PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Norway - 2022

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Performance Review Body of the Single European Sky | Rue de la Fusée 96, Office 50.659, 1130 Brussels
Office Telephone: +32 (0)2 234 7824 | cathy.mannion@prb.eusinglesky.eu | prb-office@prb.eusinglesky.eu | eu-single-sky.transport.ec.europa.eu

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following ESA Decision 069/22/COL of 6 April 2022

List of ACCs 3
Bodo ACC
Oslo ACC
Stavanger ACC

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

Exchange rate (1 EUR=)
2017: 9.32776 NOK
2022: 10.0962 NOK

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

Share en route / terminal costs 2022 73% / 27%

En route charging zone(s)
Norway

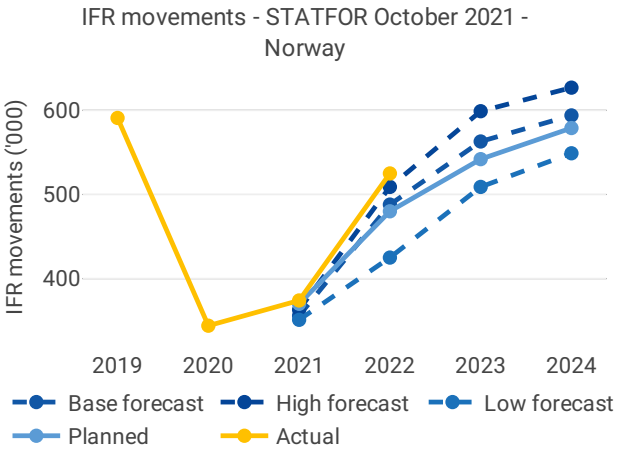
Terminal charging zone(s)
Norway

Main ANSP
- Avinor Flysikring AS (Avinor ANS)

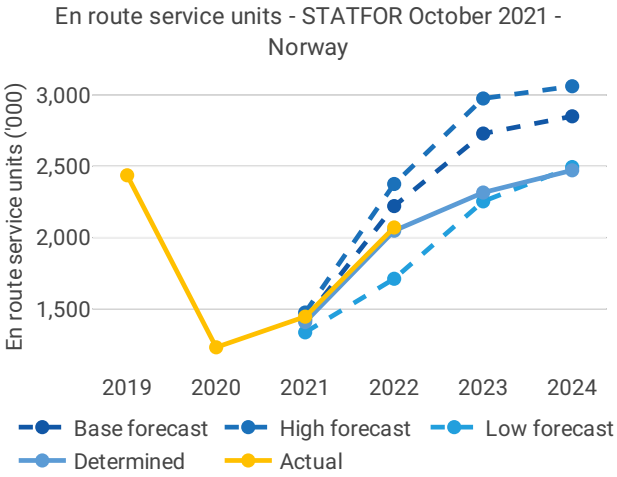
Other ANSPs
- Avinor AS
- Saerco (Kjevik ANSP)

MET Providers
- The Norwegian Meteorological Institute (MET)

1.2 Traffic (En route traffic zone)

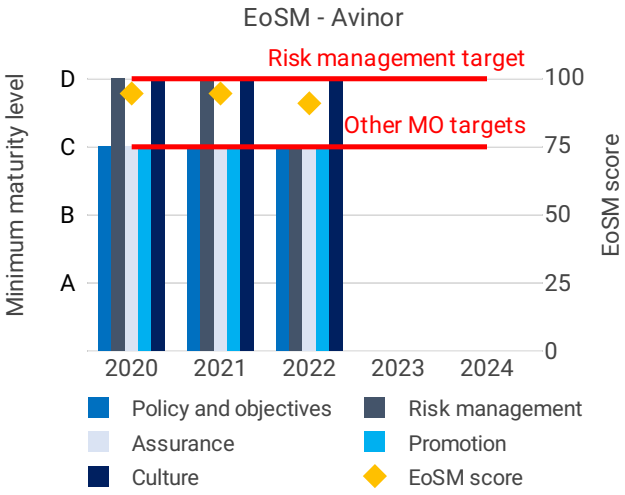


- Norway recorded 525K actual IFR movements in 2022, +40% compared to 2021 (374K).
- Actual 2022 IFR movements were +9.4% above the plan (480K).
- Actual 2022 IFR movements represent 89% of the actual 2019 level (591K).



- Norway recorded 2,071K actual en route service units in 2022, +43% compared to 2021 (1,445K).
- Actual 2022 service units were +1.1% above the plan (2,048K).
- Actual 2022 service units represent 85% of the actual 2019 level (2,437K).

1.3 Safety (Main ANSP)

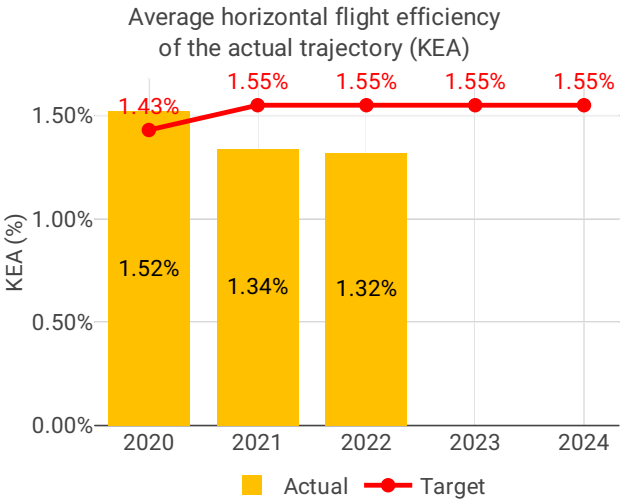


• Avinor ANS achieved RP3 EoSM targets for four management objectives but failed to maintain the previously achieved target level D for safety risk management. Avinor ANS should ensure that adequate resources are in place for conducting the annual reviews in order to achieve level D again.

• Norway recorded a decrease in the rate of runway incursions but an increase of the rate of separation minima infringements. Avinor ANS should review the reasons for this increase and take appropriate mitigating actions, as necessary.

• Avinor ANS could improve its safety management by implementing automated safety data recording systems.

1.4 Environment (Member State)



• Norway achieved a KEA performance of 1.32% compared to its target of 1.55% and contributed positively towards achieving the Union-wide target. KEA improved compared to 2021.

• Both KEP and SCR deteriorated in comparison with 2021, and had the same value (2.26%), meaning airlines planned the most efficient routes available.

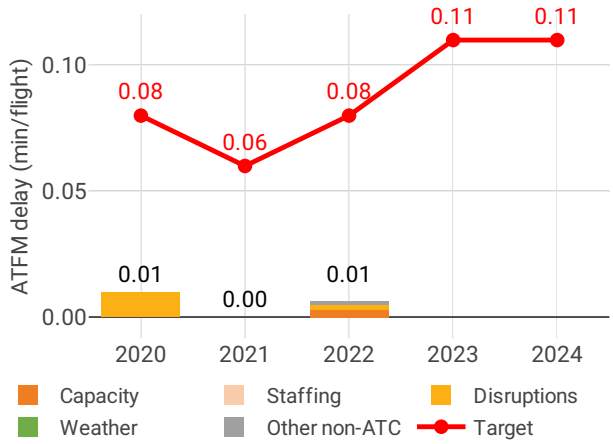
• The share of CDO flights decreased by 6.44% compared to 2021.

• During 2022, additional time in terminal airspace increased from 0.53 to 0.68 min/flight, while additional taxi out time increased from 2.87 to 3.26 min/flight.

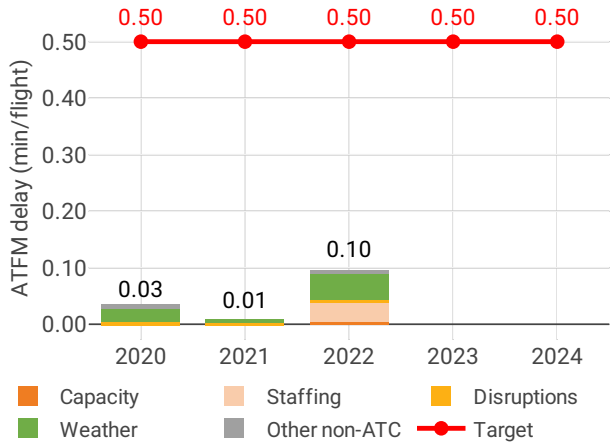
• Airport data for Bergen airport was not reported for 2022 despite being subject to monitoring as per the Regulation.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Norway registered 0.01 minutes of average en route ATFM delay per flight during 2022, thus achieving the local target value of 0.08.

• The average number of IFR movements was 11% below 2019 levels in Norway in 2022.

• An increase in the number of ATCOs in OPS is expected by the end of RP3 in Bodo ACC, with a more significant increase in Oslo and Stavanger ACCs. The actual value in Stavanger ACC was in line with the 2022 plan; while in Bodo and Oslo ACCs the actual values remain below the 2022 plan.

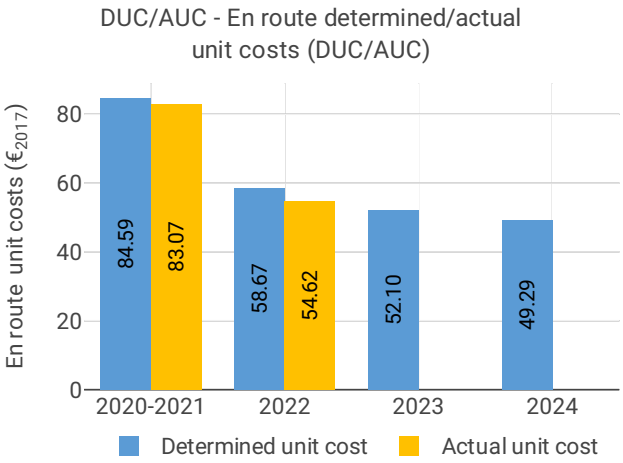
• Delays were highest in January, November and December, mostly due to ATC Capacity issues and ATC Disruptions.

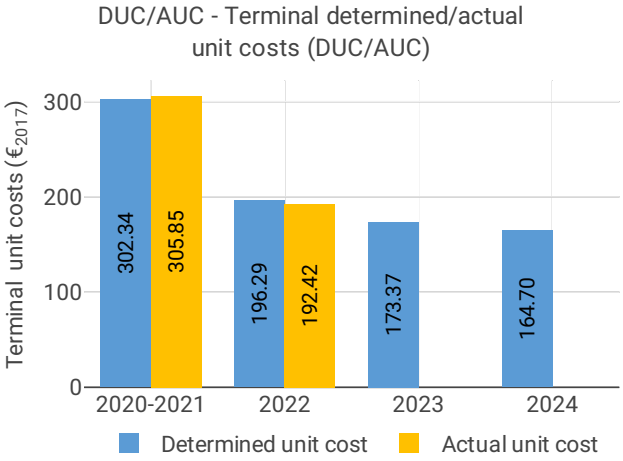
• The share of delayed flights with delays longer than 15 minutes in Norway decreased by 10.86 p.p. compared to 2021 and was lower than 2019 values.

• The yearly total of sector opening hours in Oslo ACC was 15,689 in 2022, showing a 9.3% increase compared to 2021. Sector opening hours are 10.4% below 2019 levels.

• Oslo ACC registered 13.36 IFR movements per one sector opening hour in 2022, being 4.7% below 2019 levels.

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





• The en route 2022 actual unit cost of Norway was 54.57 €2017, 7.0% lower than the determined unit cost (58.67 €2017). The terminal 2022 actual unit cost was 192.42 €2017, 2.0% lower than the determined unit cost (196.29 €2017).

• The en route 2022 actual service units (2,071K) were slightly higher (+1.1%) than the determined service units (2,048K).

• The en route 2022 actual total costs were 7.1 M€2017 (-5.9%) lower than determined. The decrease was mainly driven by lower staff costs (-8.5 M€2017, or -11%) largely due to the restructuring of the organisation.

• Avinor ANS spent 28.1 M€2017 in 2022 related to costs of investments, 1.5% lower than determined (28.6 M€2017). The NSA explained that costs related to leases were by mistake double-counted in the determined costs, and some projects being delayed compared to planned.

• The en route actual unit cost incurred by users in 2022 was 55.12€, while the terminal actual unit cost incurred by users was 181.06€.

2 SAFETY - NORWAY

2.1 PRB monitoring

• Avinor ANS achieved RP3 EoSM targets for four management objectives but failed to maintain the previously achieved target level D for safety risk management. Avinor ANS should ensure that adequate resources are in place for conducting the annual reviews in order to achieve level D again.

• Norway recorded a decrease in the rate of runway incursions but an increase of the rate of separation minima infringements. Avinor ANS should review the reasons for this increase and take appropriate mitigating actions, as necessary.

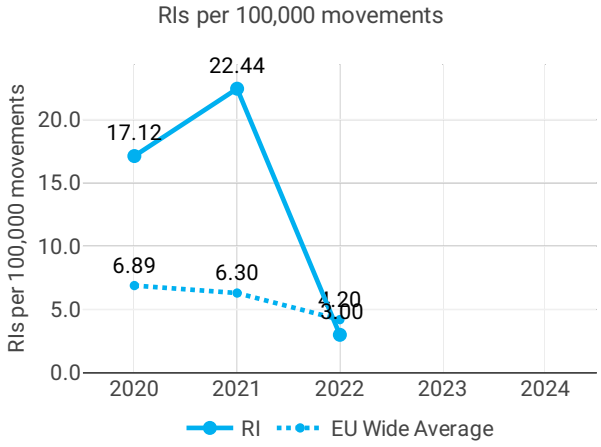
• Avinor ANS could improve its safety management by implementing automated safety data recording systems.

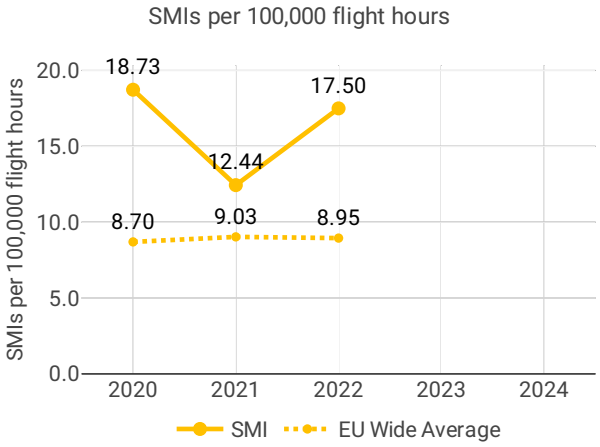
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

Focus on EoSM

Four EoSM components of the ANSP meet or exceed the RP3 target level. Compared with 2021, in 2022 degradation was observed for four questions, including one question for “Safety Risk Management” reducing the maturity of the component from level D to the level C, and consequently not achieving the target for this component. This question is to be improved 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 - NORWAY

3.1 PRB monitoring

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• Both KEP and SCR deteriorated in comparison with 2021, and had the same value (2.26%), meaning airlines planned the most efficient routes available.

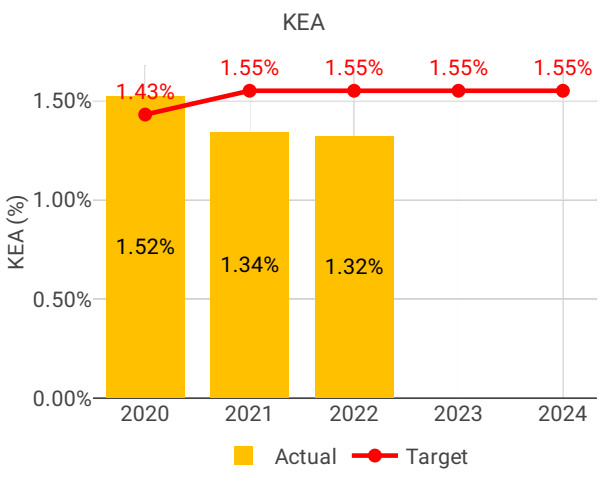
• The share of CDO flights decreased by 6.44% compared to 2021.

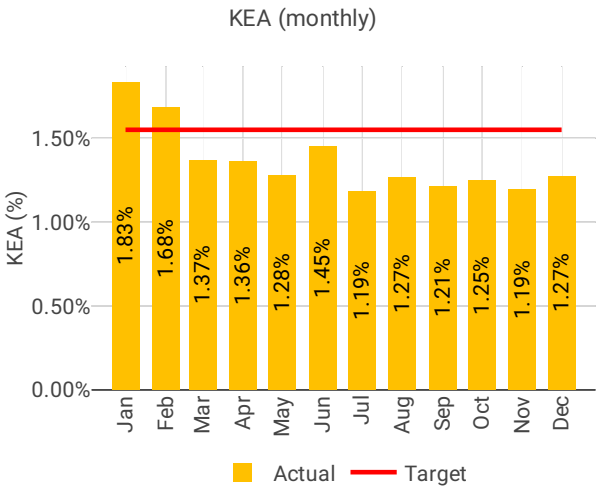
• During 2022, additional time in terminal airspace increased from 0.53 to 0.68 min/flight, while additional taxi out time increased from 2.87 to 3.26 min/flight.

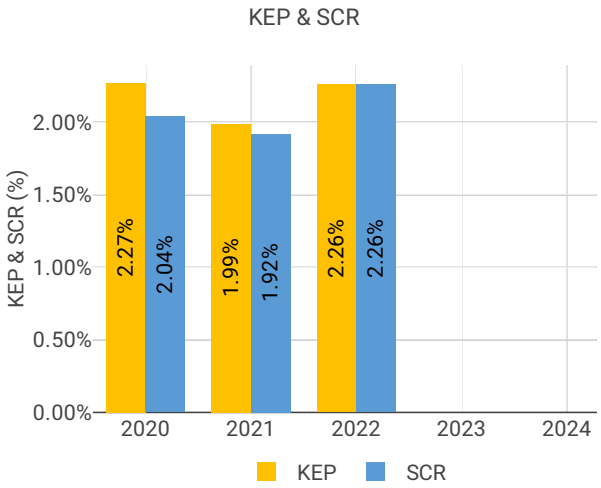
• Airport data for Bergen airport was not reported for 2022 despite being subject to monitoring as per the Regulation.

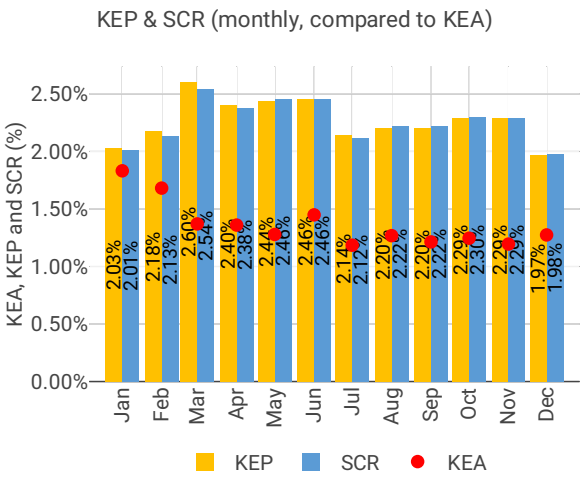
3.2 En route performance

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)



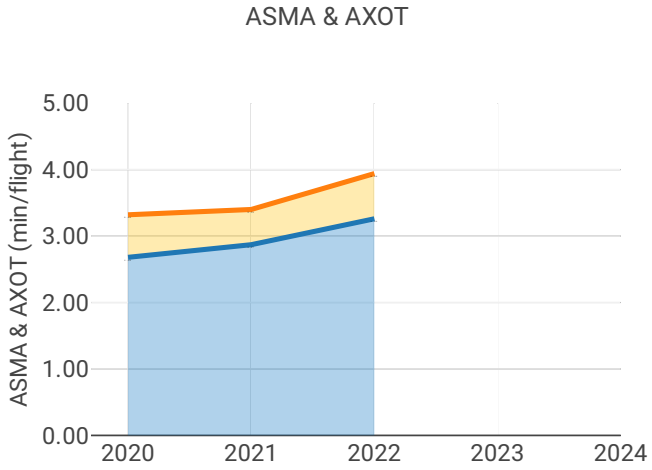


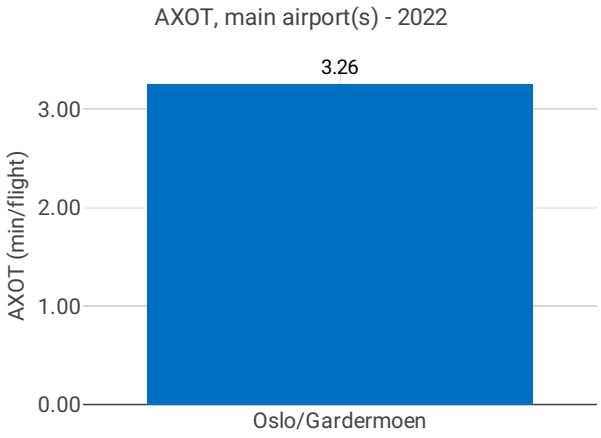


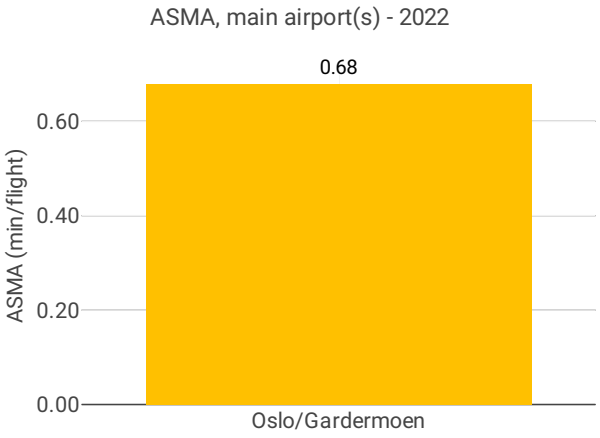


3.3 Terminal performance

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







Focus on ASMA & AXOT

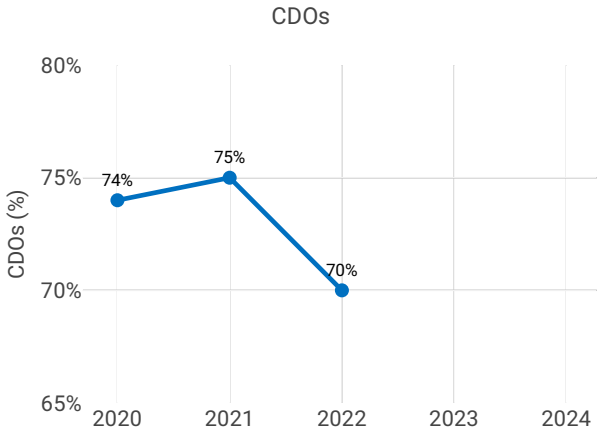
AXOT

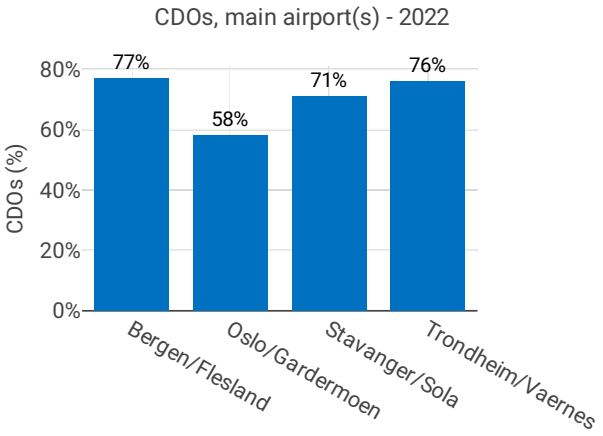
The additional taxi-out times at Oslo have slightly increased (ENGM; 2019: 3.92 min/dep.; 2020: 2.68 min/dep.; 2021: 2.87 min/dep.; 2022: 3.26 min/dep.)
The annual average is influenced by the performance during the winter months due to de-icing.
According to the Norwegian monitoring report, the reason for the missing data for the calculation of additional taxi-out time at Bergen Airport is because they have not implemented A-CDM.

ASMA

Additional ASMA times at Oslo (ENGM; 2019: 1.03 min/arr.; 2020: 0.64 min/arr.; 2021: 0.53 min/arr.; 2022: 0.68 min/arr.) increased slightly in 2022.
The Norwegian monitoring report mentions that surveillance data from the ENBR area should be good enough for the calculation additional time in TMA to be calculated and it is unknown the reason why this has not been calculated by EUROCONTROL. As explained in previous monitoring exercises, there are several indicators that require the establishment of the Airport Operator Data Flow between the airport and EUROCONTROL. This data is then merged with surveillance data for the calculation of the indicator.

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





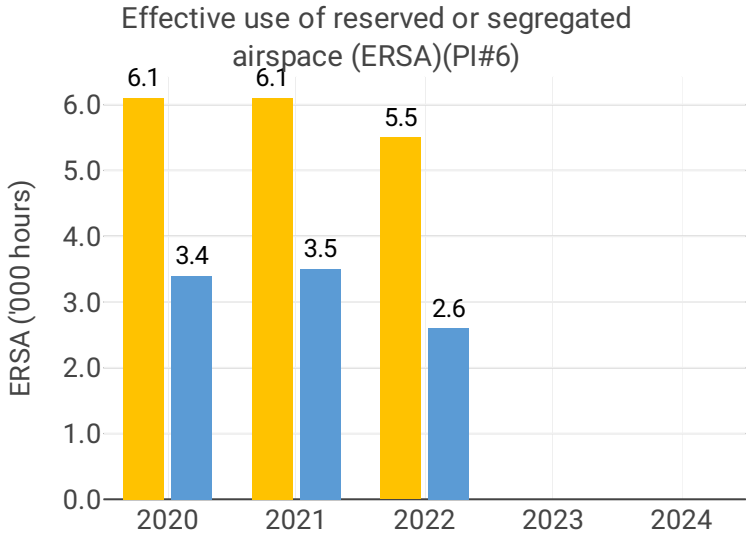
Focus CDOs

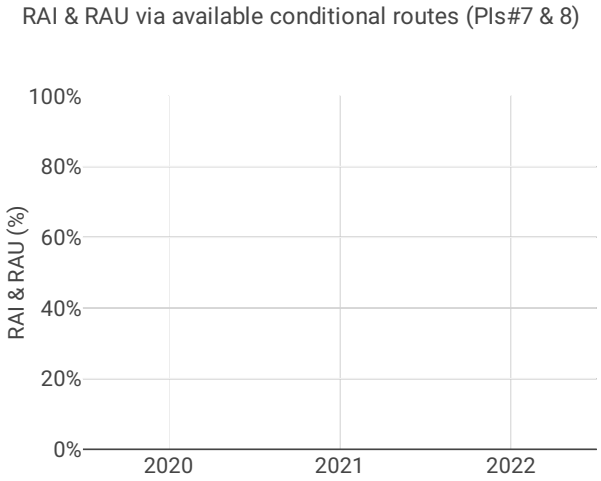
Although the values have reduced for all airports with respect to 2021, all airports still have very high shares of CDO flights with all airports having more than double the overall RP3 value in 2022 (29.0%).
In the second half of the year, the monthly values for Oslo/Gardermoen have continuously decreased from 64.5% in July to 53.6% in December.

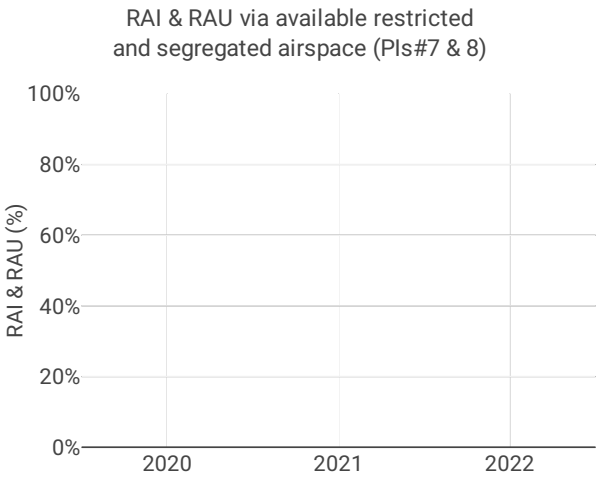
Airport level

	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
Bergen/Flesland	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80%	80%	77%	NA	NA
Oslo/Gardermoen	2.68	2.87	3.26	NA	NA	0.64	0.53	0.68	NA	NA	62%	64%	58%	NA	NA
Stavanger/Sola	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76%	74%	71%	NA	NA
Trondheim/Vaernes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77%	79%	76%	NA	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

LARA has been implemented and Civil/Military Airspace Committee maintain a continued focus on the effectiveness of the booking procedures.
The AMC procedure has been revised establishing new and larger areas in southern Norway with a design that is optimized to cater to civilian traffic flows. The civil/military airspace continually work on optimizing the airspace structure to minimize the impact of military air operations on civilian air traffic. LARA has been deployed to both civil and military users and further integration into the ATM system is ongoing.

Military - related measures implemented or planned to improve capacity

The AMC procedure has been revised establishing new and larger areas in southern Norway with a design that is optimized to cater to civilian traffic flows. The Civil/military airspace committee focus on the improvement of the booking procedures and the intention to improve the ratio between booked versus used reserved airspace.
The civil/military airspace continually work on optimizing the airspace structure to minimize the impact of military air operations on civilian air traffic. LARA has been deployed to both civil and military users and further integration into the ATM system is ongoing.

Initiatives implemented or planned to improve PI#6

No data available

Initiatives implemented or planned to improve PI#7

No data available

Initiatives implemented or planned to improve PI#8

No data available

4 CAPACITY - NORWAY

4.1 PRB monitoring

• Norway registered 0.01 minutes of average en route ATFM delay per flight during 2022, thus achieving the local target value of 0.08.

• The average number of IFR movements was 11% below 2019 levels in Norway in 2022.

• An increase in the number of ATCOs in OPS is expected by the end of RP3 in Bodo ACC, with a more significant increase in Oslo and Stavanger ACCs. The actual value in Stavanger ACC was in line with the 2022 plan; while in Bodo and Oslo ACCs the actual values remain below the 2022 plan.

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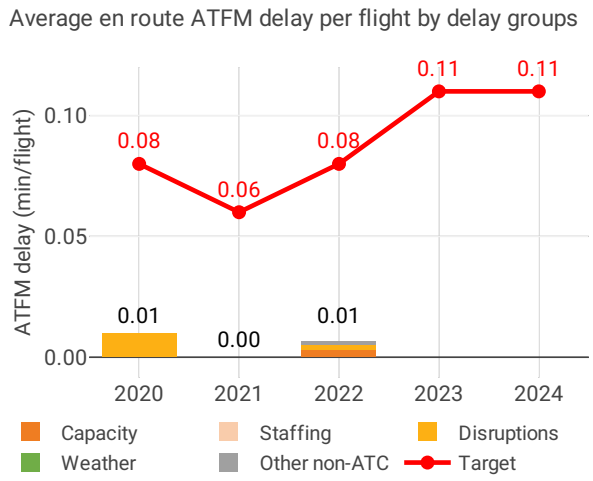
• The share of delayed flights with delays longer than 15 minutes in Norway decreased by 10.86 p.p. compared to 2021 and was lower than 2019 values.

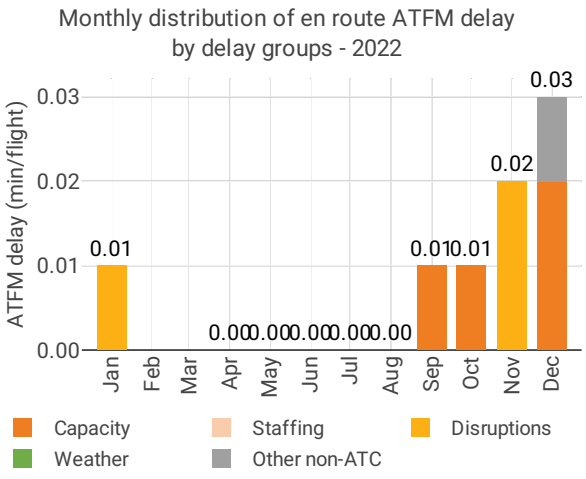
• The yearly total of sector opening hours in Oslo ACC was 15,689 in 2022, showing a 9.3% increase compared to 2021. Sector opening hours are 10.4% below 2019 levels.

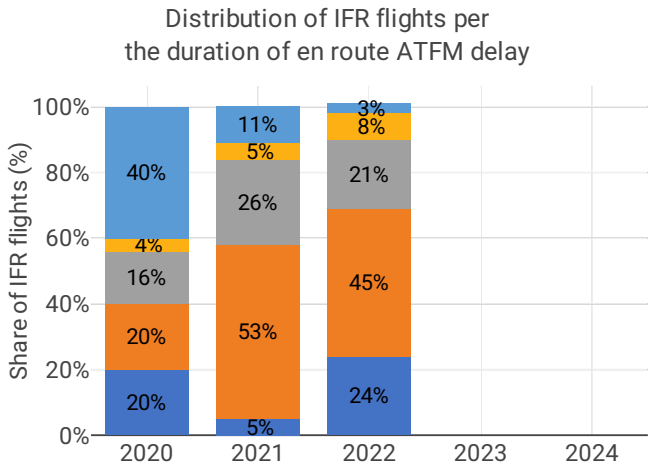
• Oslo ACC registered 13.36 IFR movements per one sector opening hour in 2022, being 4.7% below 2019 levels.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Norway experienced an increase in traffic from 376k flights in 2021, with zero ATFM delay, to 529k flights in 2022 - with marginal delay (3k minutes).
Traffic levels were still below the 595k flights in 2019.

NSA's assessment of capacity performance

No specific capacity issues in 2022, actual traffic in (service units) was 1,1% above the level set in the Performance Plan.
The actual en-route ATFM delay per flight of 0,01 min./flt. was significant below the national target set to 0,08 min./flt. Actual performance is so far in RP3 much better than set in the revised Performance Plan.

Monitoring process for capacity performance

No data available

Capacity planning

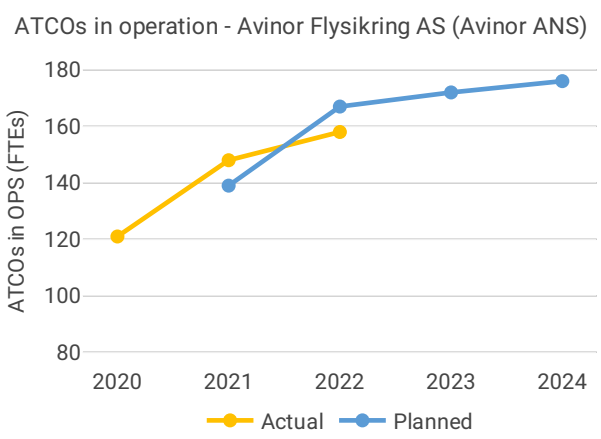
Norway has been developing ATC capacity over years, and is in position to provide more capacity than the national reference values.The cost optimum capacity for en route delay per flight for Avinor ANS is between 0,18 min/flt. and 0,11 min/flt., but for the airspace users this would be unacceptable.
This view is based on the fact that a large portion of the overall traffic is transition flights with little leeway in terms of delays. Based on consultation meetings with the airspace users and Avinor ANS during the en route delay is set to between 0,08 min./flt and 0,11 min./flt. in RP3.
Avinor ANS has over the last years been increasing capacity, in order to being able to shift to new technology without major operational consequences for the airspace users.

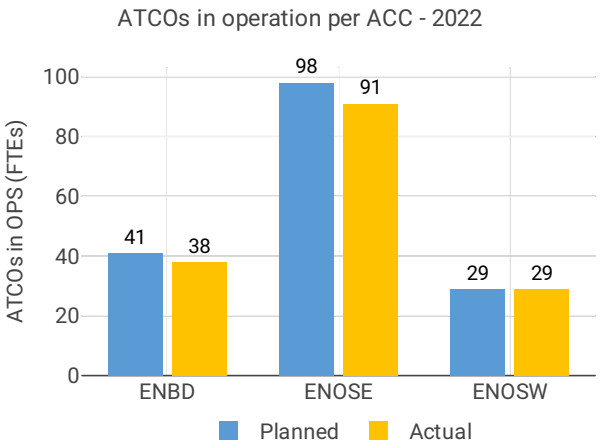
Application of Corrective Measures for Capacity (if applicable)

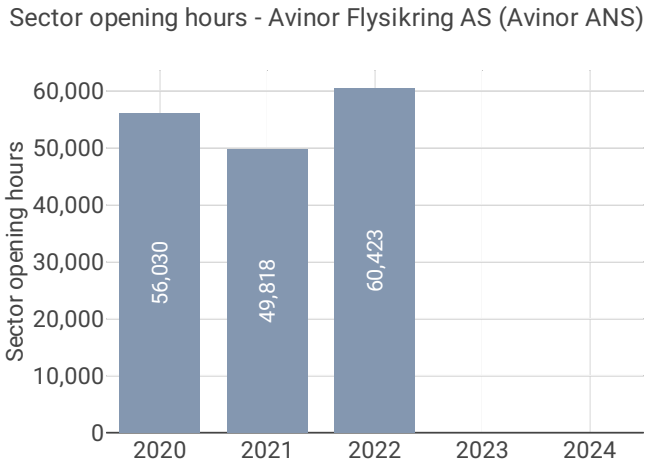
No data available

Additional Information Related to Russia's War of Aggression Against Ukraine Initial drop in overflights estimated to around 20%. Some of the traffic have recovered since the initial phase. In general en route capacity has not been affected.

4.2.2 Other indicators





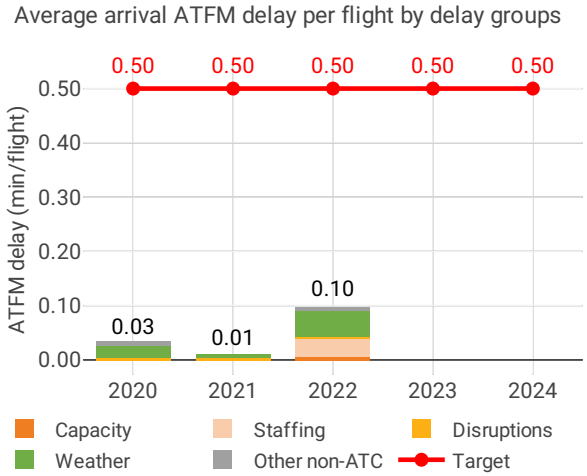


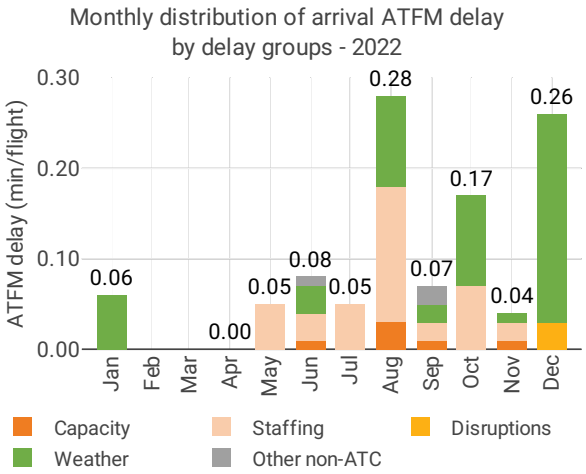
Focus on ATCOs in operations

N/A

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





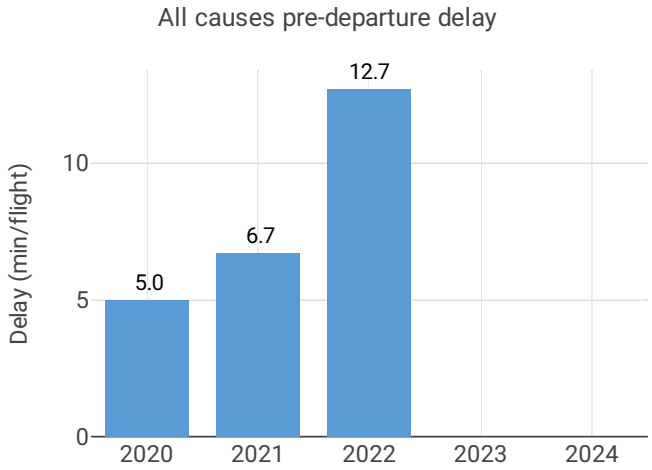
Focus on arrival ATFM delay

Norway has identified four airports as subject to RP2 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only two of these airports (Oslo (EGNM) and Bergen (ENBR)) must be monitored for pre-departure delays. Oslo (A-CDM implemented) is the only Norwegian airport that has finished the full implementation of the Airport Operator Data Flow required for the monitoring of these pre-departure delays.
Regarding the APDF implementation and the calculation of the pre-departure delays at Bergen, Norway's monitoring mentions that Avinor's IT-department is set on the case, and expected to be solved for calculating the 2023 figures.
Traffic at the ensemble of these four Norwegian airports in 2022 was still 10% lower than in 2019.
Average arrival ATFM delays in 2022 was 0.10 min/arr, compared to 0.01 min/arr in 2021.
ATFM slot adherence has improved (2022: 99.3%; 2021: 98.6%).

Arrival ATFM delays in 2021 decreased and became marginal at all Norwegian airports. However in 2022 Oslo showed a significant increase in arrival delays (ENGM; 2019: 0.31 min/arr; 2020: 0.05 min/arr; 2021: 0.01 min/arr; 2021: 0.17 min/arr) while the rest of airports registered minimum delays.
51% of the arrival ATFM delays in Norway were attributed to Weather, followed by ATC Staffing issues (39%) at Oslo.3. Arrival ATFM Delay – National TargetThe national target on arrival ATFM delay in 2022 was met.

All Norwegian airports showed adherence above 98% and the national average was 99.3%. With regard to the 0.7% of flights that did not adhere, 0.3% was early and 0.4% was late.

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
Bergen/Flesland	0.01	0.01	0.02	NA	98.9%	98.4%	98.7%	NA%
Oslo/Gardermoen	0.05	0.01	0.17	NA	98.4%	99.4%	99.4%	NA%
Stavanger/Sola	0.03	0.01	0.03	NA	97.4%	93.2%	98.6%	NA%
Trondheim/Vaernes	0.03	NA	0.00	NA	98.9%	98.0%	99.3%	NA%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Bergen/Flesland	NA	NA	NA	NA	NA	NA	NA	NA
Oslo/Gardermoen	0.05	0.06	0.10	NA	5.0	6.7	12.7	NA
Stavanger/Sola	NA	NA	NA	NA	NA	NA	NA	NA
Trondheim/Vaernes	NA	NA	NA	NA	NA	NA	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

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 Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.
The performance at Oslo has slightly deteriorated (ENGM; 2019: 0.14 min/dep.; 2020: 0.05 min/dep.; 2021: 0.06 min/dep.; 2022: 0.10 min/dep.)
According to the Norwegian monitoring report: *Pre-departure delay in 2022 (ENGM) is increasing compared to the two previous years during the pandemic, but still below the level before the pandemic (2017-2019).*

ATC pre-departure delay

The calculation of the All causes 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 Oslo but not implemented at Bergen. Therefore the monitoring of this indicator in Norway is limited to Oslo.
The total (all causes) delay in the actual off block time at Oslo increased again in 2022 (ENGM: 2020: 5.01 min/dep.; 2021: 6.74 min/dep.; 2022: 12.74 min/dep.) but still resulting in the third lowest value among the RP3 monitored airports. The highest delays per flight were observed in December, averaging more than 20 min/dep.

All causes pre-departure delay

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

5 COST-EFFIENCY - NORWAY

5.1 PRB monitoring

• The en route 2022 actual unit cost of Norway was 54.57 €2017, 7.0% lower than the determined unit cost (58.67 €2017). The terminal 2022 actual unit cost was 192.42 €2017, 2.0% lower than the determined unit cost (196.29 €2017).

• The en route 2022 actual service units (2,071K) were slightly higher (+1.1%) than the determined service units (2,048K).

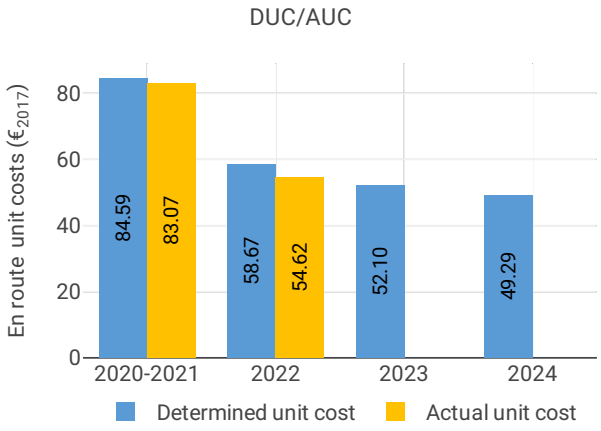
• The en route 2022 actual total costs were 7.1 M€2017 (-5.9%) lower than determined. The decrease was mainly driven by lower staff costs (-8.5 M€2017, or -11%) largely due to the restructuring of the organisation.

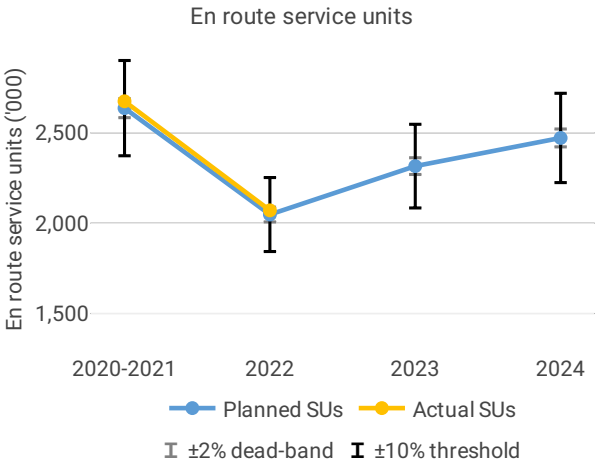
• Avinor ANS spent 28.1 M€2017 in 2022 related to costs of investments, 1.5% lower than determined (28.6 M€2017). The NSA explained that costs related to leases were by mistake double-counted in the determined costs, and some projects being delayed compared to planned.

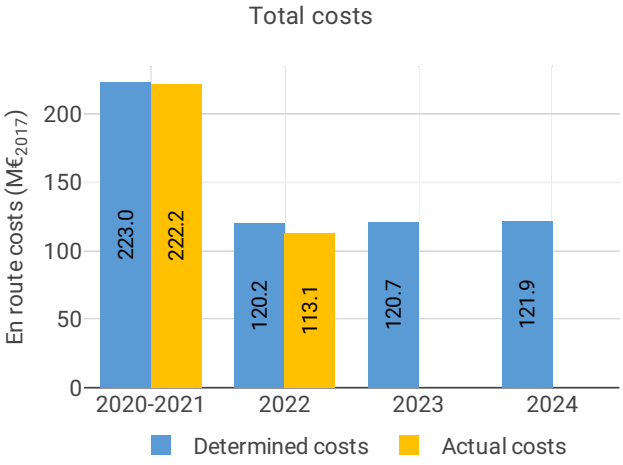
• The en route actual unit cost incurred by users in 2022 was 55.12€, while the terminal actual unit cost incurred by users was 181.06€.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

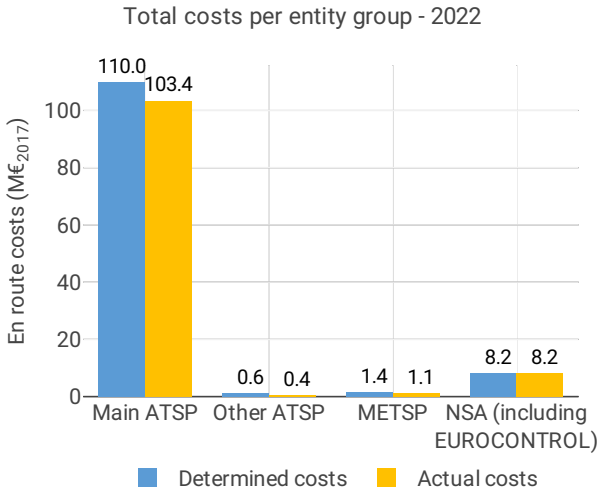


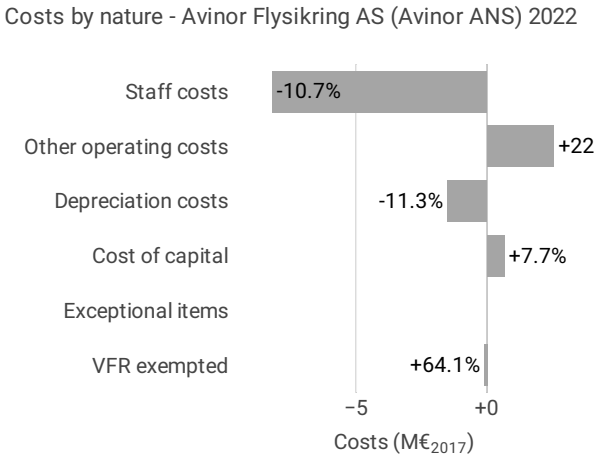




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	237	128	NA	NA
Determined costs	236	130	133	136
Difference costs	1	-2	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	2.0%	2.0%	2.0%
Determined inflation index	NA	111.2	113.4	115.6
Actual inflation rate	NA	6.2%	NA	NA
Actual inflation index	NA	117.7	NA	NA
Difference inflation index (p.p.)	NA	+6.5	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the en route AUC was -7.0% (or -38.27 NOK2017, -4.1 €2017) lower than the planned DUC, resulting from significantly lower than planned en route costs in real terms (-5.9%, or -66.6 MNOK2017, -7.1 M€2017) and higher than planned TSUs (+1.1%). It should be noted that actual inflation index in 2022 was +6.5 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+1.1%) falls within the ±2% dead band. Hence the resulting additional en route revenue is kept by the ANSPs .

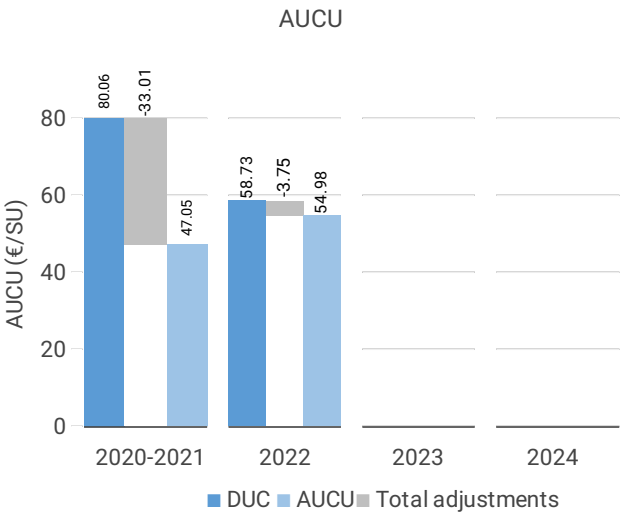
En route costs by entity

Actual real en route costs are -5.9% (-7.1 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Avinor (-5.9%, or -6.5 M€2017), the MET service provider (-23.7%, or -0.3 M€2017), the other ANSP (KJE, -31.9%, or -0.2 M€2017) and the NSA/EUROCONTROL (-1.0%, or -0.1 M€2017).

En route costs for the main ANSP at charging zone level

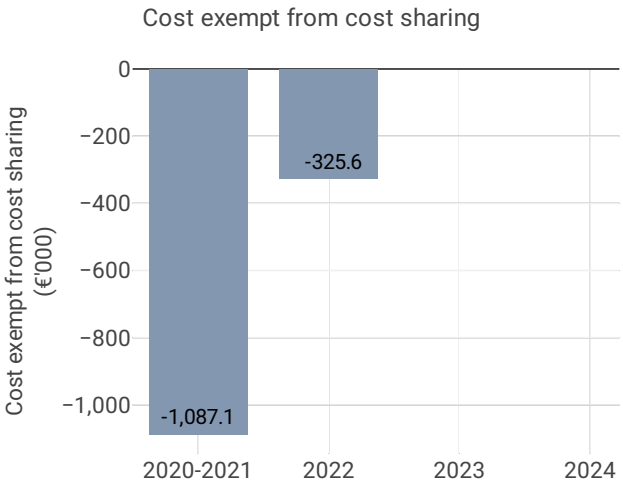
Significantly lower than planned en route costs in real terms for Avinor in 2022 (-5.9%, or -6.5 M€2017) result from the combination of:
- Significantly lower staff costs (-10.7%), mainly due to *"the restructuring of the organization. The support staff costs are reduced as these recourses (HR, finance, legal, communication etc.) have been moved to the mother company Avinor AS. As a consequence, staff support costs are instead accounted as an inter-company purchase/other operating costs."*
- Significantly higher other operating costs (+22.4%), due to the organizational restructuring (see above), higher energy prices and travel expenses after the end of Covid-19;
- Significantly lower depreciation (-11.3%), reported to be due to the overestimation of planned depreciation in the RP3 performance plan, which will be reimbursed to airspace users through the mechanism of costs exempted from cost sharing in 2024;
- Significantly higher cost of capital (+7.7%), *"due to a higher share of the investments that is allocated to the en-route cost base than estimated in the determined costs"*; and,
- Significantly higher deduction for VFR exempted flights (+64.2%).

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



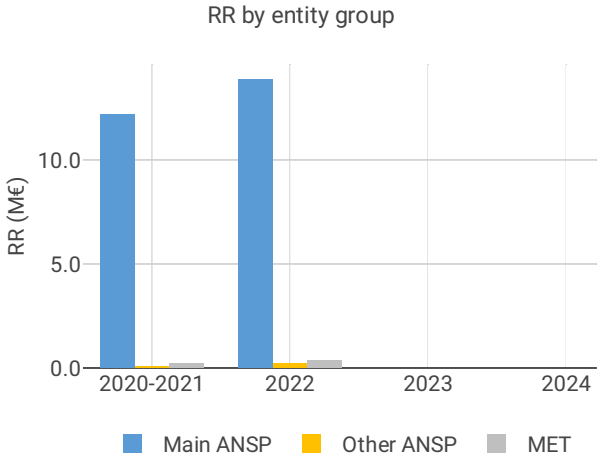
AUCU components (€/SU) – 2022

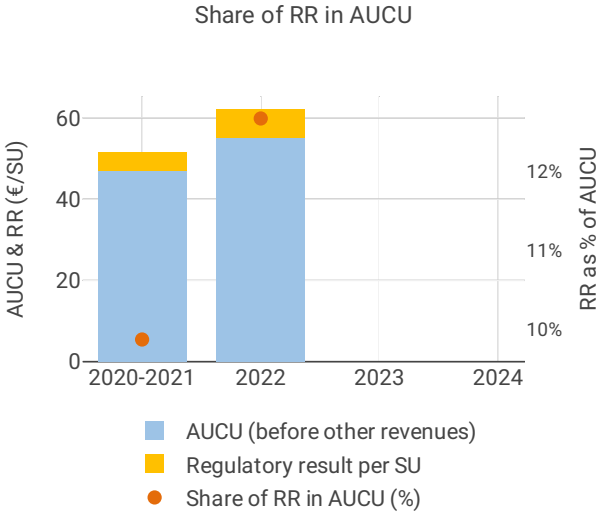
Components of the AUCU in 2022	€/SU
DUC	**58.73**
Inflation adjustment	2.61
Cost exempt from cost-sharing	-0.16
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	-0.05
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.09
Application of lower unit rate	-6.06
Total adjustments	-3.75
AUCU	**54.98**
AUCU vs. DUC	**-6.4%**

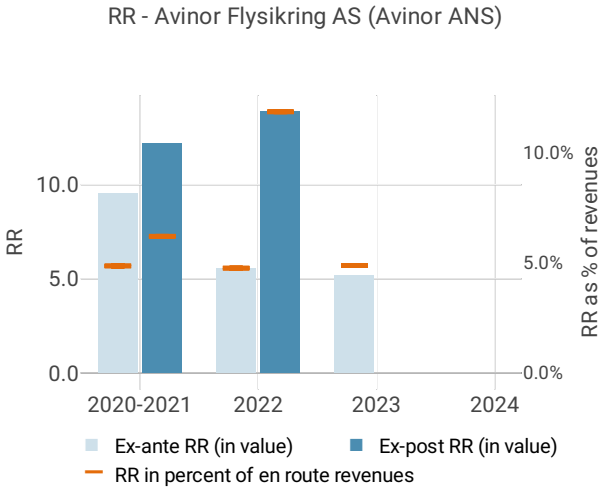


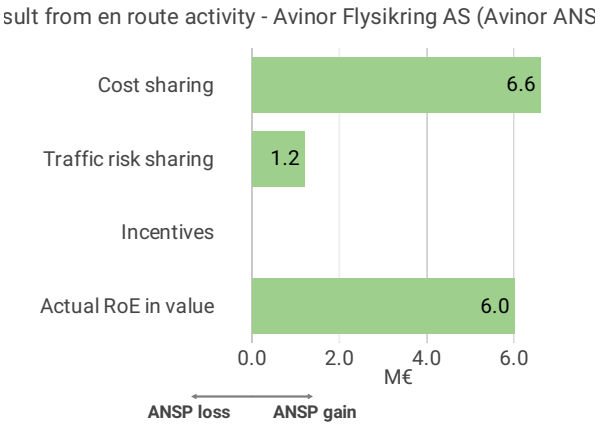
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-343.3	-0.17
Competent authorities and qualified entities costs	-108.9	-0.05
Eurocontrol costs	126.5	0.06
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-325.6**	**-0.16**

5.2.3 Regulatory result (RR)









Focus on regulatory result

Avinor net gain on activity in the Norway en route charging zone in the year 2022

Avinor reported a net gain of +83.2 MNOK, as a combination of a gain of +70.7 MNOK arising from the cost sharing mechanism and a gain of +12.6 MNOK arising from the traffic risk sharing mechanism.

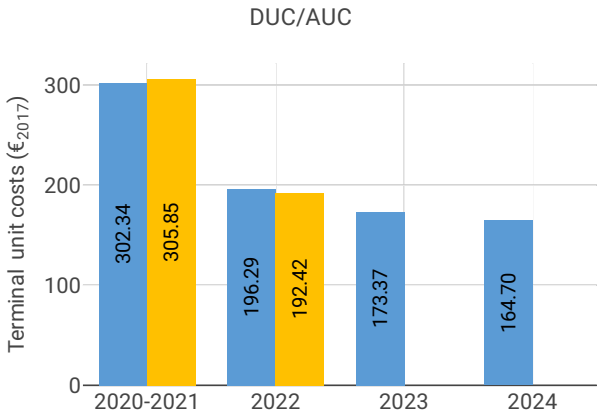
Avinor overall regulatory results (RR) for the en route activity

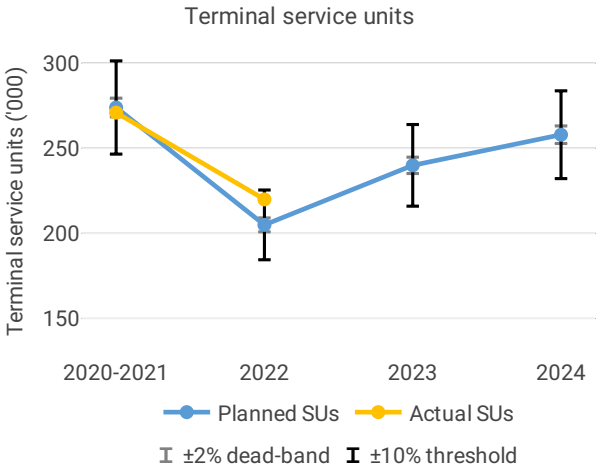
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+83.2 MNOK) and the actual RoE (+60.6 MNOK) amounts to +143.8 MNOK (12.2% of the en route revenues). The resulting ex-post rate of return on equity is 24.2%. See also **Note 2** above.

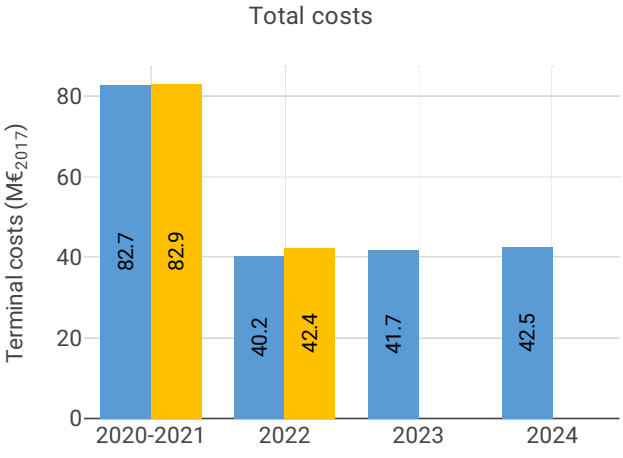
Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 60% debt used in the RP3 PP. The actual gearing of Avinor should be reported.**Note 2**: Ex-post RR should be seen in the light of the decision of the State of Norway to set the unit rate 2022 at a lower level (Art. 29(6)) than the one resulting from the RP3 PP. This decision generated losses of -127 MNOK for entities providing services in the en route charging zone (-106 MNOK for Avinor), which will be covered by the State of Norway.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

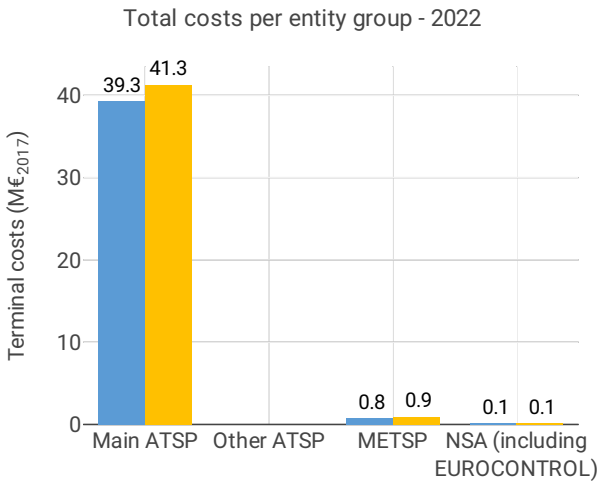


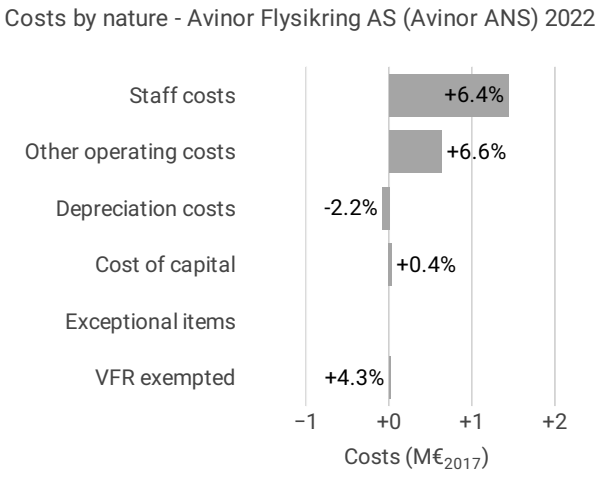




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	89	49	NA	NA
Determined costs	88	44	46	48
Difference costs	1	5	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	2.0%	2.0%	2.0%
Determined inflation index	NA	111.2	113.4	115.6
Actual inflation rate	NA	6.2%	NA	NA
Actual inflation index	NA	117.7	NA	NA
Difference inflation index (p.p.)	NA	+6.5	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the terminal AUC was -2.0% (or -36.04 NOK2017, -3.86 €2017) lower than the planned DUC resulting from significantly higher than planned TNSUs (+7.5%) and higher than planned terminal costs in real terms (+5.3%, or +20.0 MNOK2017, +2.1 M€2017). It should be noted that actual inflation index in 2022 was +6.5 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (+7.5%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. Hence the additional terminal revenue is shared between the ANSP and the airspace users, with the ANSP (Avinor) retaining an amount of +1.3 M€2017.

Terminal costs by entity

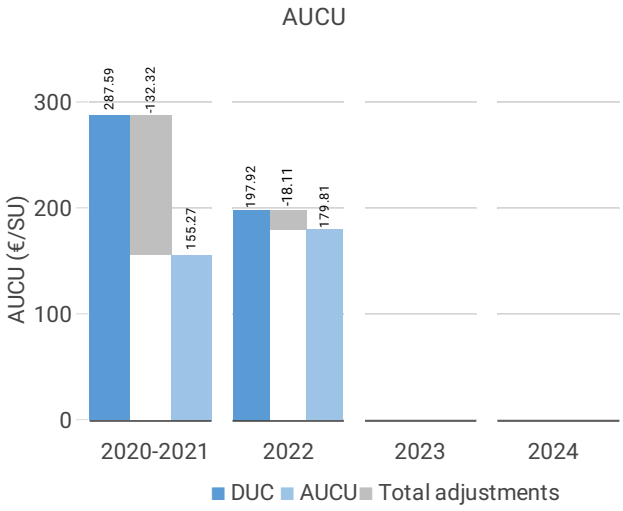
Actual real terminal costs are +5.3% (+2.1 M€2017) higher than planned. This is the result of higher costs for the main ANSP, Avinor (+5.1%, or +2.0 M€2017) and the MET service provider (+19.0%, or +0.2 M€2017) and lower costs for the NSA (-7.0%, or -0.01 M€2017).

Terminal costs for the main ANSP at charging zone level

Significantly higher than planned terminal costs in real terms for Avinor in 2022 (+5.1%, or +2.0 M€2017) result from the combination of:

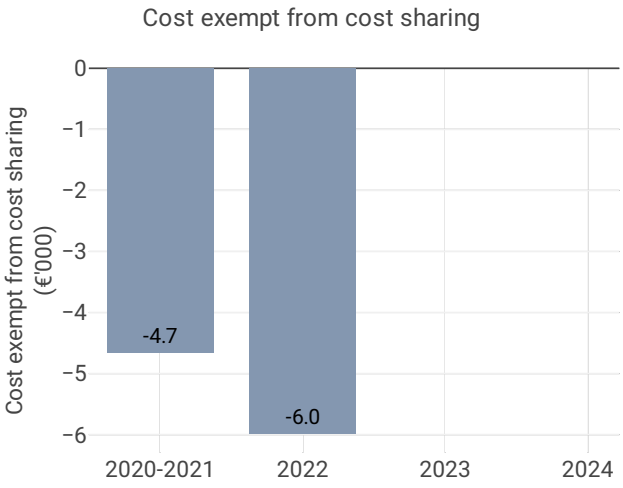
- Significantly higher staff costs (+6.4%), the main driver being the significantly higher than planned traffic at Norwegian regulated airports;
- Significantly higher other operating costs (+6.6%), resulting from higher than planned travel, consultancy and energy costs, and to a lesser extent, re-allocation between staff and other operating cost, linked with the organizational restructuring ;
- Lower depreciation (-2.2%), *"due to the delayed capitalization of the new terminal radar at Oslo airport"*;
- Slightly higher cost of capital (+0.4%), due to a slightly higher asset base resulting from the higher investment level than foreseen in the performance plan for RP3; and,
- Higher deduction for VFR exempted flights (+4.3%).

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



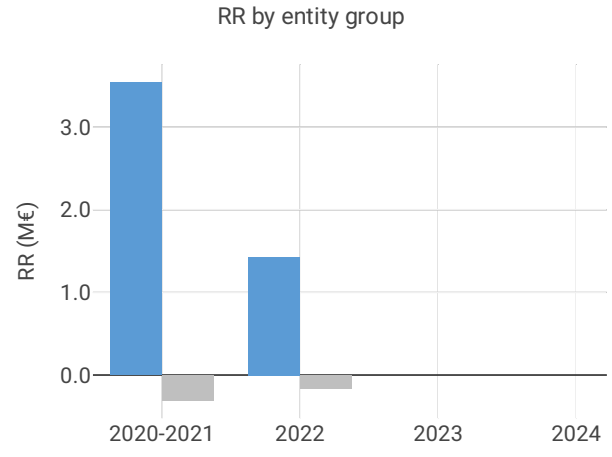
AUCU components (€/SU) – 2022

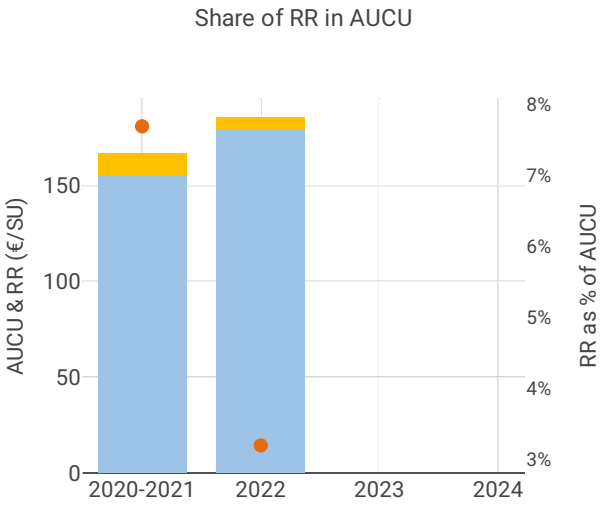
Components of the AUCU in 2022	€/SU
DUC	**197.92**
Inflation adjustment	8.99
Cost exempt from cost-sharing	-0.03
Traffic risk sharing adjustment	-6.87
Traffic adj. (costs not TRS)	-0.31
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	-19.89
Total adjustments	-18.11
AUCU	**179.81**
AUCU vs. DUC	**-9.1%**

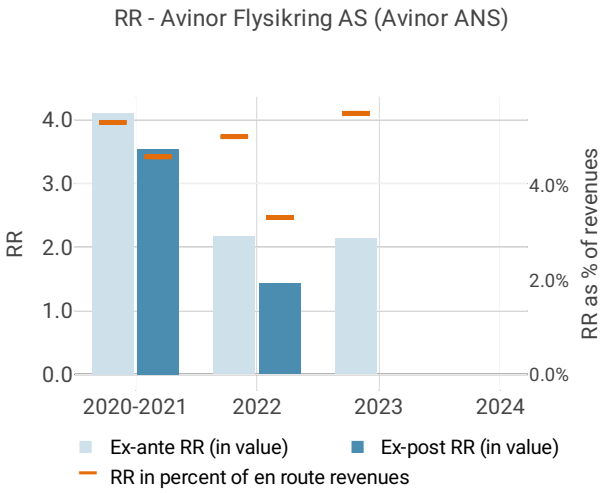


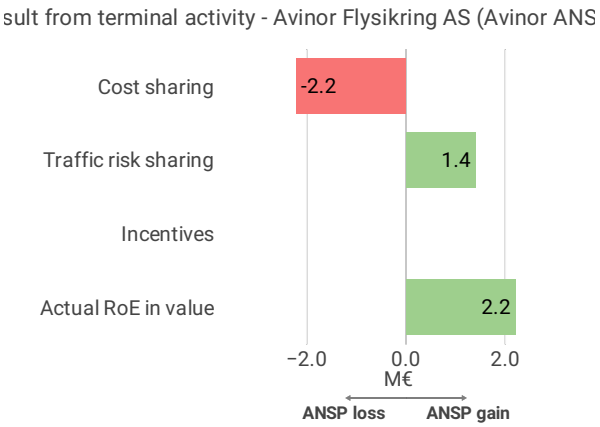
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	0.0	0.00
Competent authorities and qualified entities costs	-6.0	-0.03
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-6.0**	**-0.03**

5.3.3 Regulatory result (RR)









Focus on regulatory result

Avinor net gain on activity in the Norway terminal charging zone in the year 2022

Avinor reported a net loss of -4.8 MNOK, as a combination of a loss of -19.3 MNOK arising from the cost sharing mechanism and a gain of +14.5 MNOK arising from the traffic risk sharing mechanism.

Avinor overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-4.8 MNOK) and the actual RoE (+22.0 MNOK) amounts to +17.2 MNOK (3.9% of the terminal revenues). The resulting ex-post rate of return on equity is 8.0%. See also **Note 2** above.

Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 60% debt used in the RP3 PP. The actual gearing of Avinor should be reported.**Note 2**: Ex-post RR should be seen in the light of the decision of the State of Norway to set the unit rate 2022 at a lower level (Art. 29(6)) than the one resulting from the RP3 PP. This decision generated losses of -44 MNOK for entities providing services in the terminal charging zone (-40 MNOK for Avinor), which will be covered by the State of Norway.