



Performance Review Body Monitoring Report

Denmark - 2020

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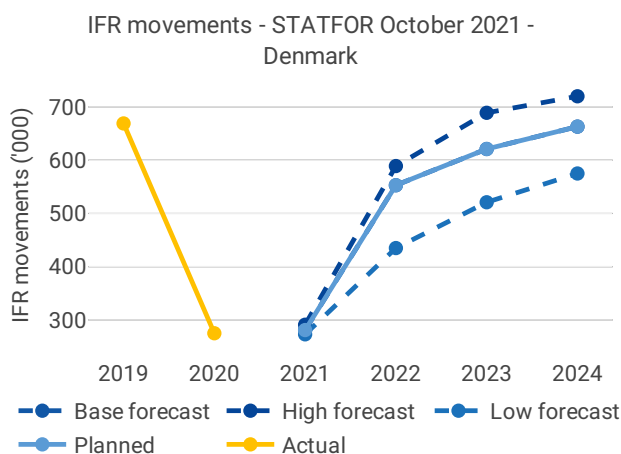
1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/770 of 13 April 2022

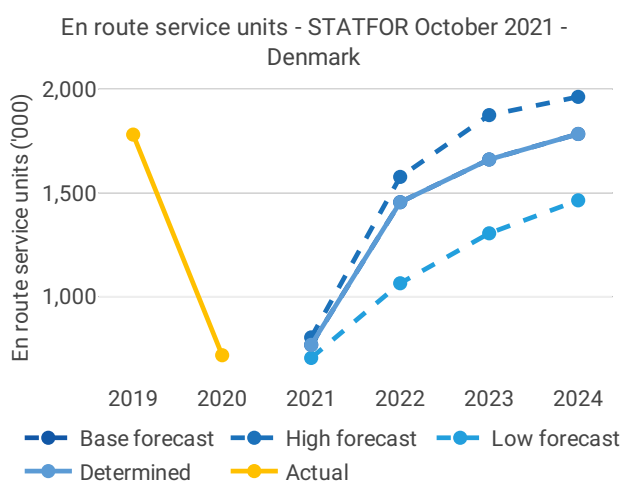
List of ACCs 1 Copenhagen ACC	Exchange rate (1 EUR=) 2017: 7.43692 DKK 2020: 7.45255 DKK	Main ANSP • NAVIAIR
No of airports in the scope of the performance plan: • ≥80'K 1 • <80'K 0	Share of Union-wide: • traffic (TSUs) 2020 1.4% • en route costs 2020 1.6%	Other ANSPs —
	Share en route / terminal costs 2020 80% / 20%	MET Providers • DMI
	En route charging zone(s) Denmark	
	Terminal charging zone(s) Denmark	

1.2 Traffic (En route traffic zone)



- Denmark recorded 275K actual IFR movements in 2020, -59% compared to 2019 (669K).

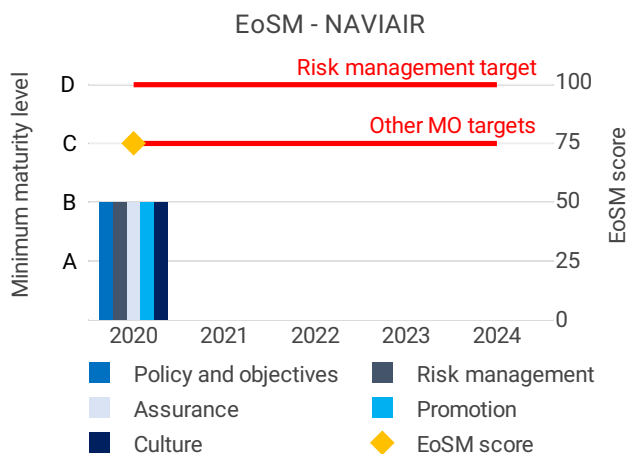
- Denmark IFR movements reduced more than the average reduction at Union-wide level (-57%).



- Denmark recorded 717K actual en route service units in 2020, -60% compared to 2019 (1,781K).

- Denmark service units reduced more than the average reduction at Union-wide level (-57%).

1.3 Safety (Main ANSP)



- NAVIAIR did not achieve the RP3 targets for the EoS in any of the safety management objectives.

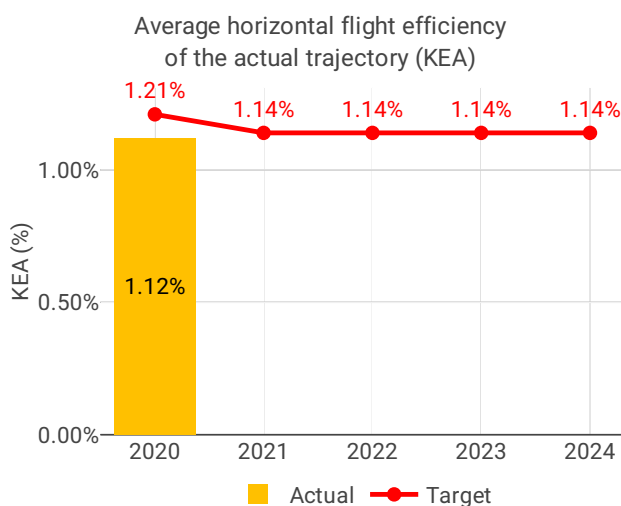
- Based on the maturity achieved at the end of RP2, the EoS performance is lower than expected (NAVIAIR exceeded the targets in all but one management objective in 2019). NAVIAIR needs to improve its maturity by one level in six out of 28 EoS questions and by two levels in one question to achieve the RP3 targets, which should be feasible.

- Denmark recorded stable performance with respect to occurrences. The rate of separation minima infringements and of runway incursion per

movements remained below the Union-wide average rate.

- NAVIAIR should improve its SMS by implementing automated safety data recording systems.

1.4 Environment (Member State)



- Denmark achieved a KEA performance of 1.12% compared to its reference value of 1.21% and therefore contributed positively towards achieving the Union-wide target.

- While Denmark stated that the significant fall in traffic boosted its KEA performance and that it expects that performance will worsen as traffic grows, there were no major operational or structural changes made in 2020 to help ensure the performance can be sustained as best as possible.

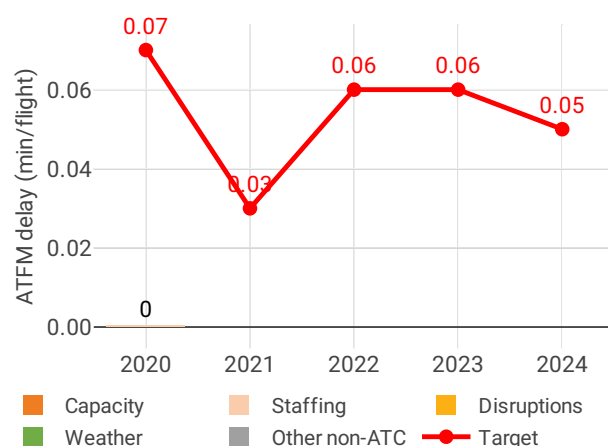
- While the share of flights operating CCO/CDO at Copenhagen airport improved in 2020 compared to 2019, the CCO performance remained stable. Around half of all arrivals at Copenhagen airports

completed a CDO procedure, which is one of the best Union-wide performance.

- The additional time airspace users spent taxiing or holding in terminal airspace reduced by 37% compared to 2019.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



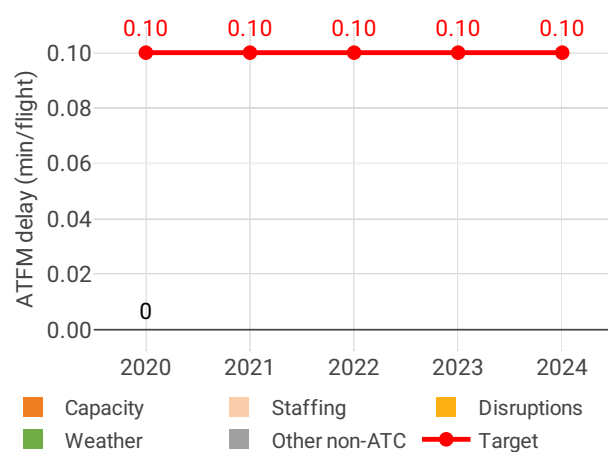
- NAVIAIR registered near zero minutes of average en route ATFM delay per flight during 2020, thus meeting the local breakdown value of 0.14.

- Delays must be considered in the context of the traffic evolution: IFR movements in 2020 were 59% below the 2019 levels in Denmark.

- Denmark reported no capacity issues and ATCO numbers remained flat at the 2019 value in line with previous plans.

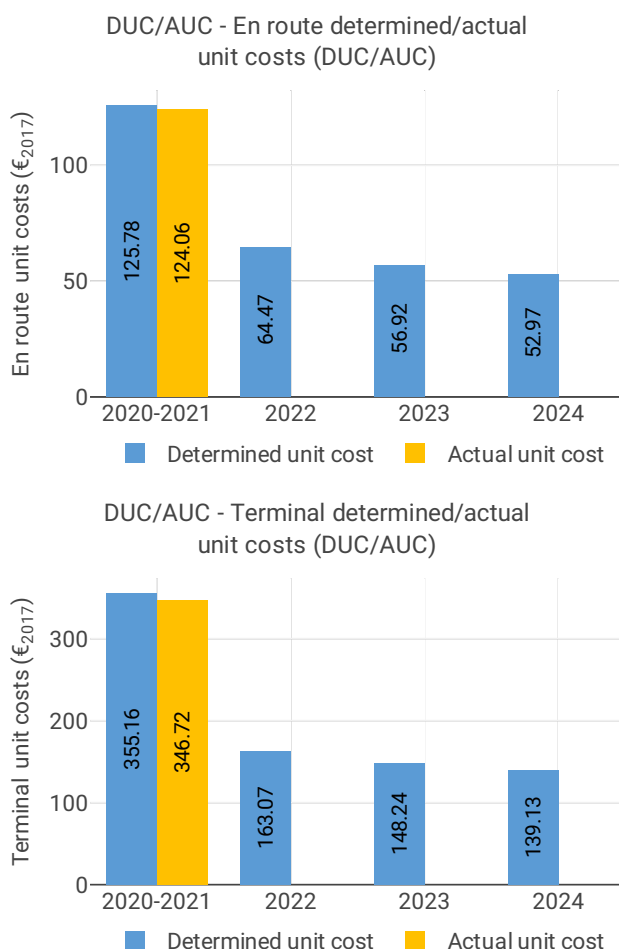
- The yearly total of sector opening hours in Copenhagen ACC was 44,820, showing a 0.3% increase compared to 2019.

Average arrival ATFM delay per flight by delay groups



- Copenhagen ACC registered 5.31 IFR movements per one sector opening hour in 2020, being 58.9% below 2019 levels.

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



- The 2020 actual service units (717K) were 57% lower than the actual service units in 2019 (1,679K).

- Denmark increased total costs in 2020 by 1.4 M€2017 (+2%) compared to 2019 actual costs. The main driver of the increase is staff costs, with costs being 5.4 M€2017 higher (+10%), due to costs associated with voluntary resignations. Moreover, cost of capital increased by 2.5 M€2017 (+63%).

- Exceptional costs decreased by 7.2 M€2017 (-354%), the reason being unclear since the NSA stated that such decrease is supposed to reflect cost reductions that have not yet been decided.

- NAVIAIR shows a perfect execution of its investment plans, with 2020 actual cost of investments being equal to the investment plans (21 M€2017).

2 SAFETY - DENMARK

2.1 PRB monitoring

- NAVIAIR did not achieve the RP3 targets for the EoSM in any of the safety management objectives.
- Based on the maturity achieved at the end of RP2, the EoSM performance is lower than expected (NAVIAIR exceeded the targets in all but one management objective in 2019). NAVIAIR needs to improve its maturity by one level in six out of 28 EoSM questions and by two levels in one question to achieve the RP3 targets, which should be feasible.
- Denmark recorded stable performance with respect to occurrences. The rate of separation minima infringements and of runway incursion per movements remained below the Union-wide average rate.
- NAVIAIR should improve its SMS by implementing automated safety data recording systems.

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



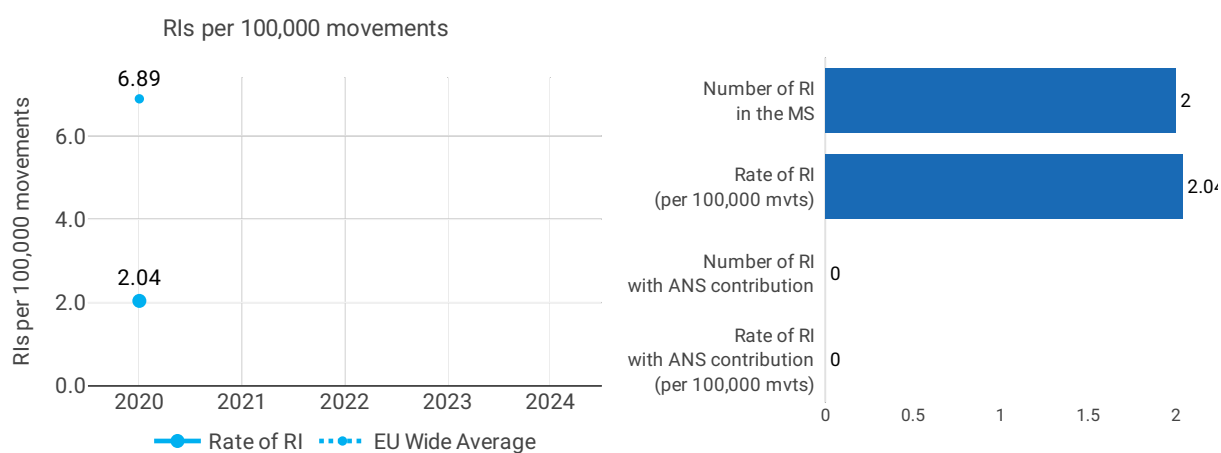
Focus on EoSM

All EoSM components are below 2024 EoSM target levels. Improvements in safety management are still expected in all components during RP3 to achieve 2024 targets.

Detailed information on Safety performance monitoring for the year 2020 are included in Performance Review Body Monitoring Report 2020, Annex III – Safety report

2.3 Safety occurrences

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



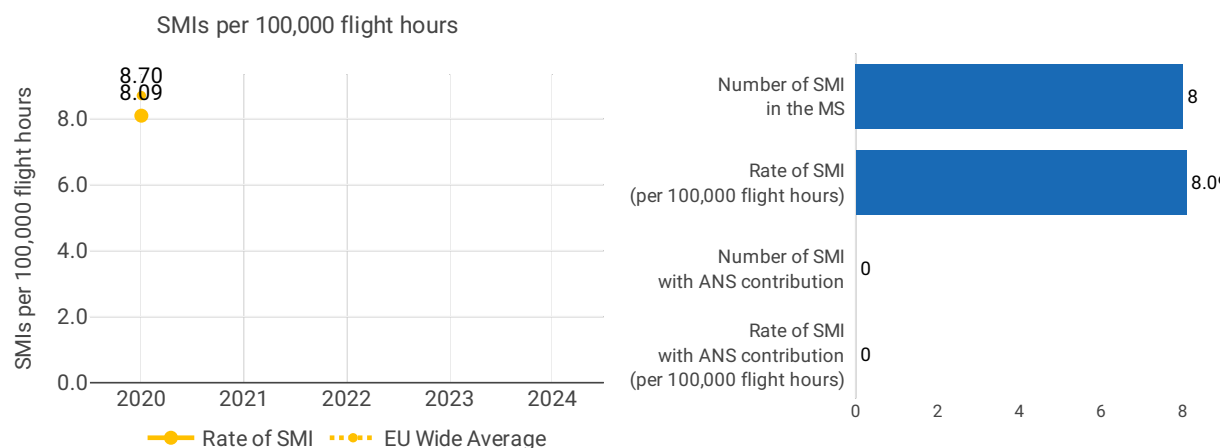
Rate of RIs per 100,000 airport movements - Denmark

#	Airport name	APT movements	Number of RI	Rate RI per 100,000
1	Copenhagen - Kastrup	98,204	0	0.00

Focus on runway incursions

Detailed information on Safety performance monitoring for the year 2020 are included in Performance Review Body Monitoring Report 2020, 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											
#	ANSP	Flight hours					Number of SMIs				
		2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	NAVIAIR	98,936	NA	NA	NA	NA	0	NA	NA	NA	NA

#	ANSP	Rate of SMI per 100,000 flight hours					% variation in rate of SMIs				
		2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	NAVIAIR	0.0	NA	NA	NA	NA	NA	NA	NA	NA	NA

Focus on separation minima

Detailed information on Safety performance monitoring for the year 2020 are included in Performance Review Body Monitoring Report 2020, Annex III – Safety report

2.3.3 Quality of occurrences reporting

Detailed information on Safety performance monitoring for the year 2020 are included in Performance Review Body Monitoring Report 2020, Annex III – Safety report

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

2020	
For RIs	For SMIs
X	X

Detailed information on Safety performance monitoring for the year 2020 are included in Performance Review Body Monitoring Report 2020, Annex III – Safety report

3 ENVIRONMENT - DENMARK

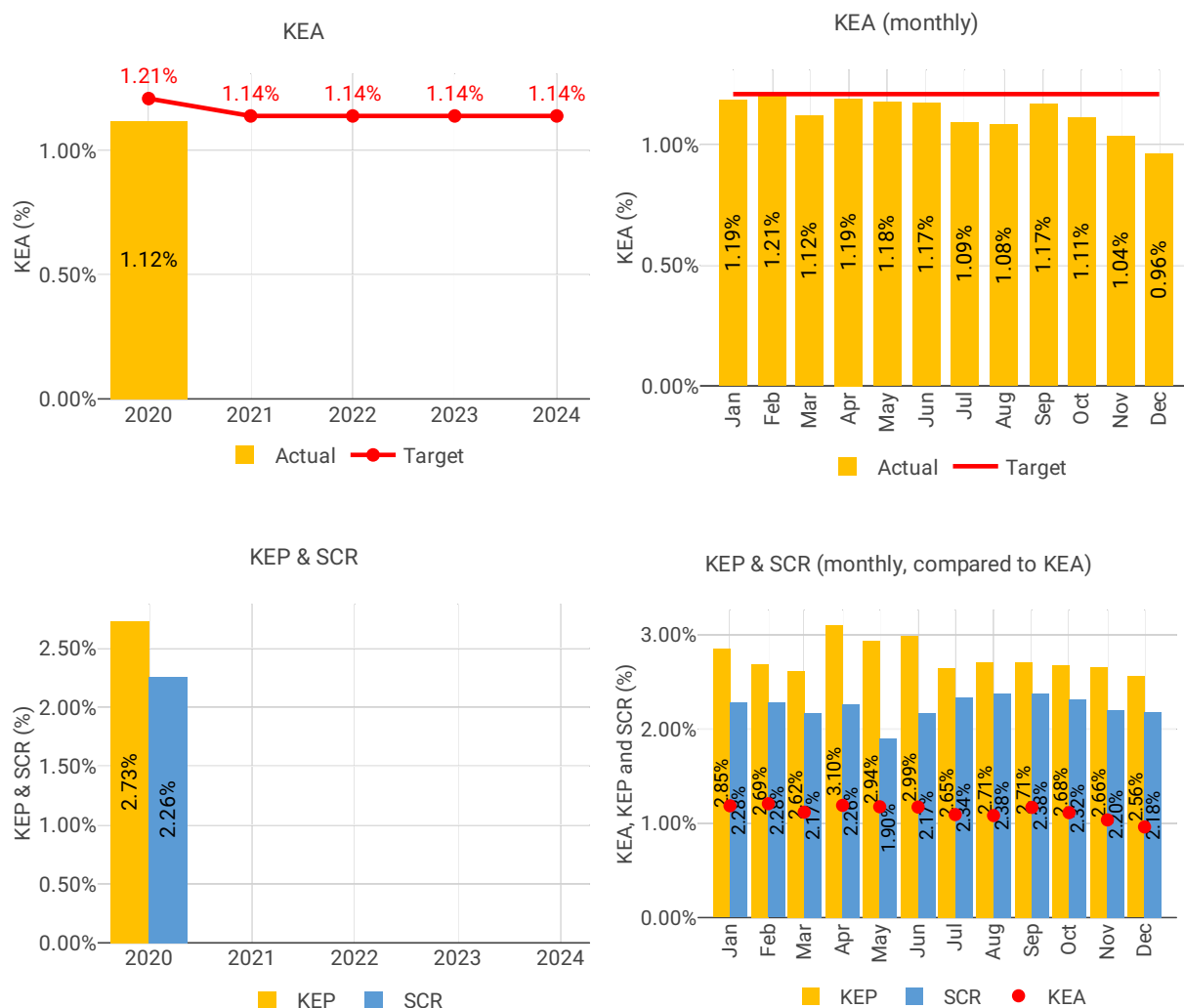
3.1 PRB monitoring

- Denmark achieved a KEA performance of 1.12% compared to its reference value of 1.21% and therefore contributed positively towards achieving the Union-wide target.

- While Denmark stated that the significant fall in traffic boosted its KEA performance and that it expects that performance will worsen as traffic grows, there were no major operational or structural changes made in 2020 to help ensure the performance can be sustained as best as possible.
- While the share of flights operating CCO/CDO at Copenhagen airport improved in 2020 compared to 2019, the CCO performance remained stable. Around half of all arrivals at Copenhagen airports completed a CDO procedure, which is one of the best Union-wide performance.
- The additional time airspace users spent taxiing or holding in terminal airspace reduced by 37% compared to 2019.

3.2 En route performance

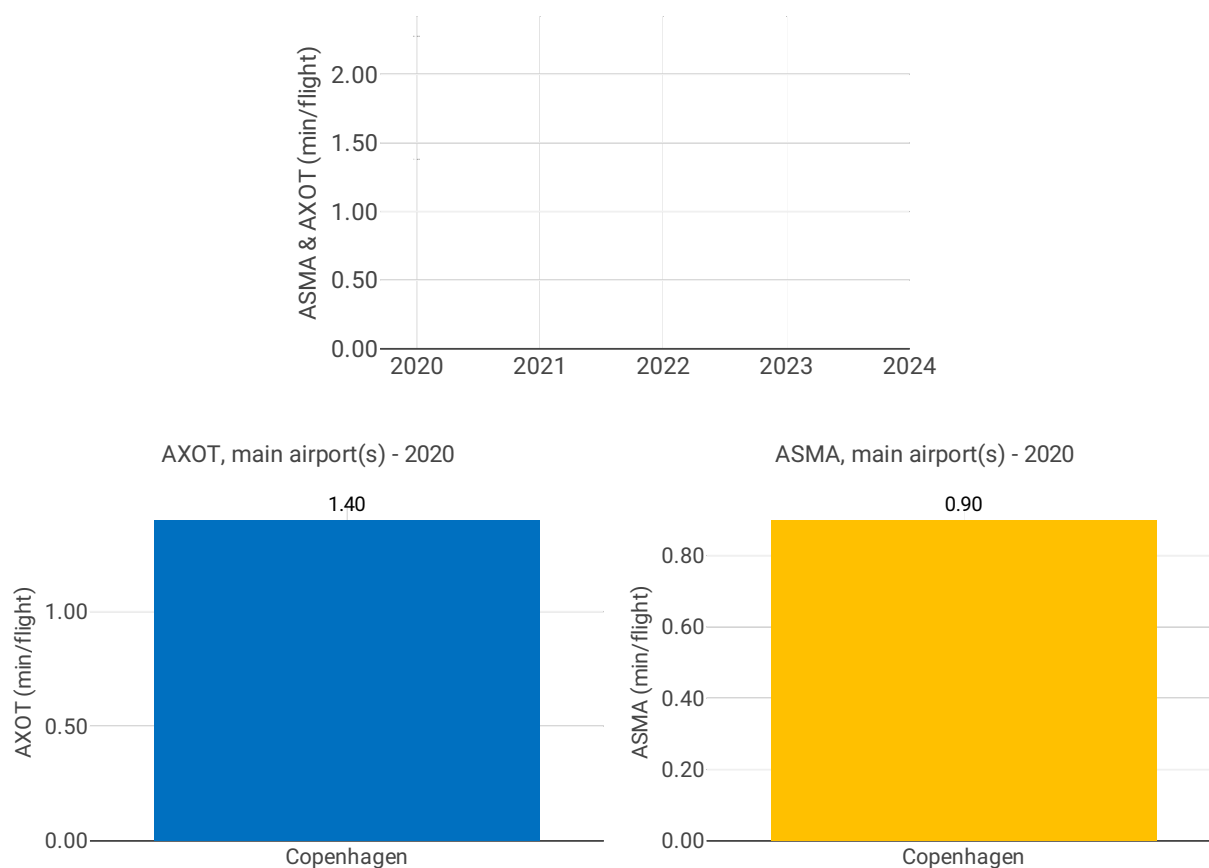
3.2.1 Horizontal flight efficiency of the actual trajectory (KEA) (KPI#1), of the last filed flight plan (KEP) (PI#1) & shortest constrained route (SCR) (PI#2)



3.3 Terminal performance

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

ASMA & AXOT



Focus on ASMA & AXOT

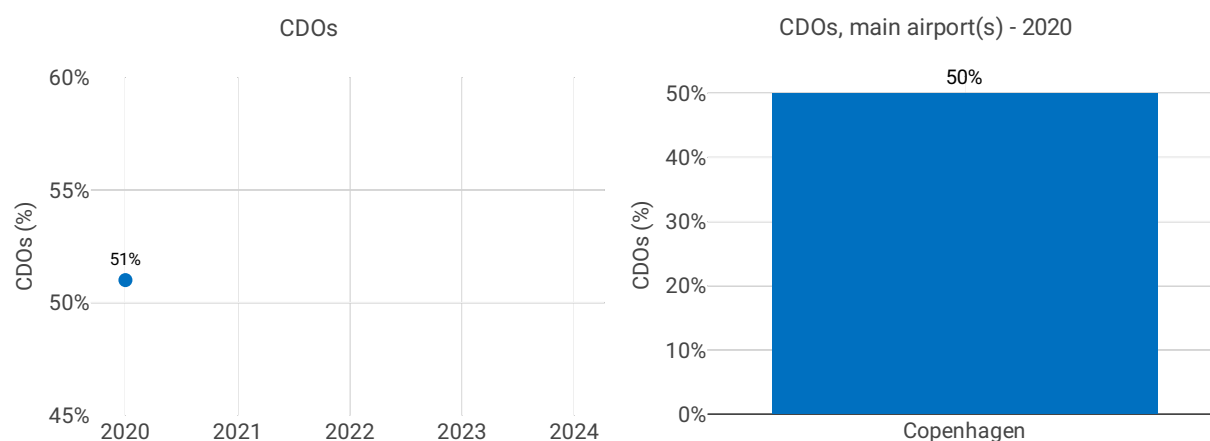
AXOT

Additional times at Copenhagen (EKCH; 2019: 2.59 min/dep.; 2020: 1.4 min/dep.) averaged 0.67 min/dep. from April until the end of the year, resulting in an annual reduction of 46% with respect to the previous year.

ASMA

The additional times in the terminal airspace also decreased in 2020 (EKCH; 2019: 1.07 min/arr.; 2020: 0.9 min/arr.) but in a smaller proportion compared to the additional taxi-out times or the additional ASMA times at other European airports.

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

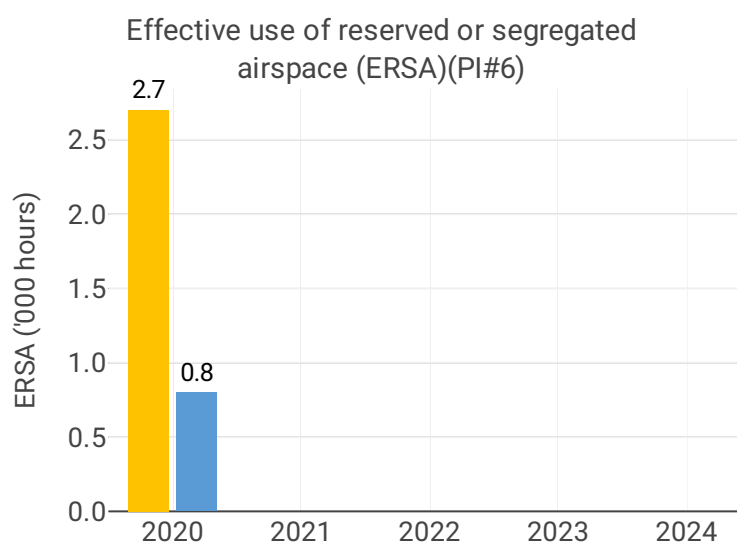


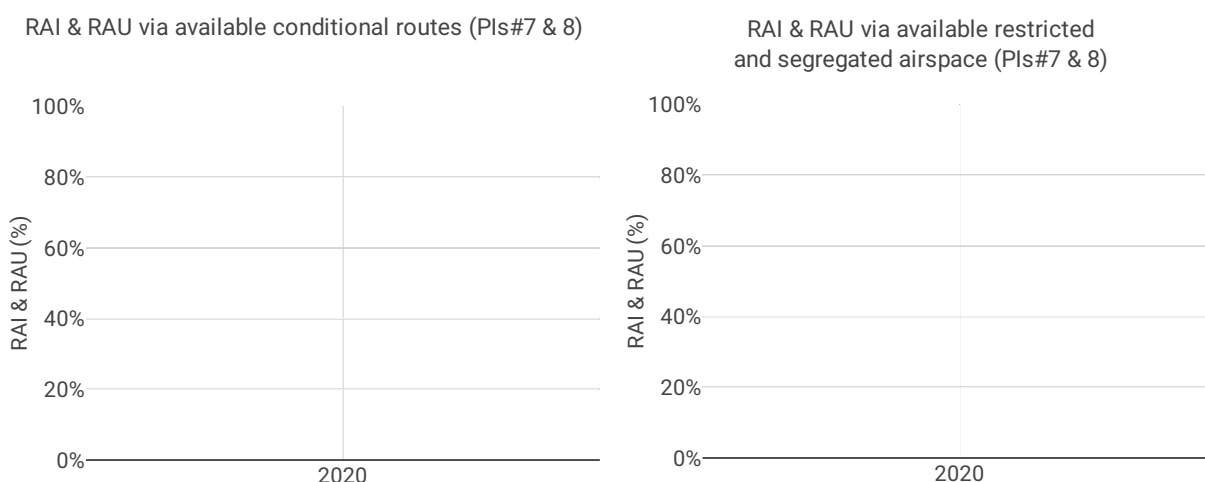
Focus CDOs

The share of CDO flights is 50.2% which is well above the overall RP3 value in 2020 (32.5%) and in the higher range of all observed values in 2020.

Airport Name	Airport level														
	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
Copenhagen	1.4	NA	NA	NA	NA	0.9	NA	NA	NA	NA	50%	NA	NA	NA	NA

3.4 Civil-Military dimension





Focus on Civil-Military dimension

Update on Military dimension of the plan

FUA is fully implemented in Denmark, thus it is very hard to increase capacity any further. Denmark fulfils the capacity targets. Denmark already fulfils the environmental targets. The airspace design and procedures used are created in order to minimise the negative effects on the environmental performance.

Military - related measures implemented or planned to improve environment and capacity

FUA is fully implemented in Denmark. NSA, ANSP and Military cooperates with the scope of further reduction of the impact of the military dimension. NSA monitors capacity performance.

Initiatives implemented or planned to improve PI#6

None: NSA monitors the performance via regularly reporting. ANSP and Military evaluates the performance with the scope of further improvement if possible.

Initiatives implemented or planned to improve PI#7

No data available.

Initiatives implemented or planned to improve PI#8

No data available.

4 CAPACITY - DENMARK

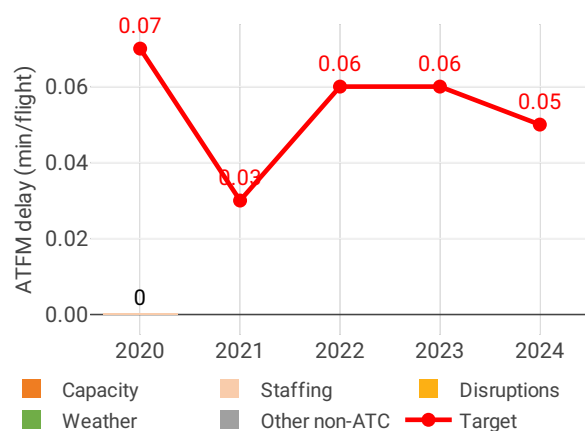
4.1 PRB monitoring

- NAVIAIR registered near zero minutes of average en route ATFM delay per flight during 2020, thus meeting the local breakdown value of 0.14.
- Delays must be considered in the context of the traffic evolution: IFR movements in 2020 were 59% below the 2019 levels in Denmark.
- Denmark reported no capacity issues and ATCO numbers remained flat at the 2019 value in line with previous plans.
- The yearly total of sector opening hours in Copenhagen ACC was 44,820, showing a 0.3% increase compared to 2019.
- Copenhagen ACC registered 5.31 IFR movements per one sector opening hour in 2020, being 58.9% below 2019 levels.

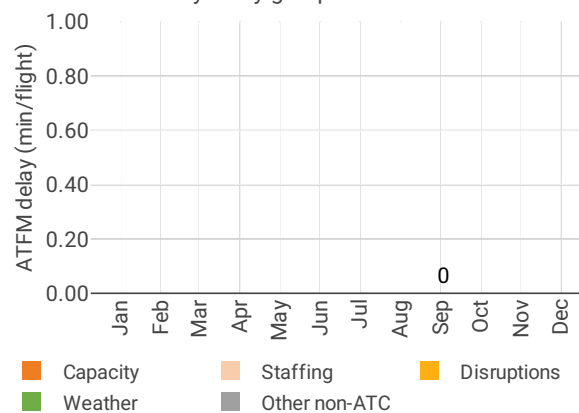
4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)

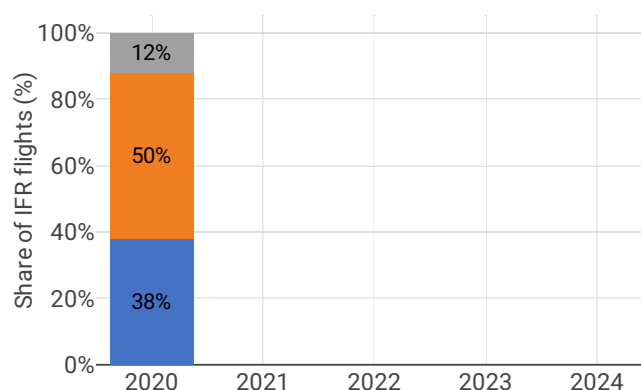
Average en route ATFM delay per flight by delay groups



Monthly distribution of en route ATFM delay by delay groups - 2020



Distribution of IFR flights per the duration of en route ATFM delay



Focus on en route ATFM delay

Summary of capacity performance

The Copenhagen FIR experienced a traffic reduction of 59% from 2019 levels, to 376k flights. The traffic level was accommodated with negligible en route ATFM delays to airspace users.

NSA's assessment of capacity performance

The capacity KPI has been met.

Monitoring process for capacity performance

No data available.

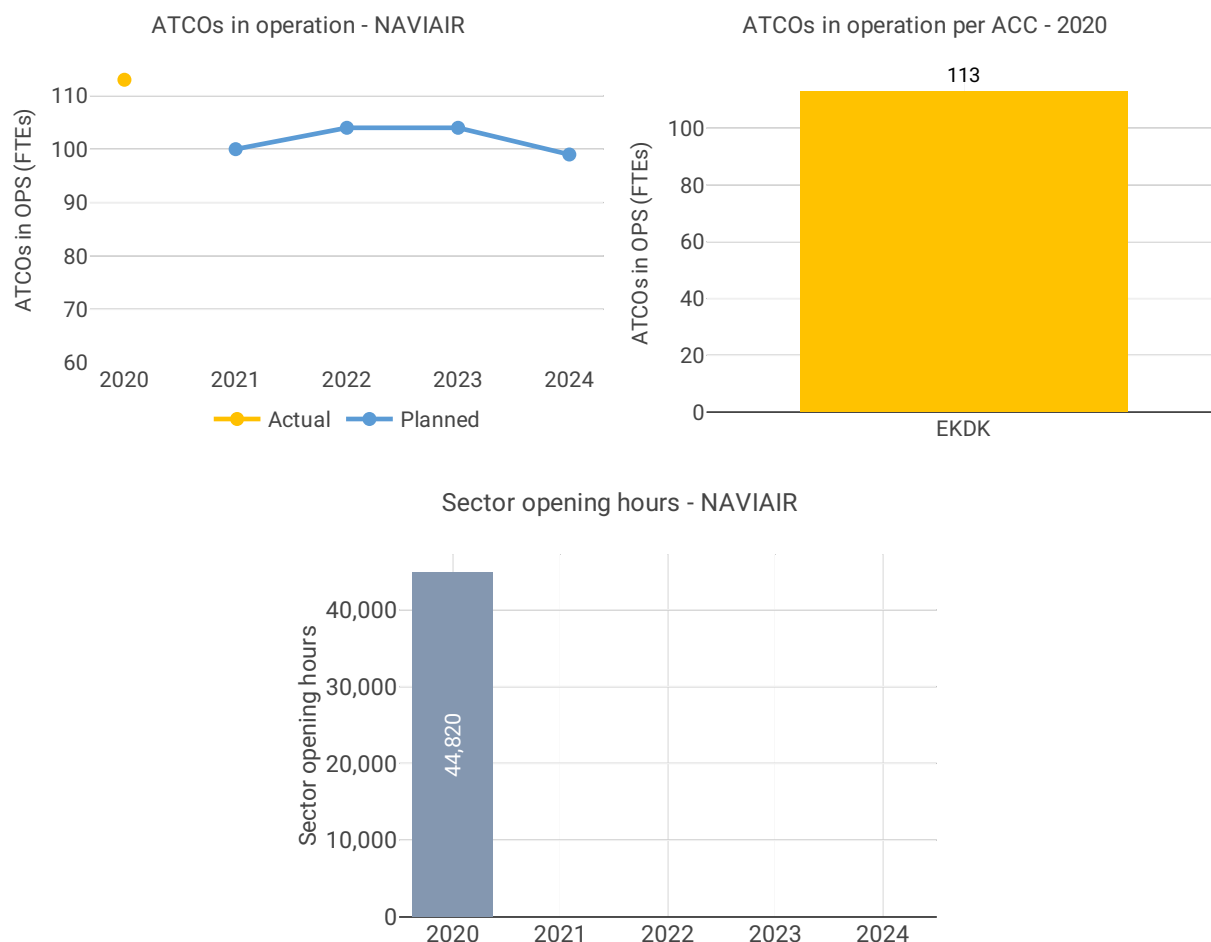
Capacity planning

No data available.

Application of Corrective Measures for Capacity (if applicable)

No data available.

4.2.2 Other indicators

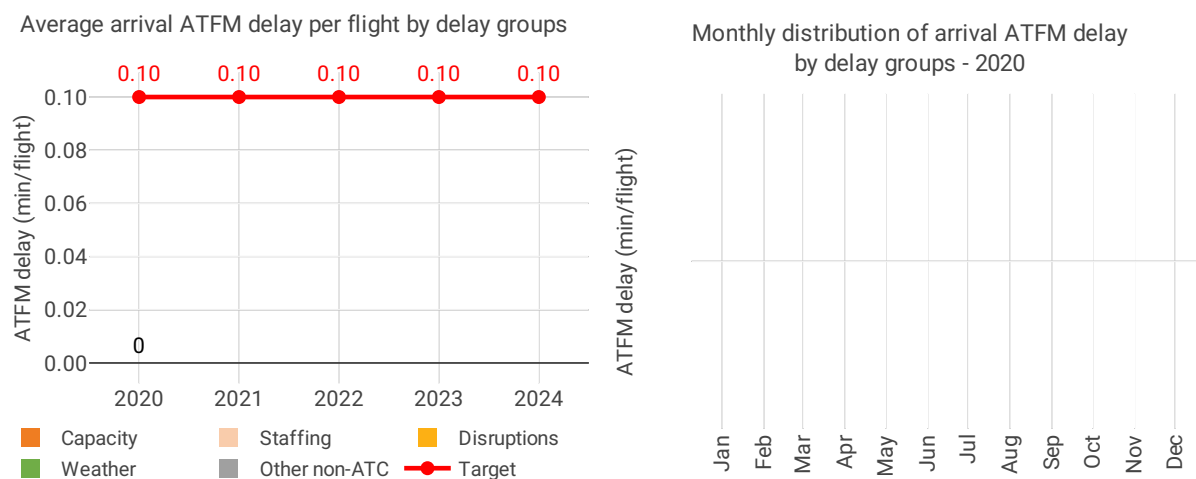


Focus on ATCOs in operations

This is the amount of ATCOs in OPS and the expectation of the ATCOs in/out. Notice should be taken that this is in line with the ACE-definition and as such only a partial amount of the ATCO FTE's.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)



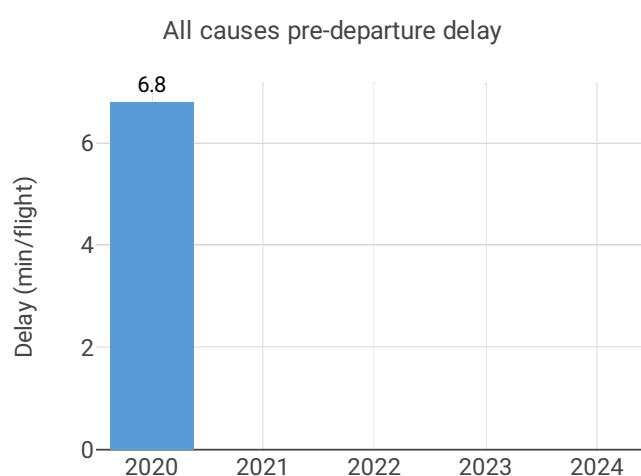
Focus on arrival ATFM delay

Denmark only has Copenhagen/Kastrup (EKCH) airport subject to RP3 monitoring for which the APDF is successfully established and the monitoring of the capacity indicators can be performed. Nevertheless, the quality of the reporting does not allow for the calculation of the ATC pre-departure delay, with more than 60% of the reported delay not allocated to any cause. Traffic at this airport in 2020 decreased by 63% with respect to 2019. Copenhagen registered zero arrival ATFM delays in the entire year and had very high slot adherence.

Copenhagen, that in the last years had registered low delays, observed zero ATFM delays in 2020 (EKCH; 2019: 0.07 min/arr.; 2020: 0 min/arr.).

The provisional national target on arrival ATFM delay in 2020 was met. 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.

4.3.2 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	2024	2020	2021	2022	2023	2024
Copenhagen	NA	NA	NA	NA	NA	98.7%	NA%	NA%	NA%	NA%

Airport name	ATC pre departure delay (PI#2)					All causes pre departure delay (PI#3)				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
Copenhagen	0.02	NA	NA	NA	NA	6.8	NA	NA	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

With the drastic drop in traffic, regulated departures from Copenhagen also virtually disappeared as of April. The annual figure is therefore driven by the performance in the first trimester. Copenhagen's ATFM slot compliance was 98.7%. Only 32 flights in total in 2020 departed out of the STW, 31 of them early and 1 late. Danish NSA reports: *Performance improved slightly. NSA monitors the performance via monthly reports from the ANSP, and yearly evaluation.*

ATC pre-departure delay

The quality of the airport data reported by Copenhagen is too low, preventing the calculation of this indicator. The calculation of the ATC pre-departure delay is based on the data provided by the airport operators through the Airport Operator Data Flow (APDF) which is properly implemented at Copenhagen. However, there are several quality checks before EUROCONTROL can produce the final value which is established as the average minutes of pre-departure delay (delay in the actual off block time) associated to the IATA delay code 89 (through the APDF, for each delayed flight, the reasons for that delay have to be transmitted and coded according to IATA delay codes).

However, sometimes the airport operator has no information concerning the reasons for the delay in the off block, or they cannot convert the reasons to the IATA delay codes. In those cases, the airport operator might:

- Not report any information about the reasons for the delay for that flight (unreported delay)
- Report a special code to indicate they do not have the information (code ZZZ)
- Report a special code to indicate they do not have the means to collect and/or translate the information (code 999)

To be able to calculate with a minimum of accuracy the PI for a given month, the minutes of delay that are not attributed to any IATA code reason should not exceed 40% of the total minutes of pre-departure delay observed at the airport. Finally, to be able to produce the annual figure, at least 10 months of valid data is requested by EUROCONTROL.

The share of unidentified delay reported by Copenhagen was above 40% in April, August and October 2020, preventing the annual calculation of this indicator. Copenhagen usually has proper reporting, and the issue those months is likely to be due to the special traffic composition.

All causes pre-departure delay

The total (all causes) delay in the actual off block time at Copenhagen in 2020 was 6.79 min/dep. The higher delays per flight were observed in February and December. This performance indicator has been introduced in the performance scheme for the first time this year, so no evolution with respect to 2019 can be analysed.

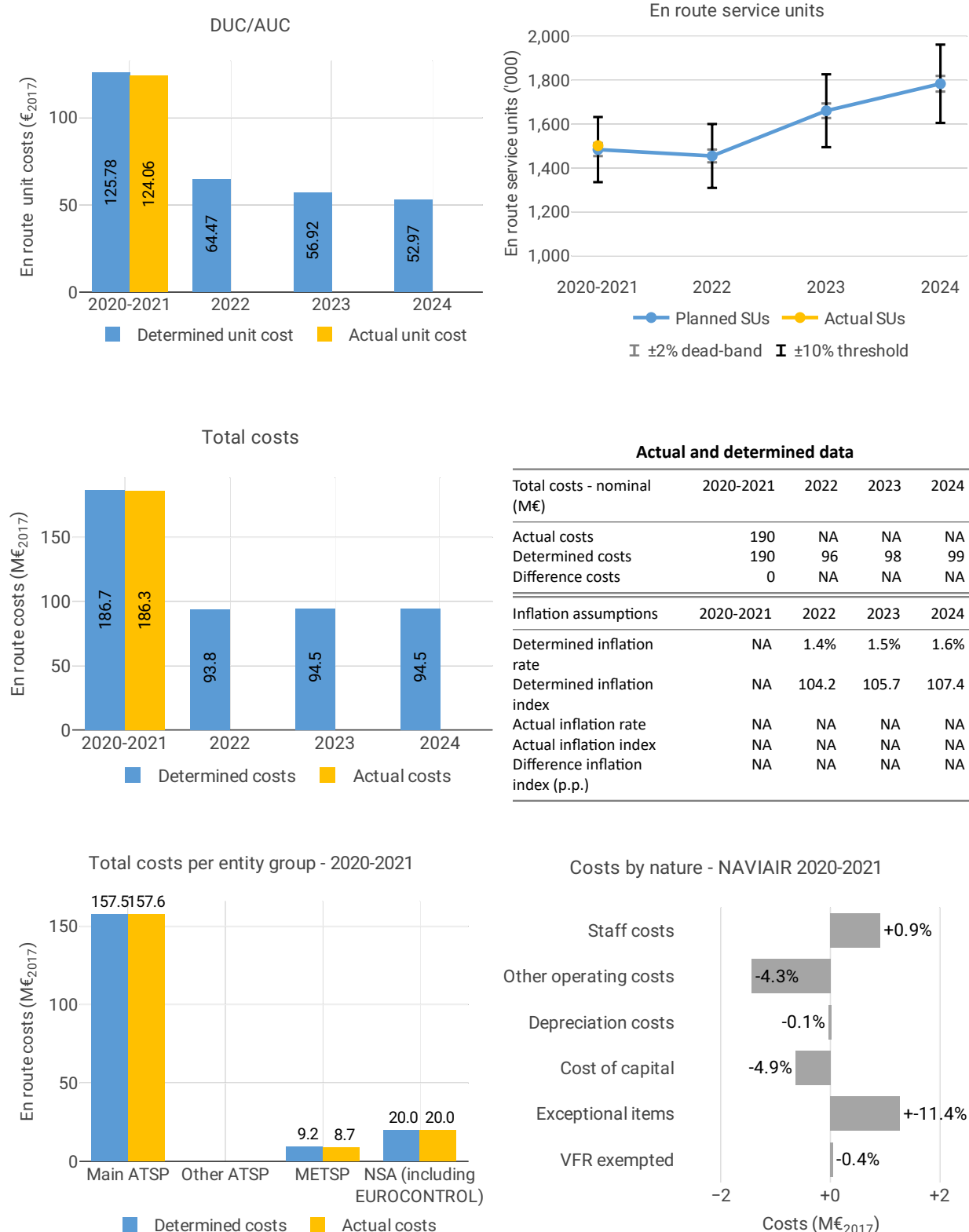
5 COST-EFFICIENCY - DENMARK

5.1 PRB monitoring

- The 2020 actual service units (717K) were 57% lower than the actual service units in 2019 (1,679K).
- Denmark increased total costs in 2020 by 1.4 M€2017 (+2%) compared to 2019 actual costs. The main driver of the increase is staff costs, with costs being 5.4 M€2017 higher (+10%), due to costs associated with voluntary resignations. Moreover, cost of capital increased by 2.5 M€2017 (+63%).
- Exceptional costs decreased by 7.2 M€2017 (-354%), the reason being unclear since the NSA stated that such decrease is supposed to reflect cost reductions that have not yet been decided.
- NAVIAIR shows a perfect execution of its investment plans, with 2020 actual cost of investments being equal to the investment plans (21 M€2017).

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 AUC was lower than the planned DUC (by -1.4%, or -12.82DKK2017, or -1.72€2017). This results from the combination of higher than planned TSUs (+1.2%) and lower than planned en route costs in real terms (by -0.2%, or -2.6 MDKK2017, or -0.3 M€2017).

En route service units

The difference between actual and planned TSUs (+1.2%) falls within the $\pm 2\%$ dead band. Hence the resulting additional revenue is kept by the ANSPs (see items 10 to 14).

En route costs by entity

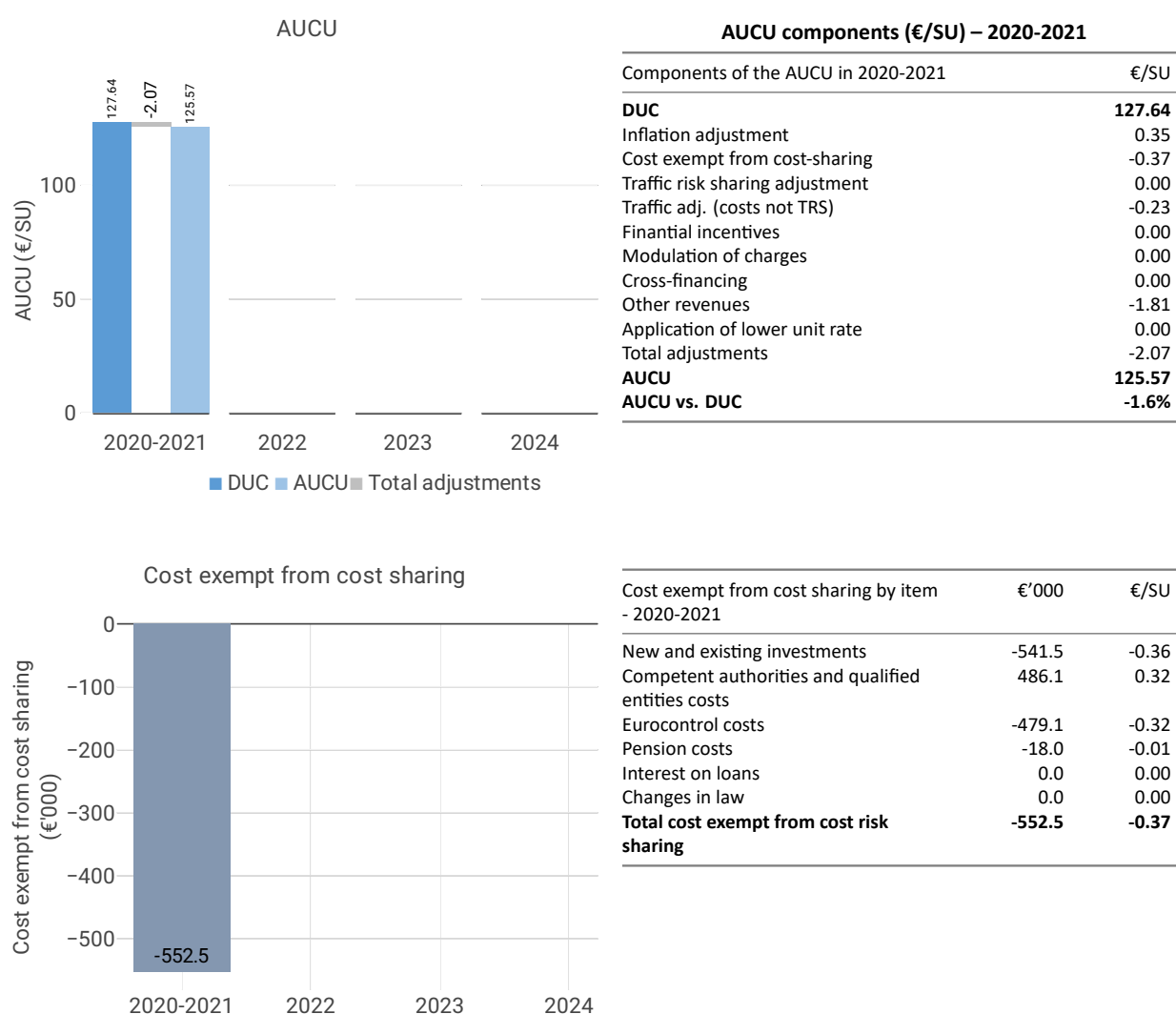
Actual real en route costs for 2020-2021 are -0.2% (-2.6 MDKK2017, or -0.3 M€2017) lower than planned. This result is driven by the MET service provider (-5.0%, or -0.5 M€2017) while the main ANSP, NAVIAIR costs are +0.1% (+0.1 M€2017) higher than planned.

En route costs for the main ANSP at charging zone level

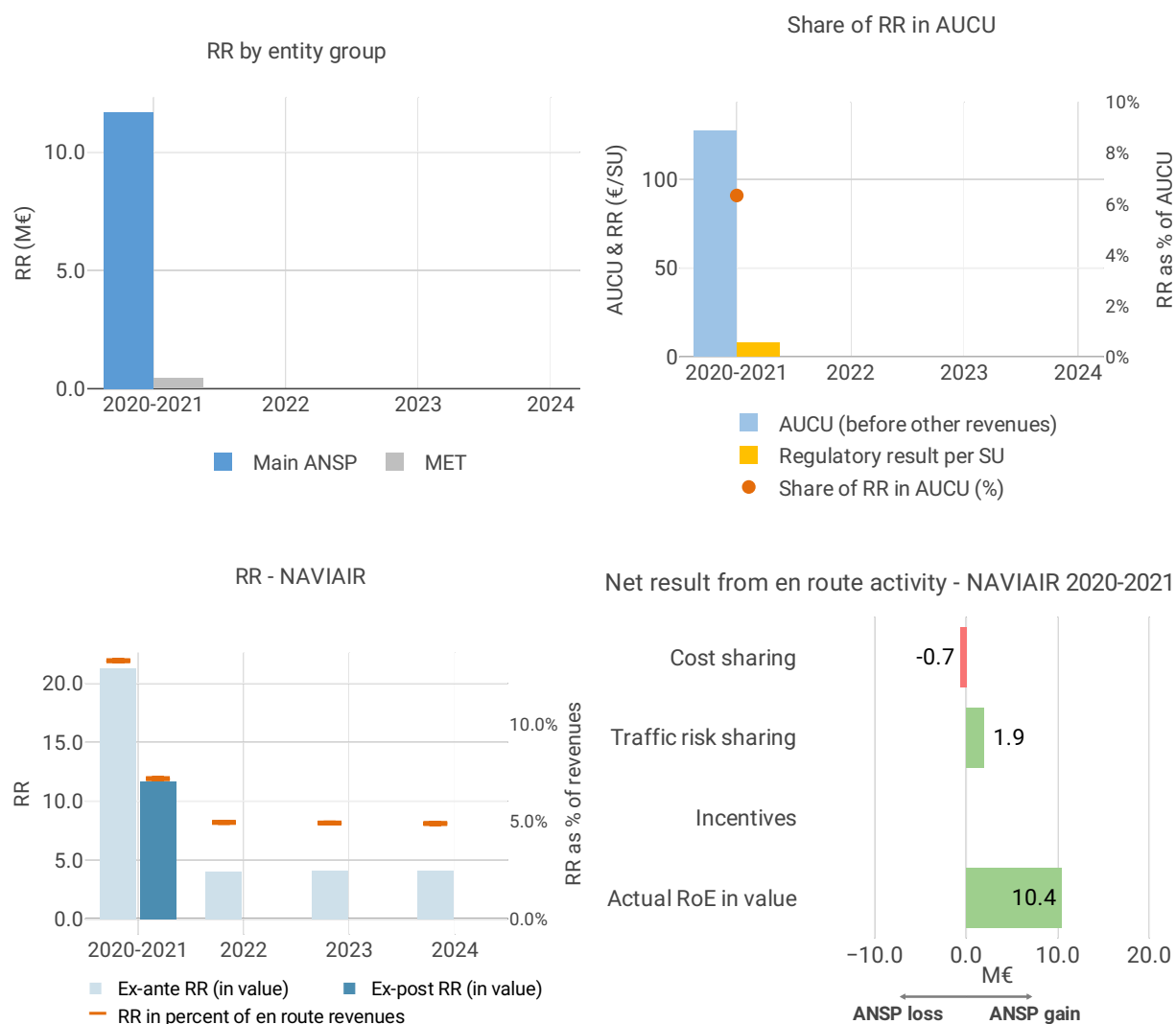
Slightly higher than planned en route costs in real terms for NAVIAIR in 2020-2021 (+0.1%, or +0.1 M€2017 higher) results from:

- higher staff costs (+0.9%), "mainly driven by costs for extra shifts primarily COVID-related absence;"
- lower other operating costs (-4.3%), "driven by low travel expenses, lower costs on administrative IT, and on fewer costs for training, e.g. COVID-related delays;"
- slightly lower depreciation (-0.1%);
- lower cost of capital (-4.9%), due to "fewer costs of debt related to lower renegotiated interest on subordinated loan;"
- lower deduction as exceptional costs (-11.4%, as amounts are negative it reflects an increase of total costs), due to no deduction in 2021 actuals;
- lower deduction for VFR exempted flights (-0.4%).

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



5.2.3 Regulatory result (RR)



Focus on regulatory result

NAVIAIR net gain on en route activity in the Denmark charging zone in the combined year 2020-2021

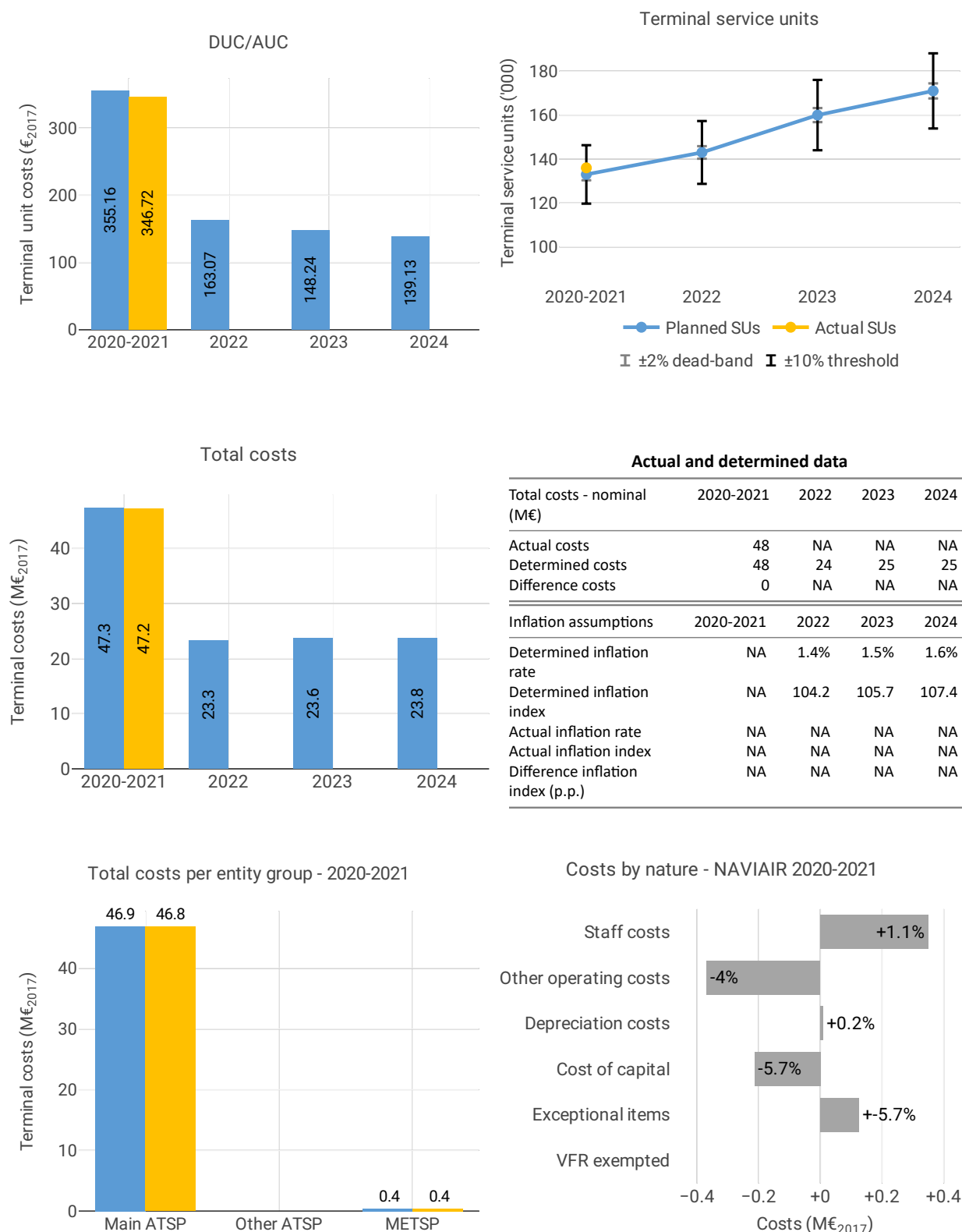
NAVIAIR's net gain amounts to +1.8 M€, as a combination of a loss of -0.1 M€ arising from the cost sharing mechanism and a gain of +1.9 M€ arising from the traffic risk sharing mechanism.

NAVIAIR 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 (+1.8 M€) and the actual RoE (+10.4 M€) amounts to +12.2 M€ (7.5% of the en route revenues). The resulting ex-post rate of return on equity is 5.9%.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)



Focus on unit cost

AUC vs. DUC

In the combined year 2020-2021, the terminal AUC was -2.4% (or -62.74DKK2017, or -8.44€2017) lower than the planned DUC. This results from the combination of higher than planned TNSUs (+2.2%) and lower than planned terminal costs in real terms (-0.3%, or -0.9 MDKK2017, or -0.1 M€2017).

Terminal service units

The difference between actual and planned TNSUs (+2.2%) falls outside the $\pm 2\%$ dead band, but does not exceed the $\pm 10\%$ threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ATSP and the airspace users, with the ATSP (NAVIAIR) retaining an amount of +7.0 MDKK2017.

Terminal costs by entity

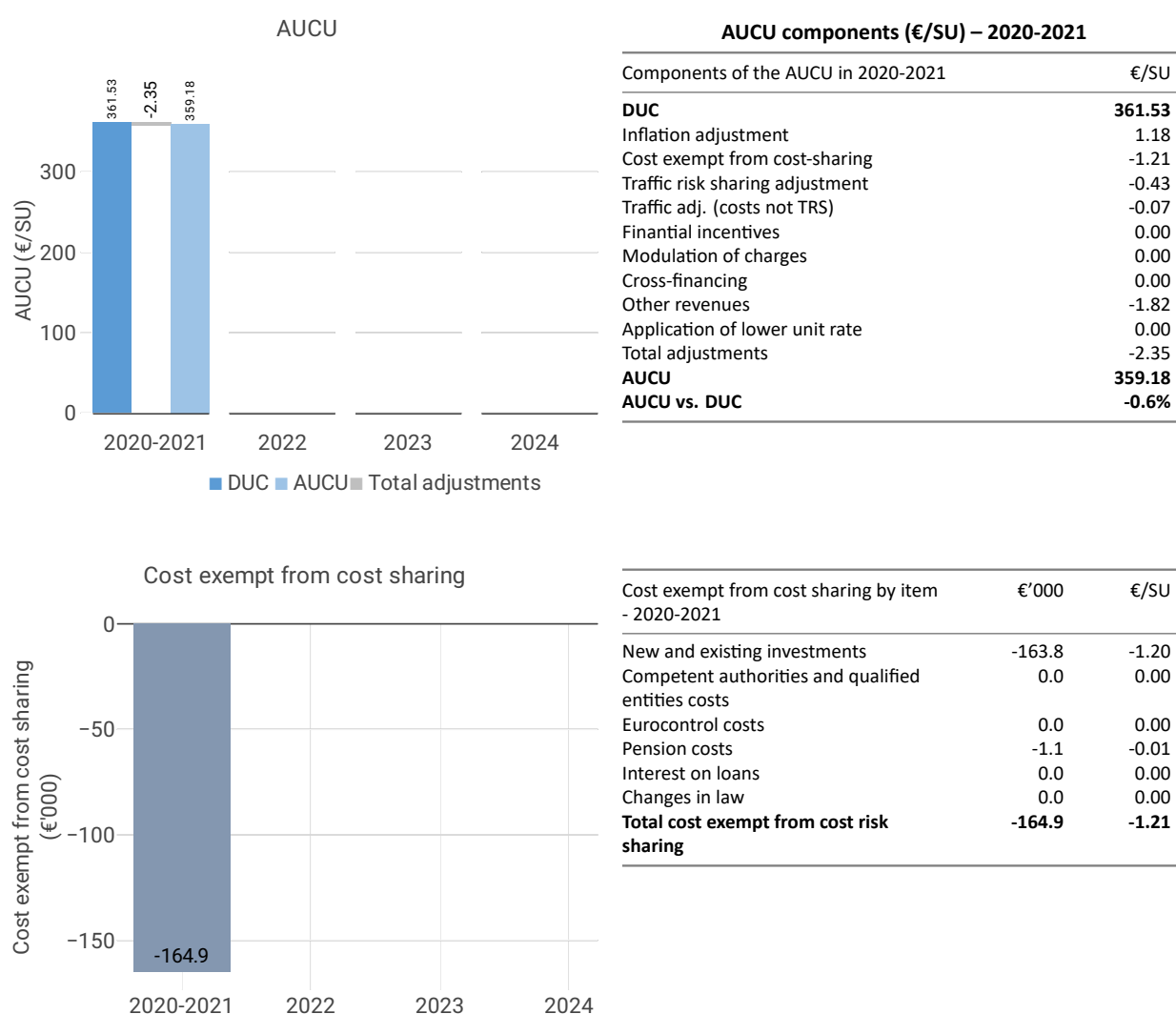
Actual real terminal costs are -0.3% (-0.9 MDKK2017, or -0.1 M€2017) lower than planned. This is driven by the main ANSP, NAVIAIR (-0.2%, or -0.1 M€2017) and the MET service provider (-4.6%, or -0.02 M€2017).

Terminal costs for the main ANSP at charging zone level

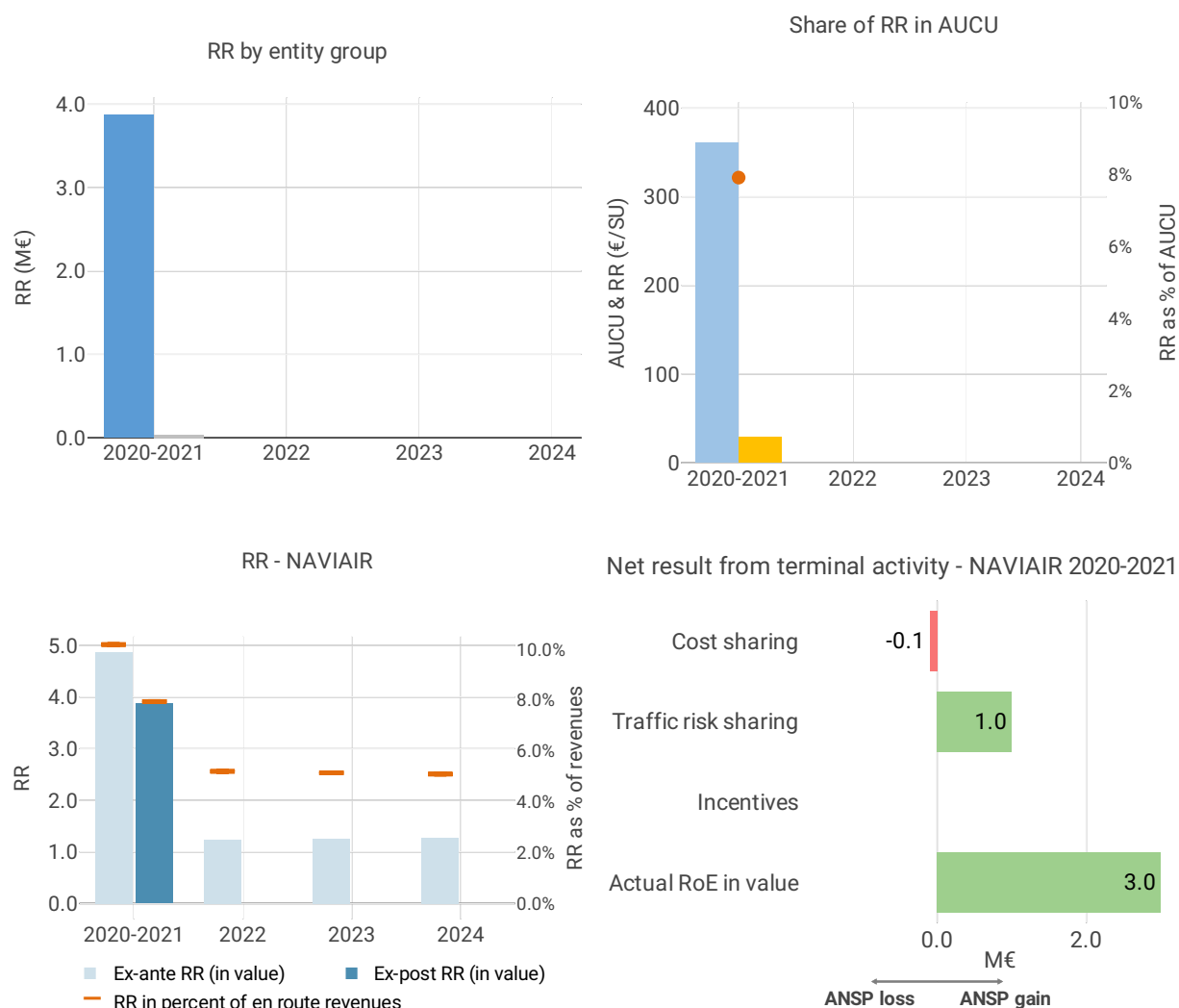
The lower than planned terminal costs in real terms for NAVIAIR (-0.2%, or -0.1 M€2017) result from:

- higher staff costs (+1.1%), "mainly driven by costs for extra shifts primarily driven by COVID-related absence;"
- lower other operating costs (-4.0%), "driven by low travel expenses, lower costs on administrative IT, and on fewer costs for training, e.g. COVID-related delays;"
- slightly higher depreciation (+0.2%);
- lower cost of capital (-5.7%), due to "fewer costs of debt related to lower renegotiated interest on subordinated loan;"
- lower deduction as exceptional costs (-5.7%, as amounts are negative it reflects an increase of total costs), due to no deduction in 2021 actuals.

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



5.3.3 Regulatory result (RR)



Focus on regulatory result

NAVIAIR net gain on terminal activity in the Denmark charging zone in the combined year 2020-2021

NAVIAIR reported a net gain of +1.1 M€, as a combination of a gain of +0.1 M€ arising from the cost sharing mechanism and a loss of -1.0 M€ arising from the traffic risk sharing mechanism.

NAVIAIR 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 (+1.1 M€) and the actual RoE (+3.0 M€) amounts to 4.0 M€ (8.3% of the terminal revenues). The resulting ex-post rate of return on equity is 6.8%.