reduction factor", is not only contrary to the principles contained in Regulation 2150/2005. it is also detrimental to the effort put by the military in the mission planning phase when establishing the airspace daily requirements.

Initiatives implemented or planned to improve PI#6

Implementation of the A_FUA functionallity as per regulation 2021/116 will improve the use of airspace by both the civil and the military. Also with the implementation of the LARA tool more accurate statistic reports will be available to evaluate the FUA performance.

Initiatives implemented or planned to improve PI#7

LARA interfaces and associated statistic tools are in the final stages of implementation by the ANSP.

Initiatives implemented or planned to improve PI#8

LARA interfaces and associated statistic tools are in the final stages of implementation by the ANSP.

4 CAPACITY - PORTUGAL

4.1 PRB monitoring

• Portugal registered 0.49 minutes of average en route ATFM delay per flight during 2023 which has been adjusted to 0.48 during the post-ops adjustment process, thus not achieving the local target value of 0.13. Delays in Portugal decreased by 0.18 minutes per flight year-on-year.

• Delays were dispersed during the whole calendar year, being the highest in May, mainly due to ATC capacity.

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

• The average number of IFR movements was 4% above 2019 levels in Portugal in 2023.

• The number of ATCOs in OPS is expected to increase by 25% by 2024, with the actual value being below the 2023 plan in Lisbon by 21 FTEs.

• The yearly total of sector opening hours in Lisbon ACC was 68,150, showing a 2.1% increase compared to 2022. Sector opening hours are 1.4% below 2019 levels.

• Lisbon ACC registered 9.12 IFR movements per one sector opening hour in 2023, being 4.0% above 2019 levels.

• Year-on-year traffic growth in Portugal was 11%, with IFR movements being 14% above the STATFOR October 2021 Base forecast. While capacity provision improved and, in some aspects, exceeded 2019 performance, there remains a capacity gap, mainly due to a lack of ATCOs and airspace structure issues, which will have to be resolved to close the gap.

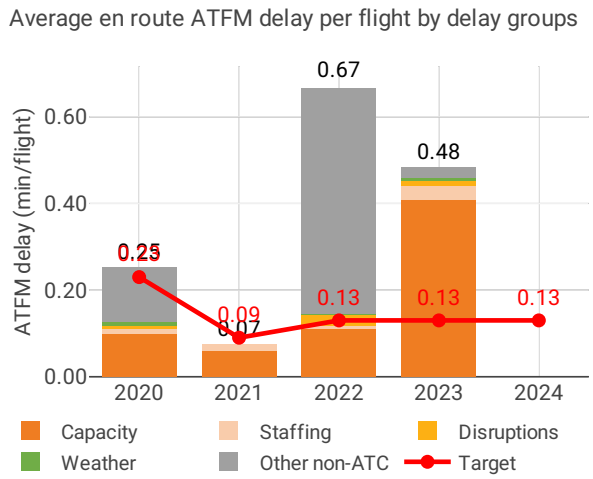
• Portugal registered an average airport arrival ATFM delay of 2.59 minutes per flight in 2023, thus not achieving the local target of 2.28 minutes.

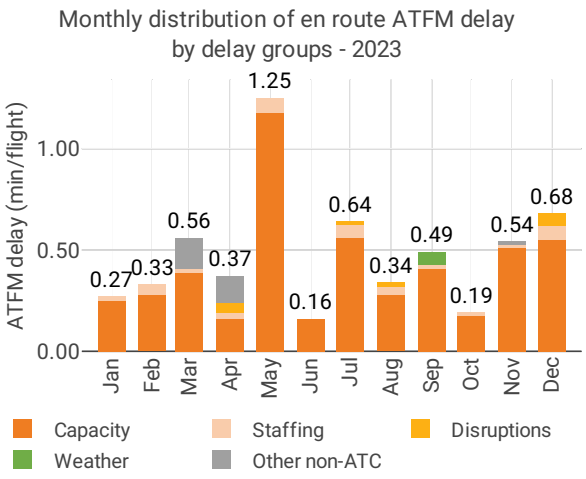
• Compared to 2022, average arrival ATFM delays in Portugal were 12% higher in 2023, while the number of IFR arrivals increased by 11%.

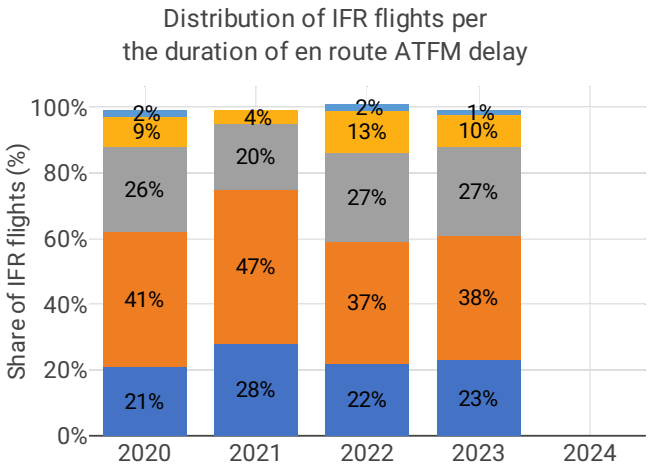
• The main reasons for delays were other, non-ATC related causes, accounting for 62% of delays, and weather, responsible for 27%.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Portugal experienced an increase in traffic from 610k flights in 2022, with 404k minutes of en route ATFM delay, to 677k flights in 2023 with a reduction in ATFM delays to 327k minutes.
There was an addition 2k minutes of en route ATFM delay, originating in Portugal, that were re-attributed to the DSNA in France, in accordance with the NM post operations delay reattribution process, endorsed by the NMB, due to eNM/S23 measures to mitigate the capacity shortfalls in France..

NSA's assessment of capacity performance

After the recovery of traffic in 2022, in 2023 traffic levels already surpassed 2019 figures. Specifically, in Lisbon FIR, traffic increased 11%, when compared to 2022, and is already 4,0% above 2019 levels.
Continued growth in traffic in 2023, when 2019 levels were surpassed (both for en-route and terminal), have taken a toll regarding capacity. Elementary sectors have reached their maximum capacity, which together with a lack of controllers have caused delays above expected. A restructuring of the airspace is ongoing, while the training / recruitment of new ATCOs is advancing, in order to solve the issues underlying the Portuguese underperformance.

Monitoring process for capacity performance

NAV Portugal and ANAC have a capacity monitoring process in place that consists of quarterly reports and follow-up meetings to monitor and present corrective measures whenever necessary.

Capacity planning

The main causes of en route delays are:

276 813 minutes of delay (84% of total delay) on elementary sectors due to an existing limitation to open a maximum of 9 route sectors in the Lisbon ACC. This issue is being addressed through a complete restructuring of the upper airspace that is already being developed with the support of Eurocontrol experts;
A second reason that generated 22 866 minutes of delay (7% of total delay) was due to the lack of ATCOs. This problem is being addressed by NAV's commitment to recruit 24 new ATCOs each year and to send 5 ATCOs to ACCs for APS qualification and 8 for enroute qualification each year. In an unprecedented move, we are even sending ATCOs directly from Ab initio to the ACC in order not to lose any placements and to speed up these placements.

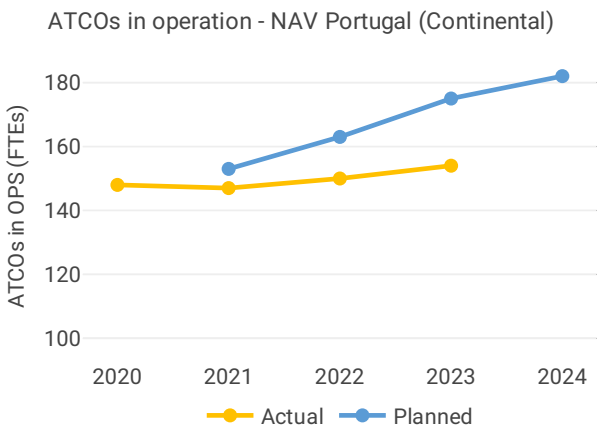
Application of Corrective Measures for Capacity (if applicable)

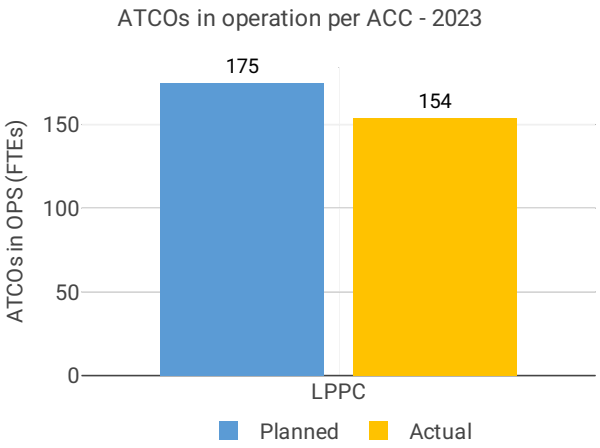
The NSA corroborates the analysis presented by NAV Portugal, included in the "capacity planning" item above, and, moreover, we consider that it is also worth mentioning the sharp recovery in traffic in 2023. In fact, NAV Portugal is in the top ten European providers with a volume of traffic in 2023 already above the registered movements for 2019.
In view of the above, and with regard to the mitigation measures being implemented, NAV Portugal is working on three different axes so that this situation can be reversed or at least mitigated from 2024 onwards:
▪ Recruitment and training of ATCOs;
▪ Airspace Optimisation;
▪ Increasing Sector Capacity.
With regard to the first point, and as already mentioned, NAV Portugal aims to reduce the current gap, which is why it has had 13 ATCOs in qualification at the Lisbon ACC since the beginning of 2023 (8 ACS + 5 APS). A further 13 ATCOs are scheduled to be transferred to the Lisbon ACC for qualification in 2024 (8 ACS + 5 APS). The extension of the operational age limit for ATCOs from 58 to 60 should also have a positive impact on the total number of ATCOs available, compared to the numbers initially planned. However, this impact will only materialise when the relevant Decree-Law is published, which is expected to be soon. Notwithstanding, by the end of RP3 the ATCOs gap it's not expected to be fully solved.
With regard to the second point, there are two lines of work to be pursued:
▪ One which involves to vertically divide the West sector and make it more flexible, which consists of creating new volumes of airspace with increased efficiency. This issue is already being addressed by NAV Portugal together with the NM. Once validated, these new airspaces volumes will make it possible to choose a more efficient and less penalising sectorisation.
▪ NAV Portugal has developed an airspace restructuring study with the aim of increasing total airspace capacity in the Lisbon FIR and thus mitigating some of the situations described above regarding the West sector and other sectors. The next steps in this study, which has now been finalised, will involve the Network Manager (NM) in its analysis, simulation and validation, not forgetting the need for safety assessments and training.

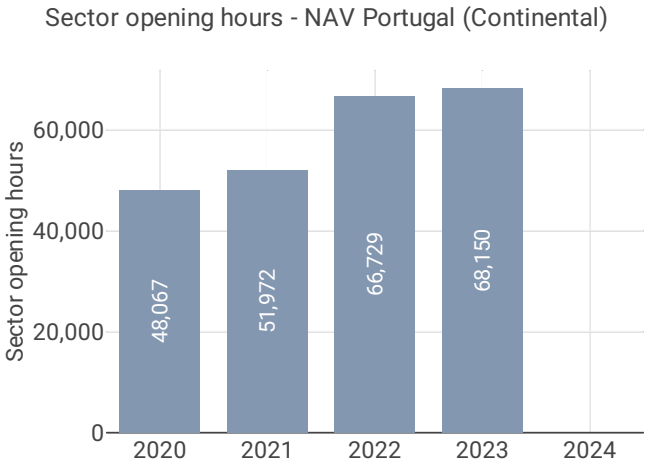
En route Capacity Incentive Scheme

NAV Portugal (Continental): Portugal uses an incentive scheme based only on delays attributed to C,R,S,T,M & P delay codes. The national target was set at 0.12 minutes per flight and the actual performance is reported as 0.46 minutes per flight (CRSTMP only). This results in a reported penalty of 649,071 €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.

4.2.2 Other indicators





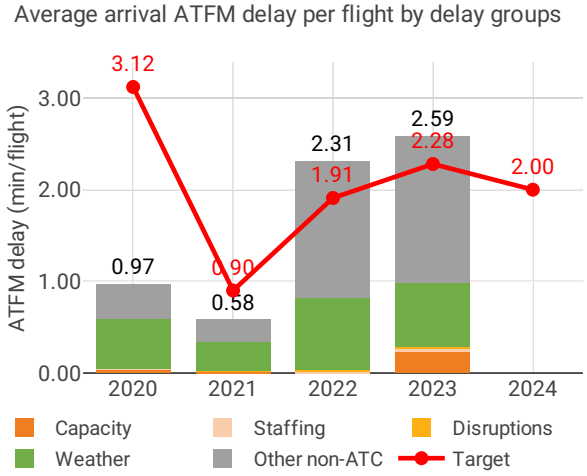


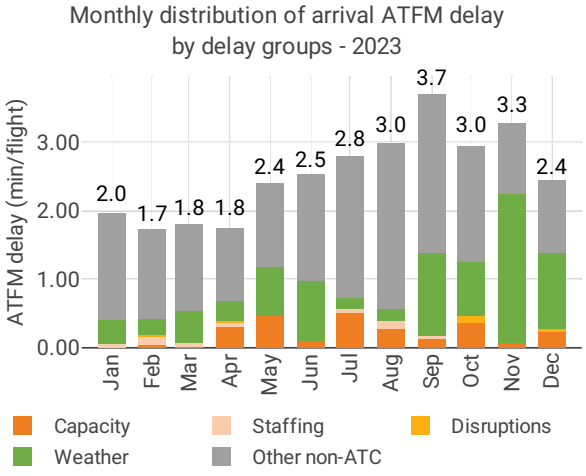
Focus on ATCOs in operations

Although the figures show a gap compared to what was planned in DEC 2023, it should be borne in mind that 11 new ATCOs entered service in Q1 2024, making a total of 17. This planning gap is mainly the result of qualification times (on average 8 to 9 months), but due to various circumstances the respective qualifications may take place in the first few weeks of 2024.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





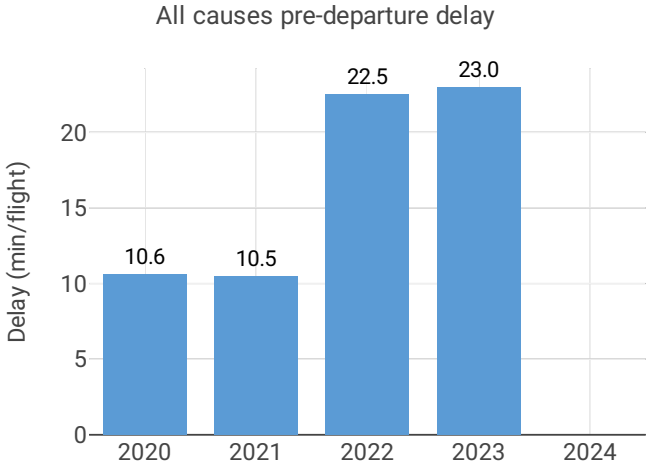
Focus on arrival ATFM delay

The scope of RP3 monitoring for Portugal comprises 10 airports in 2020, However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Lisbon (LPPT) and Porto (LPPR)) must be monitored for pre-departure delays.
The Airport Operator Data Flow, necessary for the monitoring of these pre-departure delays, is correctly established where required and the monitoring of all capacity indicators can be performed.
Traffic at these 10 airports in 2023, with an increase of 11% versus 2022, was 7% higher than in 2019.
Average arrival ATFM delays in 2023 was 2.59 min/arr, compared to 2.31 min/arr in 2022. The national target was not met.
ATFM slot adherence increased reaching 97.2% in 2023.

The national average arrival ATFM delay at Portuguese airports in 2023 was 2.59 min/arr, again higher than the previous year. This is driven by further deterioration of performance at Lisbon (LPPT; 2019: 4.13 min/arr; 2020: 1.72 min/arr; 2021: 0.28 min/arr; 2023: 4.88 min/arr). With this performance, Lisbon showed the highest arrival ATFM delay across the SES monitored airports. Cascais also shows one of the highest arrival ATFM delays in the SES area (LPCS: 2023: 3.48 min/arr.)
56% of the arrival Portuguese delays were attributed to Aerodrome Capacity issues, followed by 27% due to Weather.
According to the Portuguese monitoring report: *ATFM arrival delay followed the same behaviour as the ATFM en Route delay , with several affecting causes at airport level. With almost 90% of total ATFM arrival delay, LPPT generates the majority of delays, mainly due to airport infrastructure limitations to accommodate traffic demand (57% of total), while weather is responsible for 26%.*
Other airports in general performed better than what had been targeted, except for Cascais, that is influenced by the available capacity at the terminal control area (which is shared with LPPT).
NSA recommendation to the ANSP: The NSA corroborates the analysis presented by the ANSP, namely the paramount impact of airport capacity in the terminal delays.
As measures put in place, the Portuguese NSA reports, for Lisbon: *Cooperate with the APO, in order to look for solutions that could contribute to reduce the current level of delays. Ongoing. Target: 2026*

Portugal's performance plan sets a national target on arrival ATFM delay for 2023 of 2.28 min/arr. This target, with an actual performance of 2.59 min/arr, was not met. The incentive scheme uses modulated pivot values limited to CRSTMP delay causes. According to the Portuguese monitoring report, this pivot value for CRSTMP is 0.87 min/arr in 2023 and based on the attribution of the regulation reason, the actual CRSTMP value for 2023 was 0.436 min/arr.
The NSA calculates a bonus of € 200 720.

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
Cascais	NA	NA	0.36	3.48	82.6%	88.9%	94.6%	97.5%
Faro	0.00	0.00	0.01	0.00	95.8%	94.3%	95.3%	96.1%
Horta	NA	NA	NA	NA	93.8%	90.9%	96.1%	97.3%
Lisbon	1.72	0.28	3.96	4.88	96.5%	98.8%	98.7%	98.8%
Madeira	NA	0.03	0.11	0.10	93.2%	93.7%	92.9%	97.4%
Montijo	NA	NA	NA	NA	0.0%	50.0%	37.5%	61.1%
Ponta Delgada	NA	NA	NA	0.00	98.2%	97.6%	97.1%	95.0%
Porto	0.77	2.14	1.89	0.88	93.4%	93.5%	94.1%	95.6%
Porto Santo	NA	NA	NA	NA	92.9%	97.4%	90.5%	96.7%
Santa Maria	NA	NA	NA	NA	100.0%	100.0%	92.0%	86.7%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Cascais	NA	NA	NA	NA	NA	NA	NA	NA
Faro	0.09	0.58	0.57	0.50	8.2	8.5	19.6	19.4
Horta	NA	NA	NA	NA	NA	NA	NA	NA
Lisbon	2.14	1.22	3.22	5.66	12.0	11.0	25.2	26.4
Madeira	NA	NA	NA	NA	NA	NA	NA	NA
Montijo	NA	NA	NA	NA	NA	NA	NA	NA
Ponta Delgada	NA	NA	NA	NA	NA	NA	NA	NA
Porto	0.26	0.25	0.44	0.44	9.2	10.7	18.4	17.8
Porto Santo	NA	NA	NA	NA	NA	NA	NA	NA
Santa Maria	NA	NA	NA	NA	NA	NA	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

All Portuguese airports showed adherence around or above 90%.
The national average was 97.2%. With regard to the 2.8% of flights that did not adhere, 2.1% was early and 0.7% was late.

ATC pre-departure delay

The performance at Lisbon deteriorated again in 2023 and exceeded the delays of 2019 (LPPT; 2019: 4.16 min/dep.; 2020: 2.13 min/dep.; 2021: 1.22 min/dep.; 2022: 3.22 min/dep.; 2023: 5.66 min/dep.) Like in previous years this delay is the highest in the SES area.

All causes pre-departure delay

The total (all causes) delay in the actual off block time in 2023 increased at Lisbon (LPPT: 2020: 12.02 min/dep.; 2021: 11.03 min/dep.; 2022: 25.21 min/dep.; 2023: 26.37 min/dep.) and decreased at Porto (LPPR: 2020: 9.15 min/dep.; 2021: 10.70 min/dep.; 2022: 18,40 min/dep.; 2023: 17.77 min/dep.)
These average delays at Lisbon are the highest amongst the SES monitored airports.

5 COST-EFFIENCY - PORTUGAL

5.1 PRB monitoring

• The en route 2023 actual unit cost of Portugal was 35.38 €2017, -12% lower than the determined unit cost (40.37 €2017). The terminal 2023 actual unit cost was 121.66 €2017, -19% lower than the determined unit cost (149.81 €2017).

• The en route 2023 actual service units (4.1M) were +15% higher than the determined service units (3.6M).

• The en route 2023 actual total costs were +1.3 M€2017 (+0.9%) higher than determined. This difference was predominantly due to an overspend in depreciation costs (+1.2 M€2017, or +7.5%), which resulted from the increase of investment in the new ATM system TOPSKY during 2023 after being postponed in the

initial years of RP3. The PRB highlights that the actual number of ACC ATCOs in OPS FTEs for NAV Portugal were -12% below plan.

• Portugal presented a deviation from the criteria to achieve capacity targets, which was considered justified. Considering that actual number of ATCOs have been lower than planned, and that the 2023 en route capacity targets have not been achieved, the situation raises serious concern.

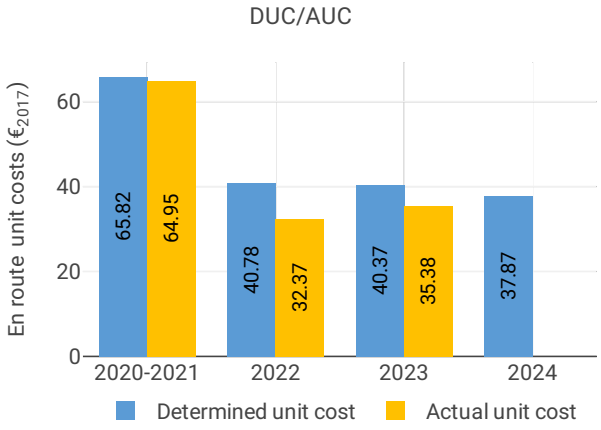
• NAV Portugal spent 23 M€2017 in 2023 related to costs of investments for both en route and terminal charging zones, +3.5% more than determined (22 M€2017).

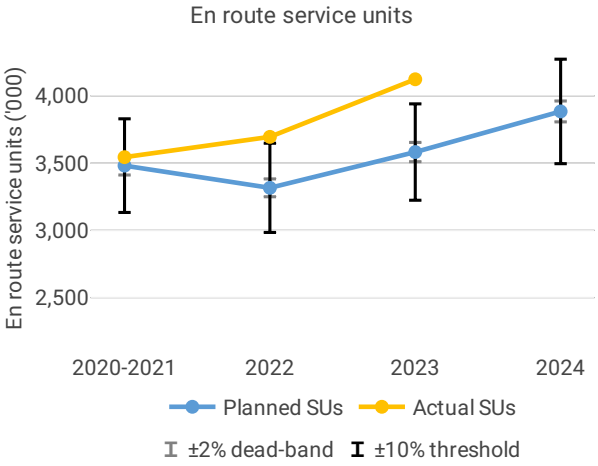
• The en route actual unit cost incurred by users in 2023 was 39.55€ (-5.7% below the 2023 DUC), while the terminal actual unit cost incurred by users was 143.65€ (-8.1% below the 2023 DUC).

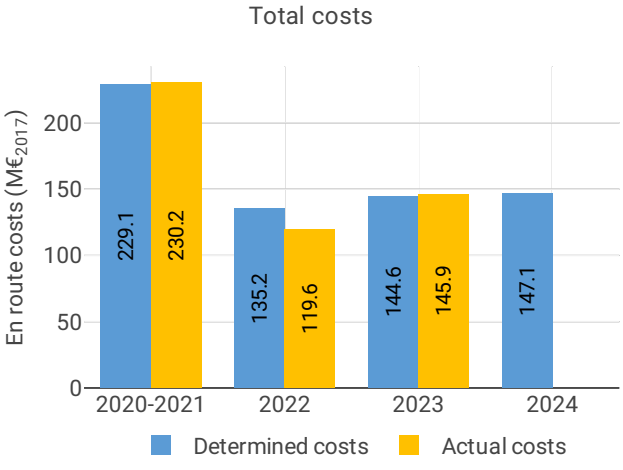
• The PRB will take into consideration the implementation of the RP3 performance plans when assessing the RP4 cost-efficiency targets and recommends that the NSA of Portugal submits a detailed report of the capacity-related measures implemented during 2024. Should the RP3 planned measures not be implemented by the end of RP3, the PRB recommends Portugal to consider the reimbursement to airspace users of excess funds received by ANSPs for measures not implemented during RP3.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

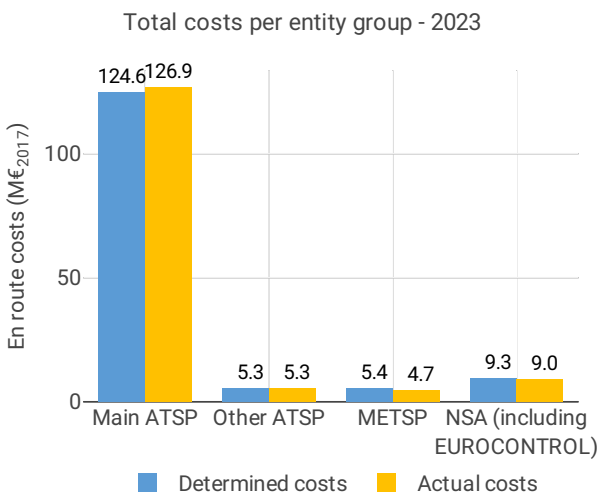


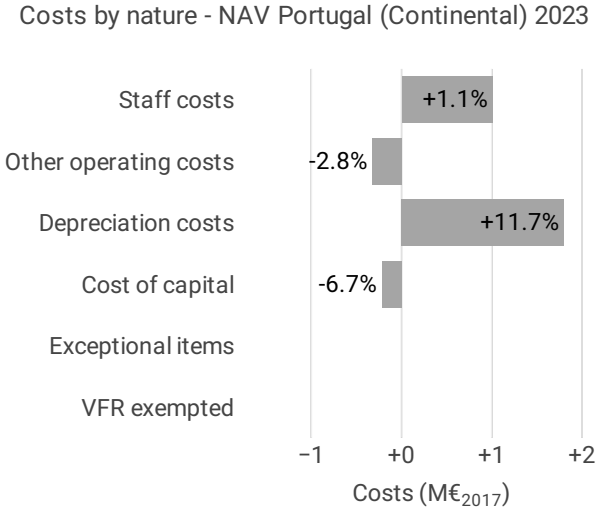




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	234	130	165	NA
Determined costs	233	139	150	155
Difference costs	1	-9	15	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.2%	1.3%	1.4%
Determined inflation index	NA	103.6	104.9	106.4
Actual inflation rate	NA	8.1%	5.3%	NA
Actual inflation index	NA	110.7	116.6	NA
Difference inflation index (p.p.)	NA	+7.1	+11.7	NA





Focus on unit cost

AUC vs. DUC

In 2023, the en route AUC was -12.4% (or -4.99 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TSUs (+15.1%) and slightly higher than planned en route costs in real terms (+0.9%, or +1.3 M€2017). It should be noted that actual inflation index in 2023 was +11.7 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+15.1%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users .

En route costs by entity

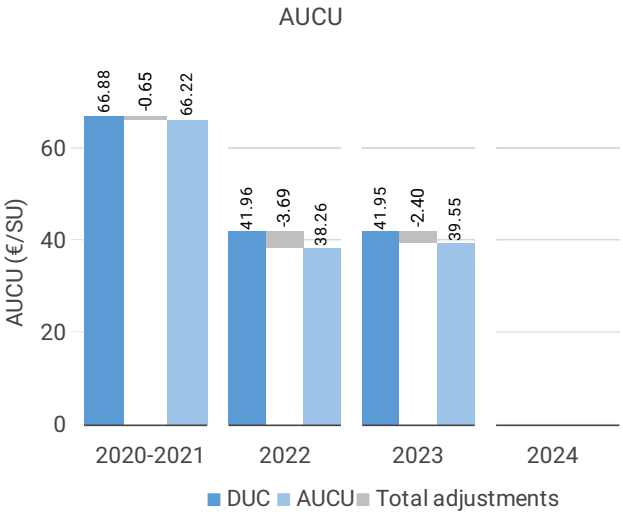
Actual real en route costs are +0.9% (+1.3 M€2017) higher than planned. This is the result of higher costs for the main ANSP, NAV Portugal (+1.8%, or +2.3 M€2017) and the other ANSP (SAR provider, +0.1%, or +0.01 M€2017) and lower costs for the NSA/EUROCONTROL (-3.4%, or -0.3 M€2017) and the MET service provider (-12.8%, or -0.7 M€2017).

En route costs for the main ANSP at charging zone level

Higher than planned en route costs in real terms for NAV Portugal in 2023 (+1.8%, or +2.3 M€2017) result from:

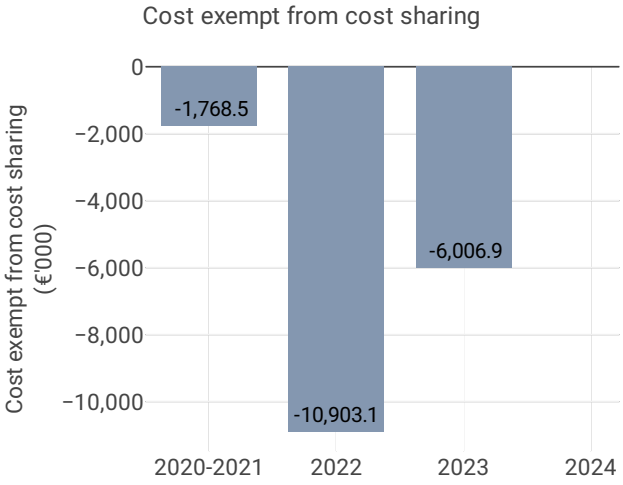
- Higher staff costs (+1.1% in real terms and +12.3% in nominal terms), primarily due to necessary overtime to manage a 15.1% increase in traffic compared to the plan;
- Slightly lower other operating costs by -2.8% in real terms (higher in nominal terms +8.1%);
- Significantly higher depreciation costs (+11.7% in real terms), reflecting the implementation of investments that had been deferred in the early years of the reference period, mainly related to the new ATM system (TOPSKY);
- Significantly lower cost of capital (-6.7% in real terms), due to lower net book value of fixed assets.

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



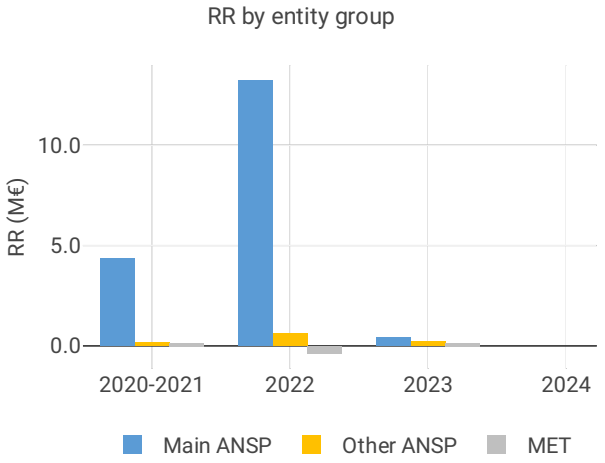
AUCU components (€/SU) – 2023

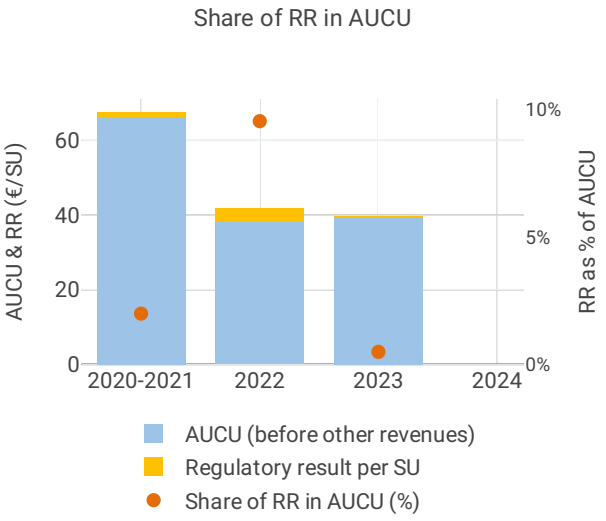
Components of the AUCU in 2023	€/SU
DUC	**41.95**
Inflation adjustment	3.27
Cost exempt from cost-sharing	-1.46
Traffic risk sharing adjustment	-3.50
Traffic adj. (costs not TRS)	-0.57
Finantial incentives	-0.16
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	0.00
Total adjustments	-2.40
AUCU	**39.55**
AUCU vs. DUC	**-5.7%**

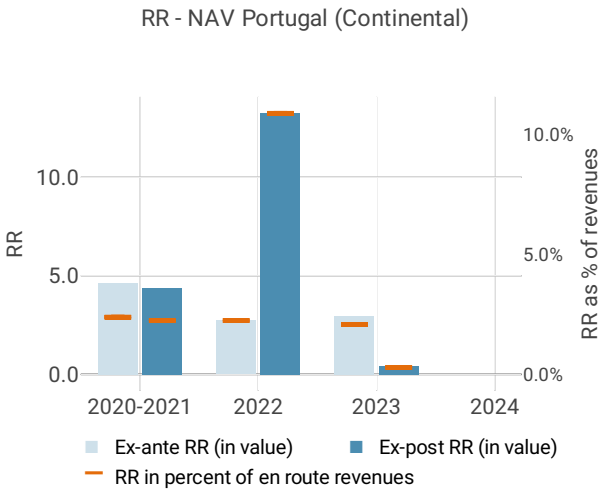


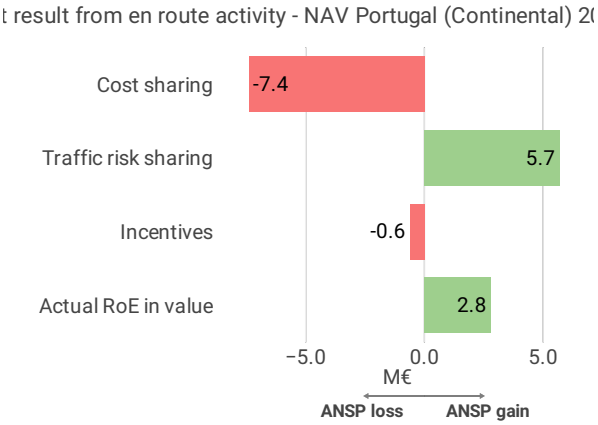
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	545.5	0.13
Competent authorities and qualified entities costs	-82.9	-0.02
Eurocontrol costs	-232.0	-0.06
Pension costs	-6,237.6	-1.51
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-6,006.9**	**-1.46**

5.2.3 Regulatory result (RR)









Focus on regulatory result

NAV Portugal net gain on activity in the Portugal Continental en route charging zone in the year 2023

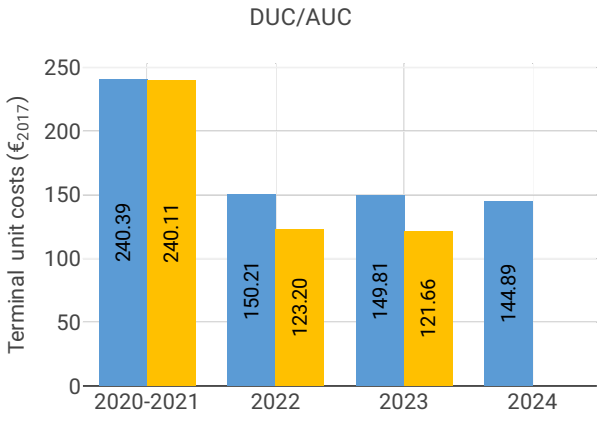
NAV Portugal reported a net loss of -2.3 M€, as a combination of a loss of -7.4 M€ arising from the cost sharing mechanism, with a gain of +5.7 M€ arising from the traffic risk sharing mechanism and a loss of -0.6 M€ relating to financial incentives.

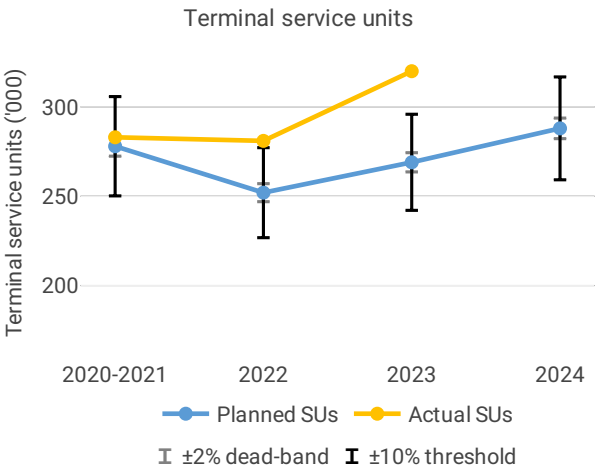
NAV Portugal overall regulatory results (RR) for the en route activity

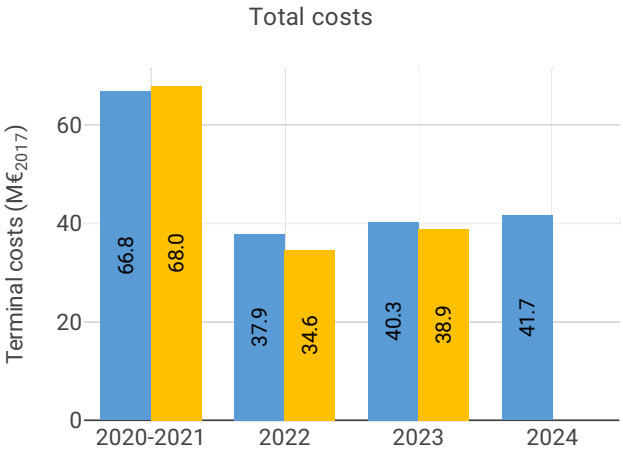
Ex-post, the overall RR taking into account the net loss from the en route activity mentioned above (-2.3 M€) and the actual RoE (+2.8 M€) amounts to +0.4 M€ (0.3% of the en route revenues). The resulting ex-post rate of return on equity is 0.6%, which is lower than the 4.2% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

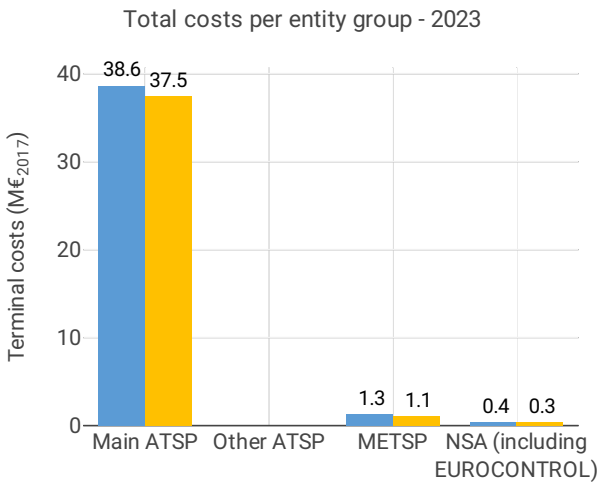


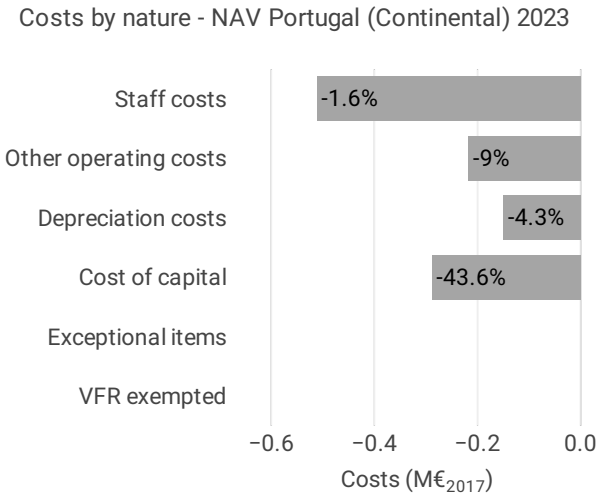




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	69	38	45	NA
Determined costs	68	39	42	44
Difference costs	1	-1	3	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.2%	1.3%	1.4%
Determined inflation index	NA	103.6	104.9	106.4
Actual inflation rate	NA	8.1%	5.3%	NA
Actual inflation index	NA	110.7	116.6	NA
Difference inflation index (p.p.)	NA	+7.1	+11.7	NA





Focus on unit cost

AUC vs. DUC

In 2023, the terminal AUC was -18.8% (or -28.15 €2017) lower than the planned DUC. This results from the combination of significantly higher than planned TNSUs (+18.7%) and lower than planned terminal costs in real terms (-3.6%, or -1.4 M€2017). It should be noted that actual inflation index in 2023 was +11.7 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (+18.7%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users .

Terminal costs by entity

Actual real terminal costs are -3.6% (-1.4 M€2017) lower than planned. This is the result of lower costs for the main ANSP, NAV Portugal (-3.0%, or -1.2 M€2017), the MET service provider (-16.6%, or -0.2 M€2017) and the NSA (-15.2%, or -0.1 M€2017).

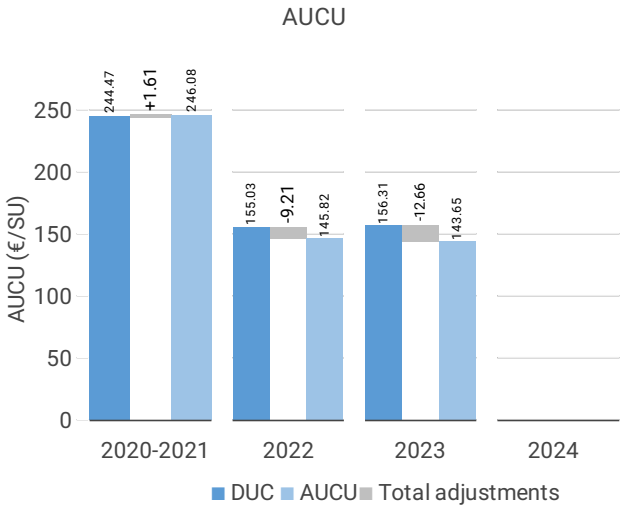
Terminal costs for the main ANSP at charging zone level

Lower than planned terminal costs in real terms for NAV Portugal in 2023 (-3.0%, or -1.2 M€2017) result from:

- Slightly lower staff costs in real terms (-1.6%) but higher in nominal terms (+9.4%) due to non-controllable financial market factors that elevated the final costs of the Defined Benefit (DB) pension plans, leading to higher than anticipated pension liabilities;
- Significantly lower other operating costs, by -9.0% in real terms (higher +1% in nominal terms), thanks to

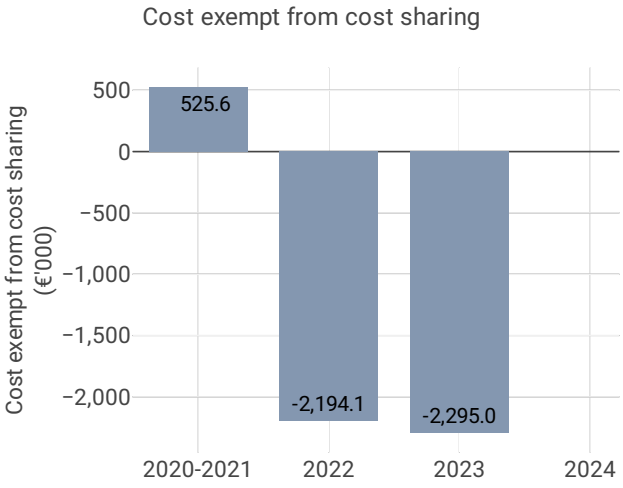
savings that offset higher charges for electricity, IT consulting services and other external supplies;
- Lower depreciation (-4.3%), mainly due to delays in the TOPSKY Towers project,
- Significantly lower cost of capital (-43.6%), due to a lower net book value of fixed assets.

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



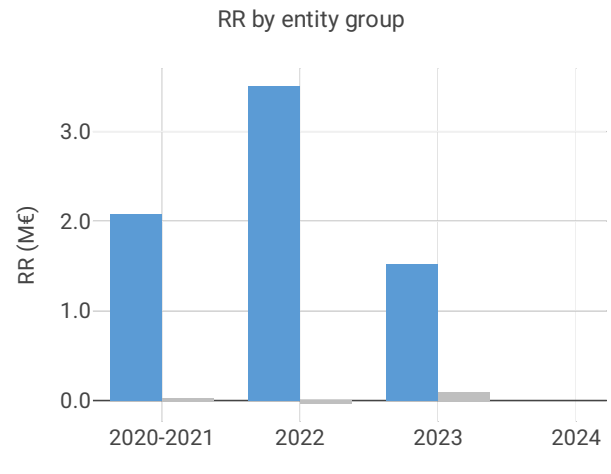
AUCU components (€/SU) – 2023

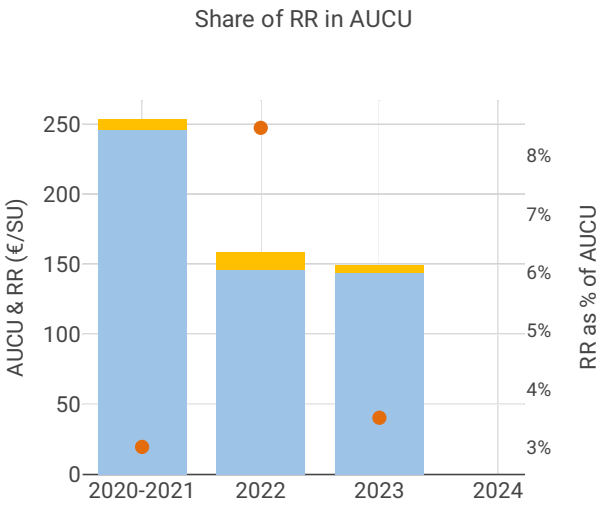
Components of the AUCU in 2023	€/SU
DUC	**156.31**
Inflation adjustment	13.03
Cost exempt from cost-sharing	-7.18
Traffic risk sharing adjustment	-17.98
Traffic adj. (costs not TRS)	-1.16
Finantial incentives	0.63
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	0.00
Total adjustments	-12.66
AUCU	**143.65**
AUCU vs. DUC	**-8.1%**

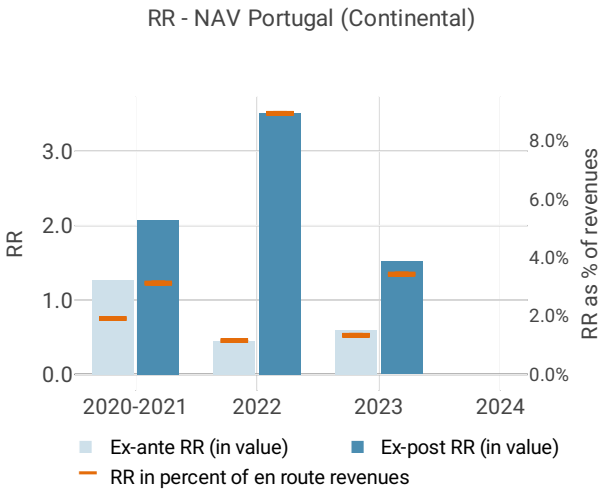


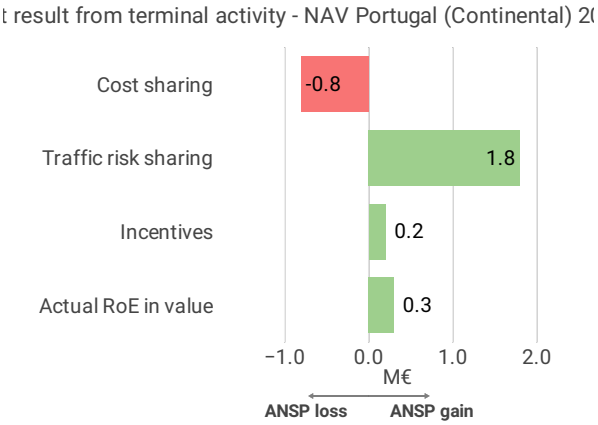
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	-608.5	-1.90
Competent authorities and qualified entities costs	-55.0	-0.17
Eurocontrol costs	0.0	0.00
Pension costs	-1,631.5	-5.11
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-2,295.0**	**-7.18**

5.3.3 Regulatory result (RR)









Focus on regulatory result

NAV Portugal net gain on activity in the Portugal Continental terminal charging zone in the year 2023

NAV Portugal reported a net gain of +1.2 M€, as a combination of a loss of -0.8 M€ arising from the cost sharing mechanism, with a gain of +1.8 M€ arising from the traffic risk sharing mechanism and a gain of +0.2 M€ relating to financial incentives.

NAV Portugal overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+1.2 M€) and the actual RoE (+0.3 M€) amounts to +1.5 M€ (3.4% of the terminal revenues). The resulting ex-post rate of return on equity is 19.3%, which is higher than the 4.2% planned in the PP.