PERFORMANCE REVIEW BOARD
of the Single European Sky

Performance Review Board

Monitoring Report

Norway - 2024

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Contents

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
2024: 11.6192 NOK

Share of Union-wide:
- **traffic (TSUs) 2024** 1.9%
- **en route costs 2024** 1.9%

Share en route / terminal costs 2024 71% / 29%

En route charging zone(s)
Norway

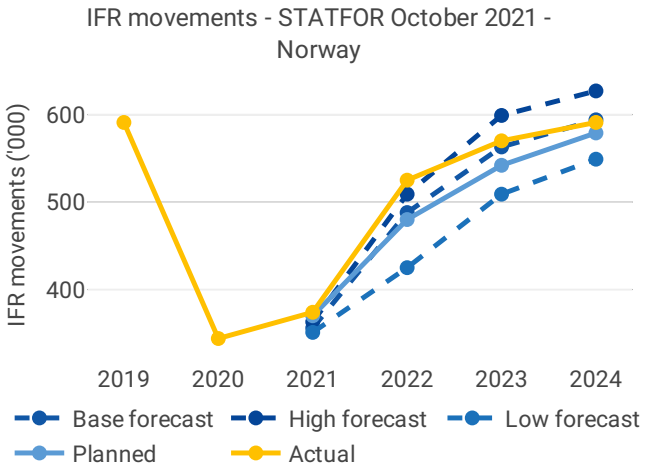
Terminal charging zone(s)
Norway

Main ANSP
- Avinor Flysikring AS (Avinor ANS)

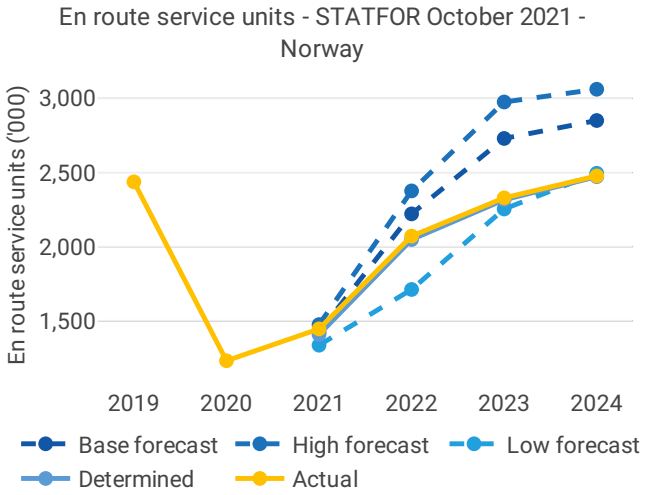
Other ANSPs
- Avinor AS
- Saerco (Kjevik ANSP)

MET Providers
- The Norwegian Meteorological Institute (MET)

1.2 Traffic (En route traffic zone)

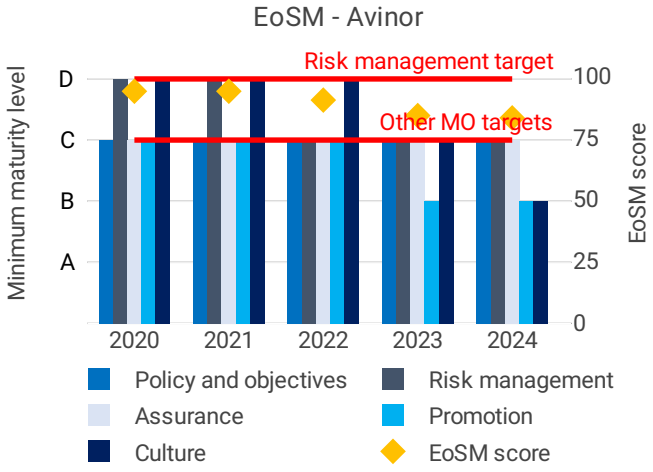


- Norway recorded 549K actual IFR movements in 2024, +0.4% compared to 2023 (591K).
- Actual 2024 IFR movements were -5.2% below the plan (579K).
- Actual 2024 IFR movements represent 93% of the actual 2019 level (591K).



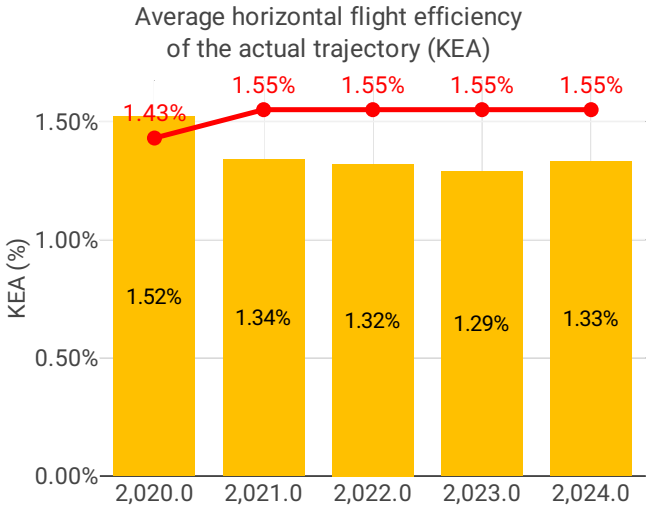
- Norway recorded 2,477K actual service units in 2024, +6.4% compared to 2023 (2,329K).
- Actual 2024 service units were +0.2% above the plan (2,472K).
- Actual 2024 service units are +1.6% above the actual 2019 level (2,437K).

1.3 Safety (Main ANSP)



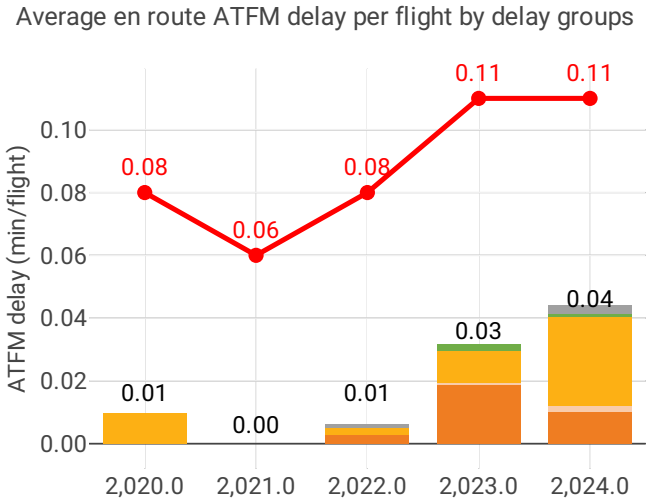
- Avinor started RP3 achieving the RP3 targets, but since 2022 the performance has degraded and Avinor did not meet the RP3 targets in 2024 on three out of five Management Objectives, including on Safety Risk Management.
- The rate of Runway Incursions increased marginally between 2023 and 2024, while the rate of SMIs showed a larger increase exceeding the Union-wide average.
- Norway should ensure that the ANSP implements, in a timely and cost-efficient manner, the necessary additional measures such as enhanced processes, improved allocation of resources, targeted training, and systematic reviews. Without such actions, the achievement of the RP4 targets could be jeopardised.

1.4 Environment (Member State)



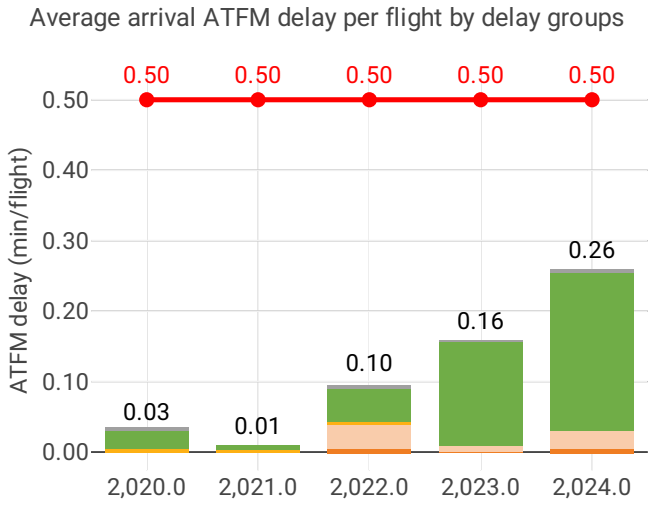
- Norway achieved a KEA performance of 1.33% compared to its target of 1.55% and contributed positively towards achieving the Union-wide target.
- Both KEP and SCR remained stable in comparison with 2023 and had similar values, meaning airlines planned close to the most efficient routes available.
- The share of CDO flights remained stable in 2024.
- Additional taxi out time decreased from 3.79 to 3.44 min/flight, while additional time in terminal airspace increased marginally from 0.93 to 1.01 min/flight in 2024 compared to 2023.
- Airport data for Bergen airport was not reported for 2024 despite being subject to monitoring as per the Regulation.

1.5 Capacity (Member State)



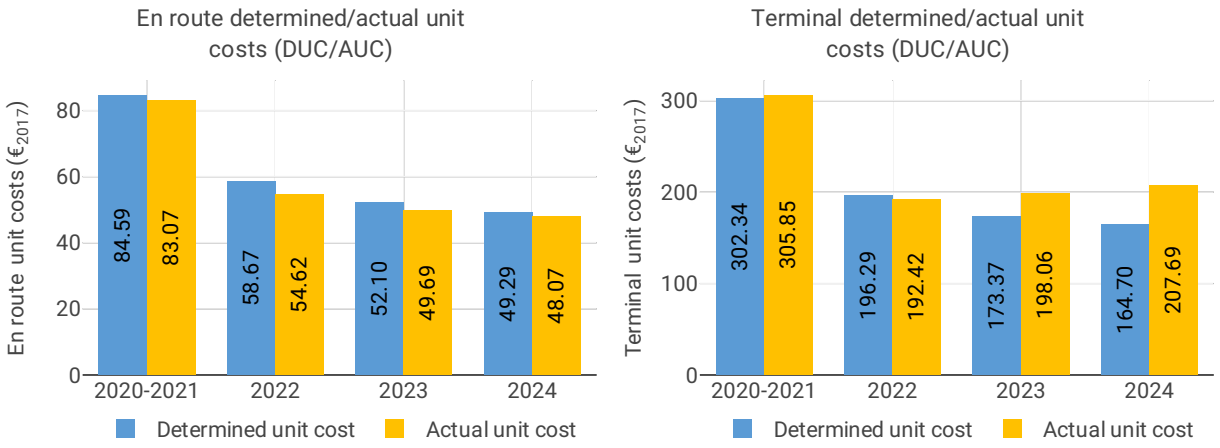
- Norway registered 0.03 minutes of average en route ATFM delay per flight during 2024, which has been adjusted to 0.04 during the post-ops adjustment process, thus achieving the local target value of 0.11. Delays in Norway increased by 0.01 minutes per flight year-on-year.

- Delays were highest in April and August, mostly related to ATC Disruptions.
- The share of delayed flights with delays longer than 15 minutes in Norway decreased by 6 percentage points compared to 2023 and was lower than 2019 values.
- The average number of IFR movements was 7% below 2019 levels in Norway in 2024.
- The number of ATCOs in OPS is 40, being below the 2024 plan in Bodo by 2 FTEs. The number of ATCOs in OPS is 90, being below the 2024 plan in Oslo by 14 FTEs. The number of ATCOs in OPS is 29, being below the 2024 plan in Stavanger by 2 FTEs.
- The yearly total of sector opening hours in Bodo ACC was 24,161, showing a 2.1% decrease compared to 2023. Sector opening hours are 29.3% below 2019 levels. The yearly total of sector opening hours in Oslo ACC was 22,750, showing a 1.4% decrease compared to 2023. Sector opening hours are 17.5% below 2019 levels. The yearly total of sector opening hours in Stavanger ACC was 16,418, showing a 1.3% decrease compared to 2023. Sector opening hours are 21.5% below 2019 levels.
- Bodo ACC registered 7.62 IFR movements per one sector opening hour in 2024, being 26.9% above 2019 levels.



- Norway registered an average airport arrival ATFM delay of 0.26 minutes per flight in 2024, thus achieving the local target of 0.50 minutes.
- Compared to 2023, average arrival ATFM delays in Norway were 66% higher in 2024, while the number of IFR arrivals decreased by 1%.
- The main reason for delays was weather, accounting for 86% of total delays.

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



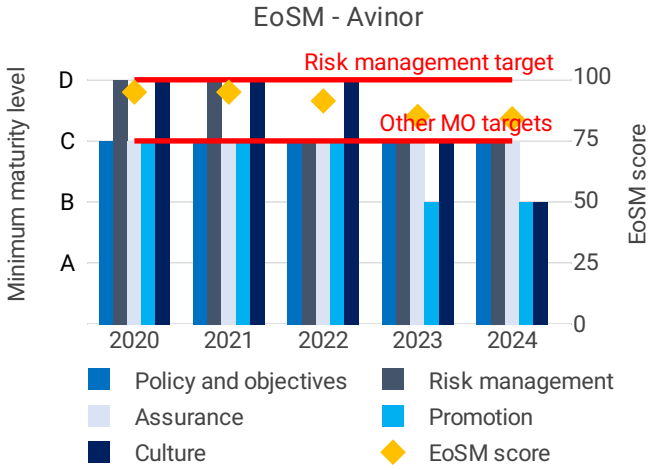
- The en route 2024 actual unit cost of Norway was 48.07€2017, -2.5% lower than the determined unit cost (49.29€2017). The terminal 2024 actual unit cost was 207.69€2017, +26% higher than the determined unit cost (164.70€2017).
- The en route 2024 actual service units of Norway (2.5M) were in line with the determined service units.
- The en route 2024 actual total costs were -2.8M€2017 (-2.3%) lower than determined. This difference is driven by lower staff costs for Avinor ANS (-6.4M€2017, or -8.3%) and depreciation costs (-3.4M€2017, or -26%). However, in nominal terms, the actual staff costs show an increase of +1.5% compared to planned. The NSA noted that depreciation costs are lower than planned mainly due to delays to the new ATM system and a change in estimating the value of leases resulting from IFRS16.
- Avinor ANS costs of investments were 33M€2017 in 2024 for both en route and terminal charging zones, +4.5% higher than determined (31M€2017). This was driven by higher cost of capital resulting from increased interest on debts, which led to higher costs for the new ATM system.
- The en route actual unit cost incurred by users in 2024 was 48.87€ (+11% higher than the 2024 DUC), while the terminal actual unit cost incurred by users in 2024 was 175.46€ (+18% higher than the 2024 DUC). These differences between the AUCU and the DUC for both en route and terminal charging zones are primarily attributed to the positive inflation adjustment.
- The en route regulatory result for Avinor ANS amounted to +15M€, or 13% of the 2024 revenue.
- Norway should ensure that any excessive regulatory result, including excess funds received by the ANSP due to the inflation mechanism, is either reinvested to improve the quality of services delivered to airspace users or reimbursed to them.

2 SAFETY - NORWAY

2.1 PRB monitoring

- Avinor started RP3 achieving the RP3 targets, but since 2022 the performance has degraded and Avinor did not meet the RP3 targets in 2024 on three out of five Management Objectives, including on Safety Risk Management.
- The rate of Runway Incursions increased marginally between 2023 and 2024, while the rate of SMIs showed a larger increase exceeding the Union-wide average.
- Norway should ensure that the ANSP implements, in a timely and cost-efficient manner, the necessary additional measures such as enhanced processes, improved allocation of resources, targeted training, and systematic reviews. Without such actions, the achievement of the RP4 targets could be jeopardised.

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 2024, degradation was observed for "Safety Culture" reducing the maturity of the component from level C to the level B, and consequently not achieving the target for this component.

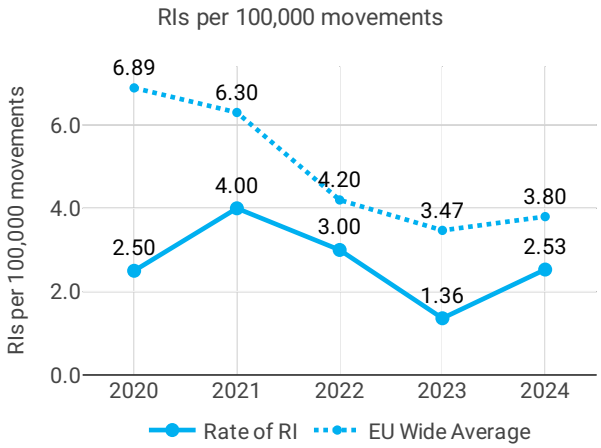
Avinor started RP3 achieving the RP3 targets, having maturity level D on both Safety Risk Management and Safety Culture. This level was retained in 2021, but since then the performance gradually degraded. In 2024, Avinor did not achieve the targets on three out of five Management Objectives.

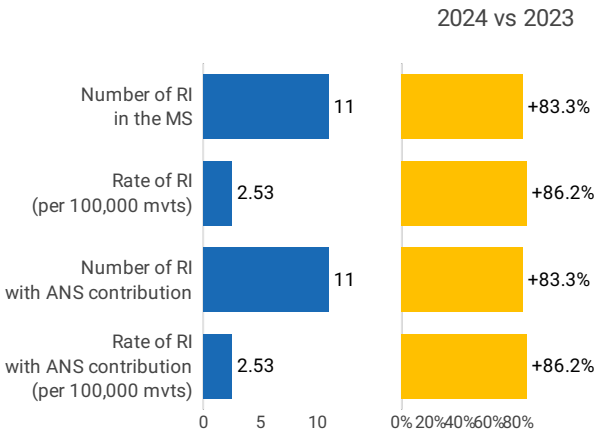
The Member State explains that the underlying cause is that Avinor has been reorganised several times during the last years and the number of administrative personnel has been reduced, leading to less formal processes and a lack of documentation in some fields. The Member State still considers the organisation as mature with respect to safety management and still having access to critical personnel. The financial situation is also noted to be challenging.

A set of measures have been defined for each Management Objective aiming at implementing necessary improvements.

2.3 Safety occurrences

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





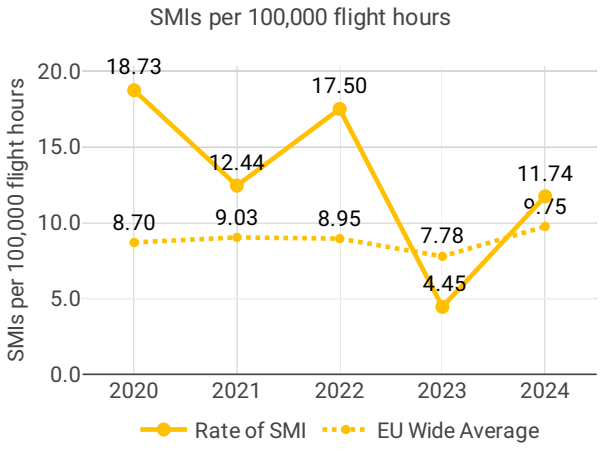
Rate of RIs per 100,000 airport movements - Norway				
#	Airport name	APT movements	Number of RI	Rate RI per 100,000
1	Oslo - Gardermoe	220,370	5	2.27
2	Bergen	94,360	1	1.06
3	Stavanger	66,267	4	6.04
4	Trondheim	54,020	1	1.85

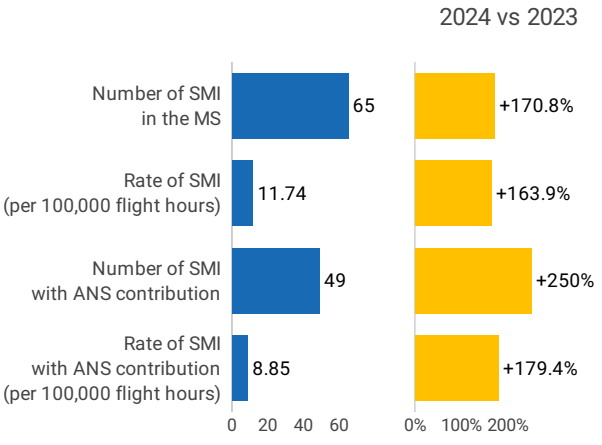
Focus on runway incursions

Norway started RP3 with a high rate of RIs, well above the Union-wide average. Between 2021 and 2022, the number of RIs decreased significantly causing the rate to fall below the Union-wide average. The rate of RIs has since then been stable. The rate of RIs increased slightly from 2023 to 2024.

The Member State specifies that there is a continuous monitoring of RIs with internal and external distribution of flight safety information and follow-up of reported accidents and incidents.

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





Rate of SMI with ANS contribution per 100,000 flight hours											
		Flight hours					Number of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	Avinor	235,547	257,160	646,054	441,775	553,483	27	14	84	14	49

		Rate of SMI per 100,000 flight hours					% variation in rate of SMIs				
#	ANSP	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
1	Avinor	11	12	13	3	9		+9%	+4%	-76%	+179%

Focus on separation minima

While the number of occurrences increased, Norway has recorded a downwards trend in the rate of SMIs at a Member State level, with a significant decrease in the number of occurrences from 2022 to 2023, also considering a large decrease in the number of flight hours. In 2024, the number of occurrences increased, with the rate moving above the Union-wide average.

The rate of SMIs with ANS contribution followed the same evolution as the rate on the Member State level, with a significant increase between 2023 and 2024.

The Member State specifies that there is a continuous monitoring of SMIs with internal and external distribution of flight safety information and follow-up of reported accidents and incidents. However, Norway does not specify if specific measures have been implemented following the increase in the rates.

2.3.3 Quality of occurences reporting

The number of occurrences reported at Member State level seems consistent with the occurrences reported at the ANSP level for SMIs and RIs.

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

Use of automated safety data recording system - 2024	
For RIs	For SMIs
✗	✗

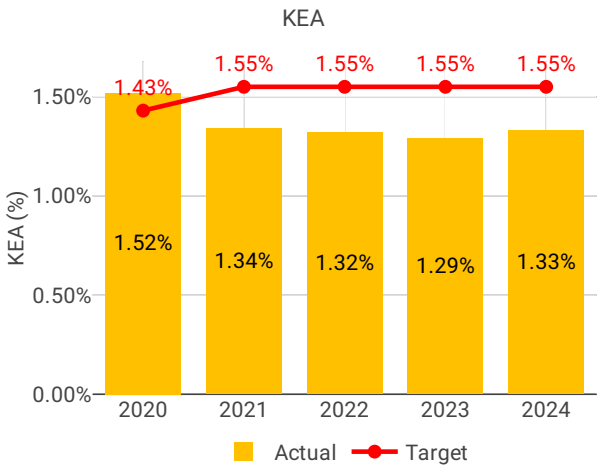
3 ENVIRONMENT - NORWAY

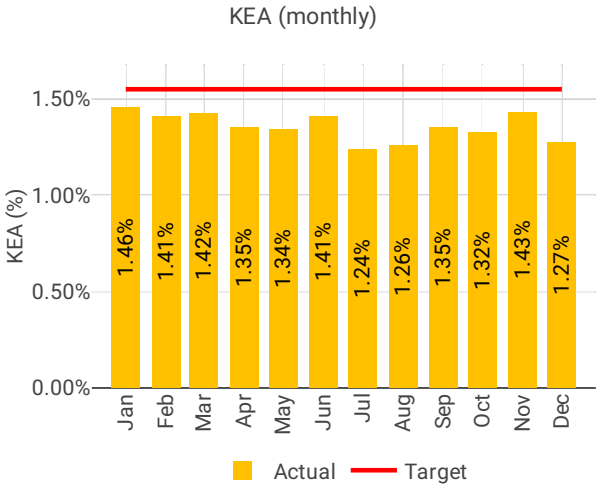
3.1 PRB monitoring

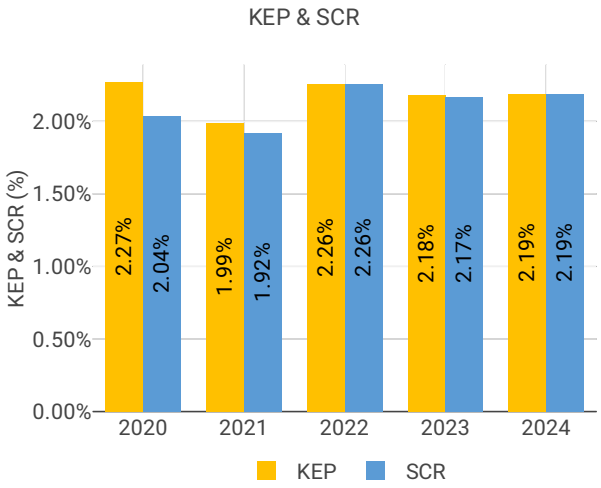
- Norway achieved a KEA performance of 1.33% compared to its target of 1.55% and contributed positively towards achieving the Union-wide target.
- Both KEP and SCR remained stable in comparison with 2023 and had similar values, meaning airlines planned close to the most efficient routes available.
- The share of CDO flights remained stable in 2024.
- Additional taxi out time decreased from 3.79 to 3.44 min/flight, while additional time in terminal airspace increased marginally from 0.93 to 1.01 min/flight in 2024 compared to 2023.
- Airport data for Bergen airport was not reported for 2024 despite being subject to monitoring as per the Regulation.

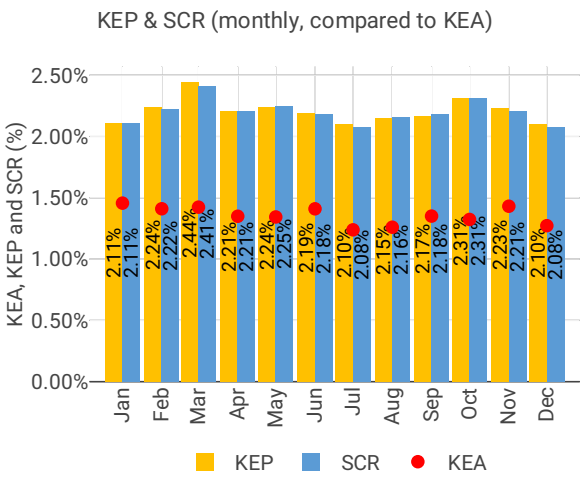
3.2 En route performance

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)



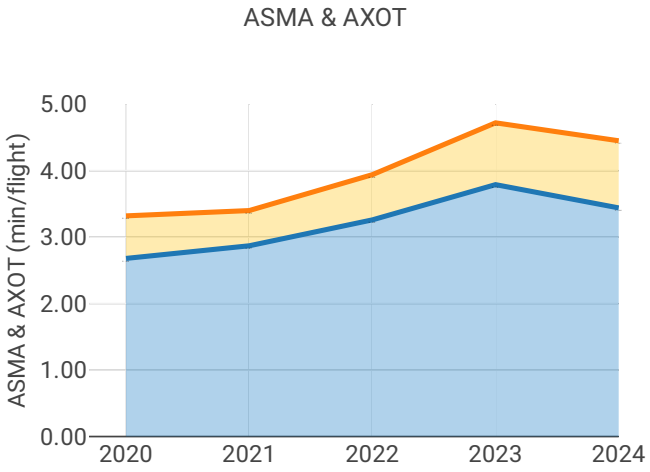


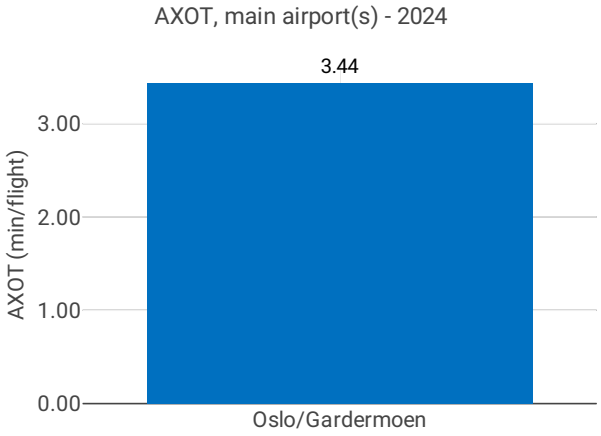


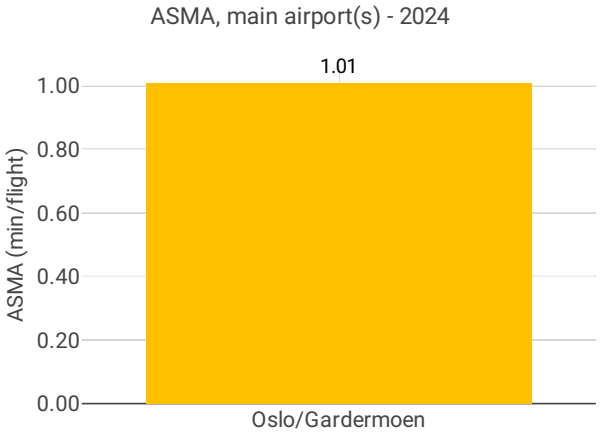


3.3 Terminal performance

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







Focus on ASMA & AXOT

AXOT

After several years increasing, the additional taxi-out times at Oslo decreased in 2024 (ENGM; 2019: 3.92 min/dep.; 2020: 2.68 min/dep.; 2021: 2.87 min/dep.; 2022: 3.26 min/dep.; 2023: 3.79 min/dep.; 2024: 3.44 min/dep.) resulting in the 8th highest value in the SES monitored airports, even if they remained below the SES average of 2.91 min/dep.

According to the Norwegian monitoring report: *Oslo airport is continuously working on improving winter operations since it is the months of January, February and December that year over year continues to be the worst performing months.*

The Norwegian monitoring report adds: *In 2023 Avinor modified the data delivery to Eurocontrol and completed the technical configuration of DANSAP to integrate Bergen, Stavanger and Trondheim airports in the monthly reporting procedure. Regrettably, Eurocontrol cannot publish received data as it varies far too much to be reliable. It is the lack of registration of actual runway-in-use for flights at those airports that makes it difficult. Avinor have tried to set a "default RWY", i.e. use the same amount of time regardless of which runway is in use, but*

still the variation is outside the required parameter for Additional taxi-out time. Not expecting a fix to problem in RP4.

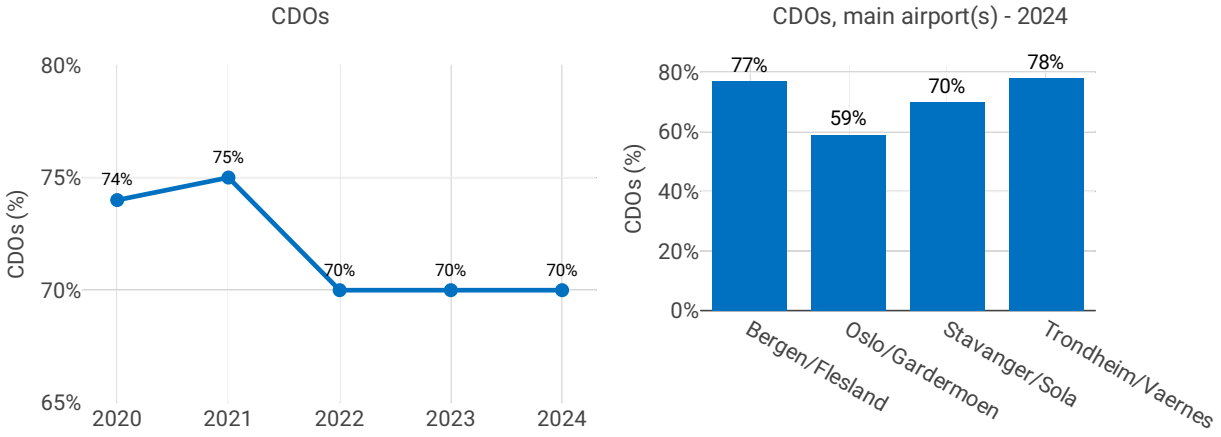
ASMA

Additional ASMA times at Oslo increased again in 2024 (ENGM; 2019: 1.03 min/arr.; 2020: 0.64 min/arr.; 2021: 0.53 min/arr.; 2022: 0.68 min/arr.; 2023: 0.93 min/arr.; 2024: 1.01 min/arr.) nearing pre-pandemic values but below the SES average of 1.28 min/arr.

According to the Norwegian monitoring report: *Focus on increasing curved RNP-AR approaches for equipped aircraft is key to reducing additional time in terminal airspace.*

The Norwegian monitoring report adds*: In 2023 Avinor modified the data delivery to Eurocontrol and completed the technical configuration of DANSAP to integrate Bergen, Stavanger and Trondheim airports in the monthly reporting procedure. Regrettably, Eurocontrol cannot publish received data as it varies far too much to be reliable. It is the lack of registration of actual runway-in-use for flights at those airports that makes it difficult. Avinor have tried to set a "default RWY", i.e. use the same amount of time regardless of which runway is in use, but still the variation is outside the required parameter for Additional time in terminal airspace. Not expecting a fix to problem in RP4.*

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



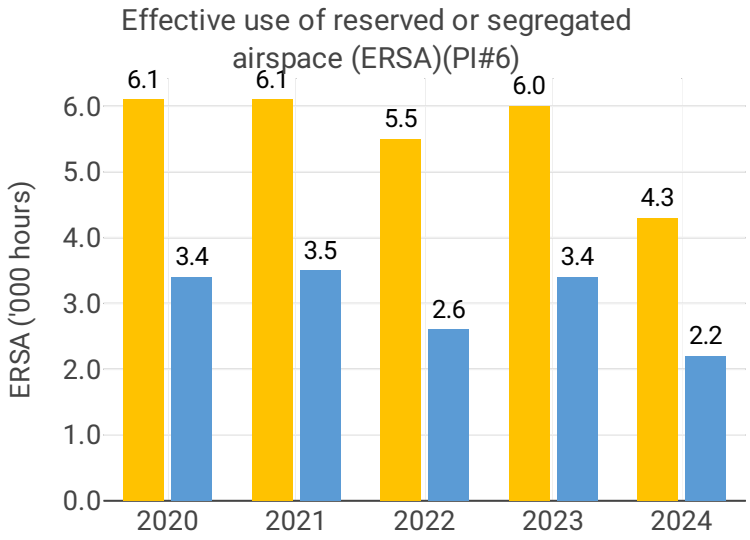
Focus CDOs

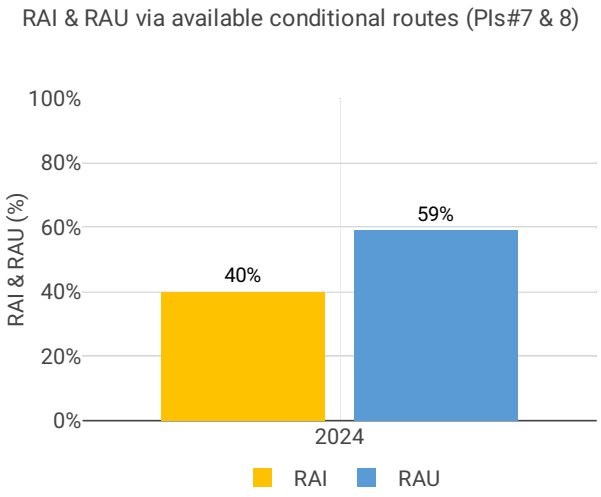
The shares of CDO flights have stayed similar to the 2023 values. All airports again have very high shares of CDO flights with all airports having more than double the overall RP3 value in 2024 (29.3%).

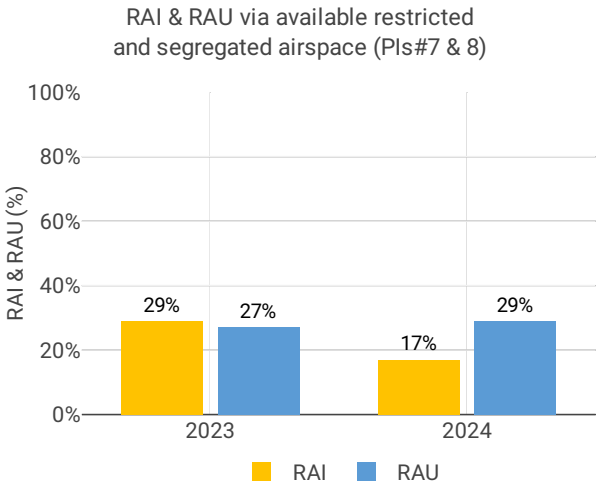
According to the Norwegian monitoring report: *Avinor ANS is continuously working on facilitating CDO/CCO, and the figures show that Avinor is among the very best in Europe. Further increase is difficult as simultaneity on approach occasionally necessitates flattening, which degrades the CDO statistics, but which is necessary for safety reasons and for the sake of traffic flow.*

Airport level															
	Additional taxi-out time (PI#3)					Additional ASMA time (PI#4)					Share of arrivals applying CDO (PI#5)				
Airport	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%	77%	77%
Oslo/Gar-dermoen	2.68	2.87	3.26	3.79	3.44	0.64	0.53	0.68	0.93	1.01	62%	64%	58%	58%	59%
Stavanger/ Sola	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76%	74%	71%	70%	70%
Trondheim/ Vaernes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77%	79%	76%	78%	78%

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.

Military - related measures implemented or planned to improve capacity

The AMC procedure has been revised establishing new areas to cater for new military requirements. 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

Ratio in 2024 is approx. at same level as previous years in RP3 (>50%).

Initiatives implemented or planned to improve PI#7

No data available

Initiatives implemented or planned to improve PI#8

n/a

4 CAPACITY - NORWAY

4.1 PRB monitoring

- Norway registered 0.03 minutes of average en route ATFM delay per flight during 2024, which has been adjusted to 0.04 during the post-ops adjustment process, thus achieving the local target value of 0.11. Delays in Norway increased by 0.01 minutes per flight year-on-year.
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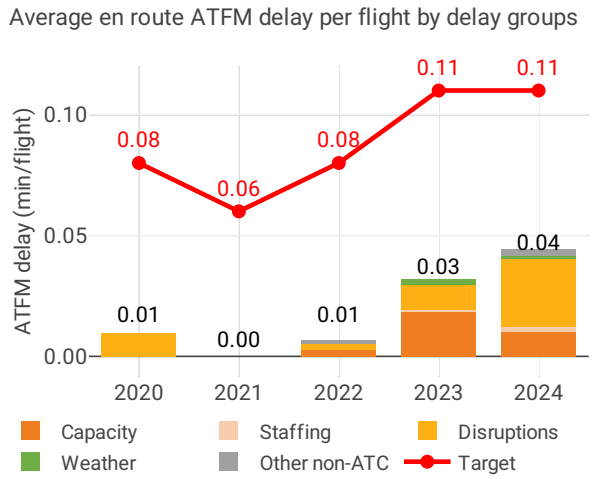
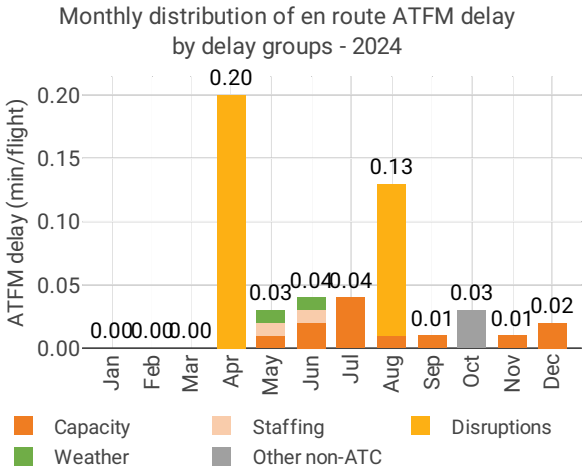
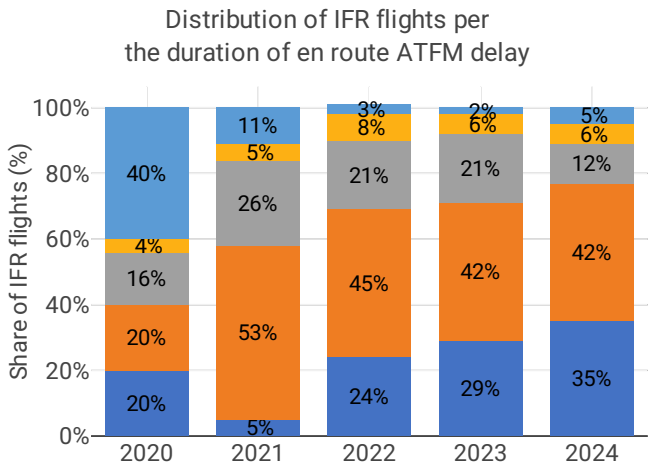
- Compared to 2023, average arrival ATFM delays in Norway were 66% higher in 2024, while the number of IFR arrivals decreased by 1%.
- The main reason for delays was weather, accounting for 86% of total delays.

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 a slight increase in traffic from 552k flights in 2023, with 17k minutes of en route ATFM delay, to 555k flights in 2024 with 25k minutes of en-route ATFM delay. For reference in 2019, Norway handled 595k flights with <2k minutes of en-route ATFM delays.

NSA's assessment of capacity performance

The war in Ukraine has caused a substantial shift in traffic. When the STATFOR forecast for October 2021 for the period 2022-2027 is compared to actual traffic in the years where these data are available, we see a considerable reduction. A central cause is overflights being re-routed due to closed airspaces.

The delays in 2024 are mainly related to two incidents; A technical disruption in April and a power outage in August (ER Disrutions (ATC)).

Monitoring process for capacity performance

The actual en-route atfm actual delay per flight of 0,04 min./flt. in 2024 was significant below the national target set to 0,11 min./flt. Actual performance throughout RP3 is much better than set in the PP.

Capacity planning

Norway has been developing ATC capacity over years, and is in position to provide more capacity than the national reference values. Based on consultation meetings with the airspace users and Avinor ANS during the en route delay is set to between 0,06 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)

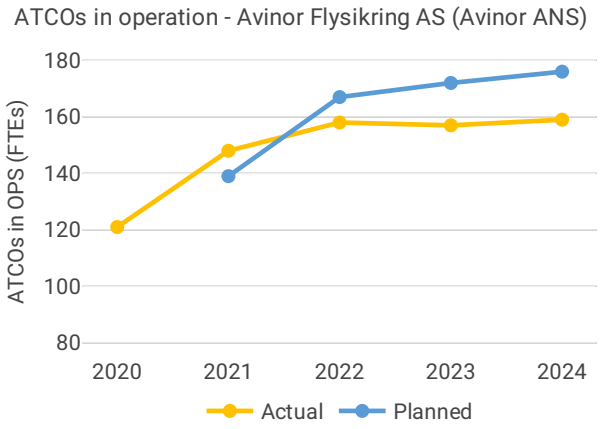
Not applicable

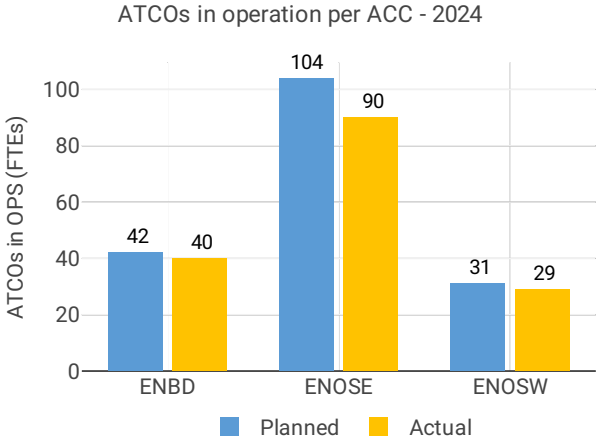
En route Capacity Incentive Scheme

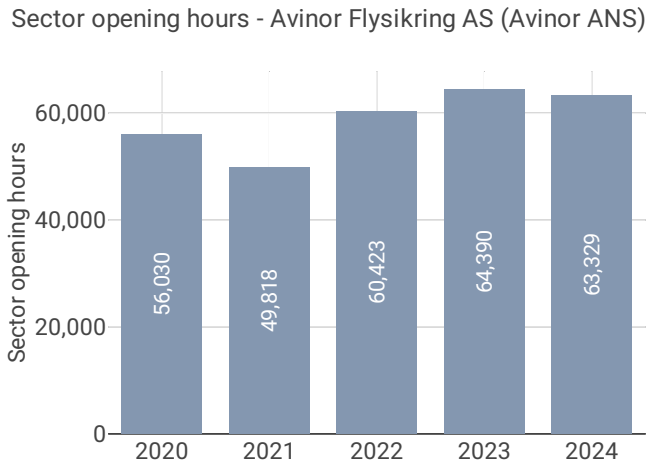
Avinor Flysikring AS (Avinor ANS): The adopted incentive scheme does not foresee the payment of any bonus even though the capacity targets were met.

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.

4.2.2 Other indicators





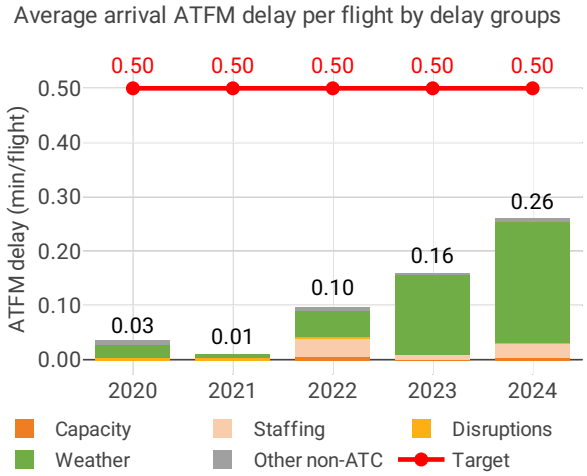


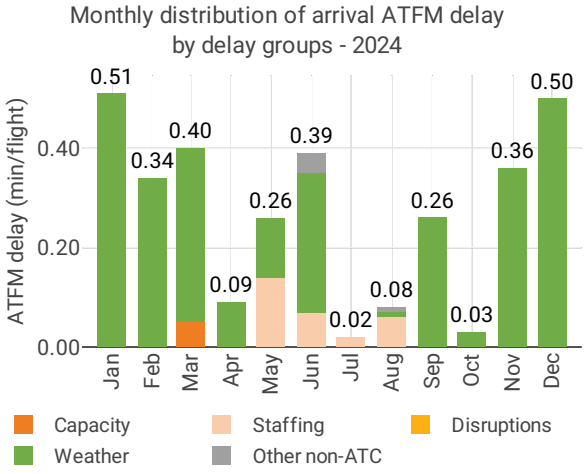
Focus on ATCOs in operations

The reduction in ATCOs in OPS in Oslo (ENOSE ACC) is mainly due to operating staff being engaged in the project related to the new ATM system. As a result they are not a part of the staff reported as ATCOs in OPS. Total staffing level is in accordance to plan.

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 started providing data in October 2023, so the indicators should be available as of 2024. Contrary to the general trend, traffic at these four Norwegian airports declined by 1% in 2024 compared to 2023, remaining 9% below 2019 levels.

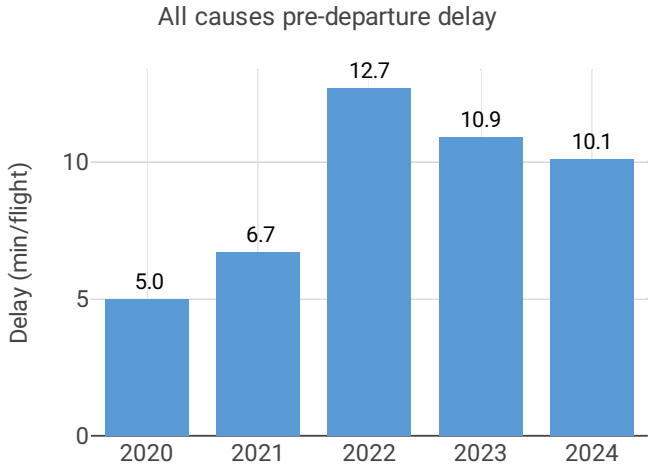
Average arrival ATFM delay in 2024 was 0.26 min/arr, compared to 0.16 min/arr in 2023. The national target was met. ATFM slot adherence remained very high (2023: 99.2%; 2024: 99.2%).

For the third year in a row, arrival ATFM delays increased at Oslo (ENGM; 2019: 0.31 min/arr; 2020: 0.05 min/arr; 2021: 0.01 min/arr; 2022: 0.17 min/arr; 2023: 0.30 min/arr; 2024: 0.48 min/arr) while the rest of airports registered minimum delays. 86% of the arrival ATFM delays in Norway were attributed to Weather, followed by ATC Staffing issues (10%) at Oslo.

According to the Norwegian monitoring report: *The actual terminal and airport ANS ATFM arrival delay per flight of 0,26 min./flt. at a national level in 2024, still significant below the national target set to 0,50 min./flt. Actual performance is so far in RP3 better than set in the PP. A significant part of the delays are reported in 2024 are connected to weather conditions at ENGM in Autumn and during the Winter period.*

Norway's performance plan sets a national target on arrival ATFM delay for 2024 of 0.50 min/arr. This target was met with an actual performance of 0.26 min/arr. The incentive scheme uses modulated pivot values limited to CRSTMP delay causes. This pivot value for CRSTMP is 0.08 min/arr in 2024. According to the attribution of the regulation reason, the actual CRSTMP value for 2023 is 0.031 min/arr, although Norway reports this value as 0.07 min/arr. The Norwegian Performance Plan does not establish any bonus.

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**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
Bergen/Flesland	0.01	0.01	0.02	0.01	0.03	98.9%	98.4%	98.7%	98.8%	99.1%
Oslo/Gardermoen	0.05	0.01	0.17	0.30	0.48	98.4%	99.4%	99.4%	99.4%	99.6%
Stavanger/Sola	0.03	0.01	0.03	NA	NA	97.4%	93.2%	98.6%	98.6%	98.3%
Trondheim/Vaernes	0.03	NA	0.00	NA	NA	98.9%	98.0%	99.3%	99.0%	97.9%

	ATC pre departure delay (PI#2)					All causes pre departure delay (PI#3)				
Airport name	**2020**	**2021**	**2022**	**2023**	**2024**	**2020**	**2021**	**2022**	**2023**	**2024**
Bergen/Flesland	NA	NA	NA	0.00	0.01	NA	NA	NA	9.0	9.6
Oslo/Gardermoen	0.05	0.06	0.10	0.11	0.15	5.0	6.7	12.7	11.1	11.1
Stavanger/Sola	NA	NA	NA	0.01	0.01	NA	NA	NA	8.7	7.6
Trondheim/Vaernes	NA	NA	NA	0.00	0.00	NA	NA	NA	11.0	9.0

Focus on performance indicators at airport level

ATFM slot adherence

All Norwegian airports showed adherence above 98% and the national average was 99.2%. With regard to the 0.8% of flights that did not adhere, 0.4% was early and 0.4% was late.

According to the Norwegian monitoring report: *Adherence to ATFM slots at national level in 2024 (99,2%) is approx. in line with previous years both in RP3 and in RP2. I.e. excellent performance.*

ATC pre-departure delay

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 in 2024 slightly deteriorated with respect to 2023 (ENGM; 2019: 0.14 min/dep.; 2020: 0.05 min/dep.; 2021: 0.06 min/dep.; 2022: 0.10 min/dep.; 2023: 0.11 min/dep.; 2024: 0.17 min/dep.).

According to the Norwegian monitoring report: *The increase in pre-departure delay at Oslo airport is mostly related to winter operations with increased conflicts on the apron related to pushback and focus on delaying aircraft at parking stand, not on the TWY to reduce emissions.*

All causes 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 decreased in 2024 (ENGM: 2020: 5.01 min/dep.; 2021: 6.74 min/dep.; 2022: 12.74 min/dep.; 2023: 11.13 min/dep.; 2024: 11.08 min/dep.) and resulted in the second lowest value among the RP3 monitored airports.

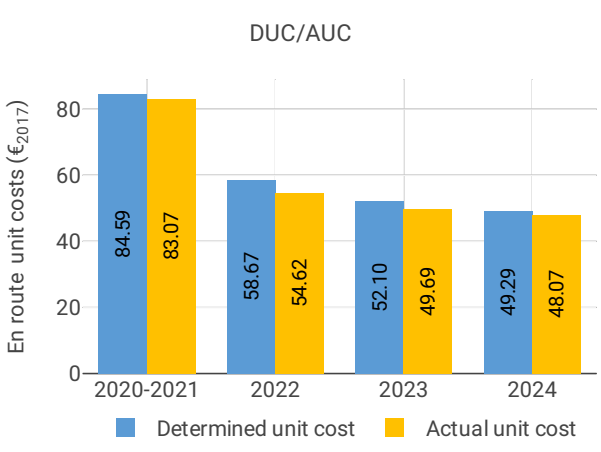
5 COST-EFFICIENCY - NORWAY

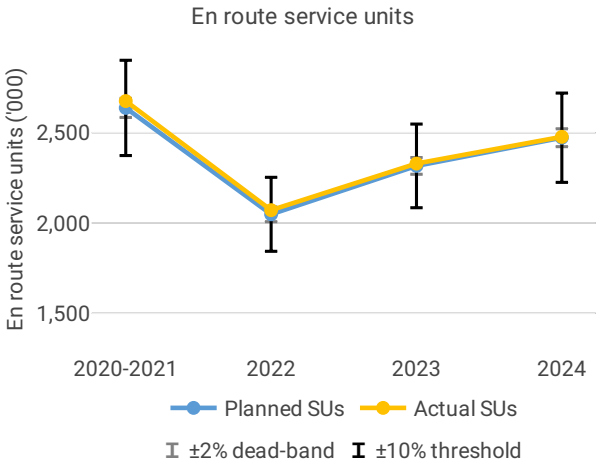
5.1 PRB monitoring

- The en route 2024 actual unit cost of Norway was 48.07€2017, -2.5% lower than the determined unit cost (49.29€2017). The terminal 2024 actual unit cost was 207.69€2017, +26% higher than the determined unit cost (164.70€2017).
- The en route 2024 actual service units of Norway (2.5M) were in line with the determined service units.
- The en route 2024 actual total costs were -2.8M€2017 (-2.3%) lower than determined. This difference is driven by lower staff costs for Avinor ANS (-6.4M€2017, or -8.3%) and depreciation costs (-3.4M€2017, or -26%). However, in nominal terms, the actual staff costs show an increase of +1.5% compared to planned. The NSA noted that depreciation costs are lower than planned mainly due to delays to the new ATM system and a change in estimating the value of leases resulting from IFRS16.
- Avinor ANS costs of investments were 33M€2017 in 2024 for both en route and terminal charging zones, +4.5% higher than determined (31M€2017). This was driven by higher cost of capital resulting from increased interest on debts, which led to higher costs for the new ATM system.
- The en route actual unit cost incurred by users in 2024 was 48.87€ (+11% higher than the 2024 DUC), while the terminal actual unit cost incurred by users in 2024 was 175.46€ (+18% higher than the 2024 DUC). These differences between the AUCU and the DUC for both en route and terminal charging zones are primarily attributed to the positive inflation adjustment.
- The en route regulatory result for Avinor ANS amounted to +15M€, or 13% of the 2024 revenue.
- Norway should ensure that any excessive regulatory result, including excess funds received by the ANSP due to the inflation mechanism, is either reinvested to improve the quality of services delivered to airspace users or reimbursed to them.

5.2 En route charging zone

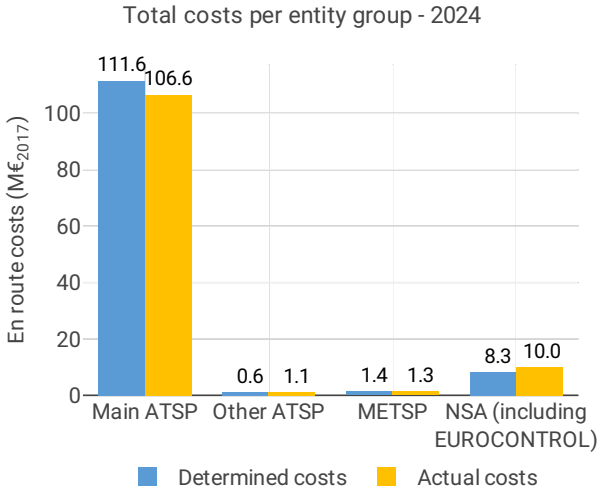
5.2.1 Unit cost (KPI#1)

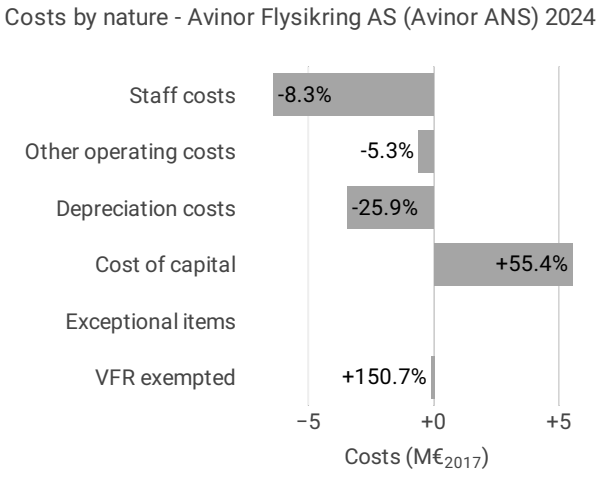




Actual and determined data				
Total costs - nominal (M€)	**2020-2021**	**2022**	**2023**	**2024**
Actual costs	237	128	136	142
Determined costs	236	130	133	136
Difference costs	1	-2	4	6

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%	5.8%	2.8%
Actual inflation index	NA	117.7	124.5	128
Difference inflation index (p.p.)	NA	+6.5	+11.1	+12.3





Focus on unit cost

AUC vs. DUC

In 2024, the en route AUC was -2.5% (or -11.41 NOK2017, -1.22 €2017) lower than the planned DUC. This results from the combination of lower than planned en route costs in real terms (-2.3%, or -26.2 MNOK2017, -2.8 M€2017) and slightly higher than planned TSUs (+0.2%). It should be noted that the actual inflation index in 2024 was +12.3 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+0.2%) falls inside the ±2% dead-band. Hence, the gain of additional en route revenues is kept by the ANSPs (see items 10 to 14).

En route costs by entity

Actual real en route costs are -2.3% (-2.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, Avinor (Continental) (-4.5%, or -5.0 M€2017) and the MET service provider (-6.0%, or -0.1 M€2017) and higher costs for the other ANSP (KJE, +95.0%, or +0.6 M€2017) and the NSA/EUROCONTROL (+20.8%, or +1.7 M€2017).

En route costs for the main ANSP at charging zone level

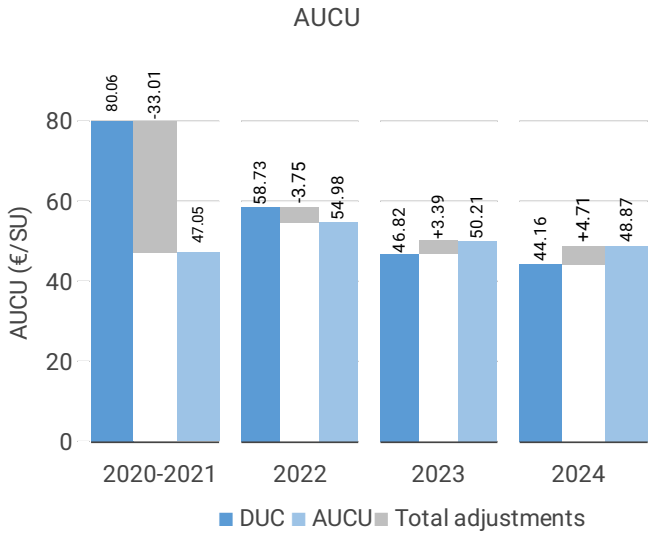
Lower than planned en route costs in real terms for Avinor in 2024 (-4.5%, or -5.0 M€2017) result from:

- Significantly lower staff costs (-8.3%) in real terms due to the impact of the inflation index (+12.3 p.p.). In nominal terms, staff costs exceeded the plan (+1.5%), which is reported to reflect higher expenditure on "*OPEX projects, due to a substantial increase in project activity*" and changes in accounting policies resulting in the reclassification of some expenses as staff costs instead of other operating costs.
- Lower other operating costs (-5.3%), also reflecting the impact of inflation index, as nominal costs exceeded planned figures (+4.7%), partly due to higher costs for insurance and energy.
- Significantly lower depreciation (-25.9%) resulting from a combination of lower than planned effect of leases (IFRS16) and lower than planned deprecation of fixed assets,
- Significantly higher cost of capital (+55.4%), explained by an "*increase in project costs related to the new ATM system*" and *"increased interest on debts*".
- Significantly higher deduction for VFR exempted flights (+150.7%).

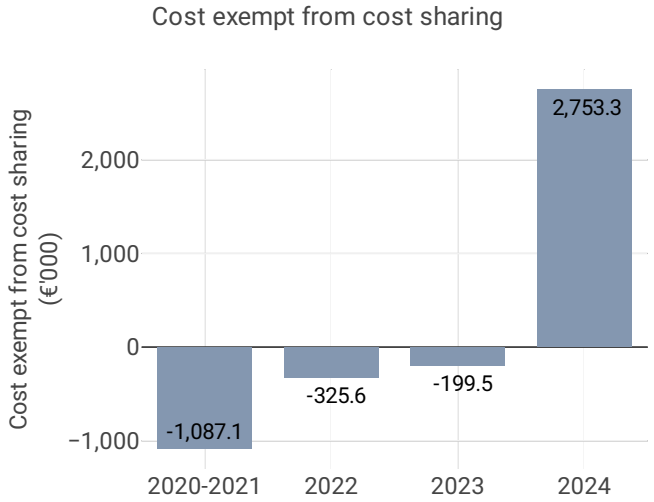
RP3 summary

When considering the whole of RP3 (2020-2024) for Norway en route charging zone, actual TSUs are +0.8% higher than planned, while actual costs in real terms are -2.7% lower than the determined costs (some -145.6 MNOK2017 or -15.6 M€2017). As a result, the weighted average actual unit cost over RP3 (556.75 NOK2017 or 59.69 €2017) is -3.5% lower than planned in the PP (576.73 NOK2017 or 61.83 €2017).

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

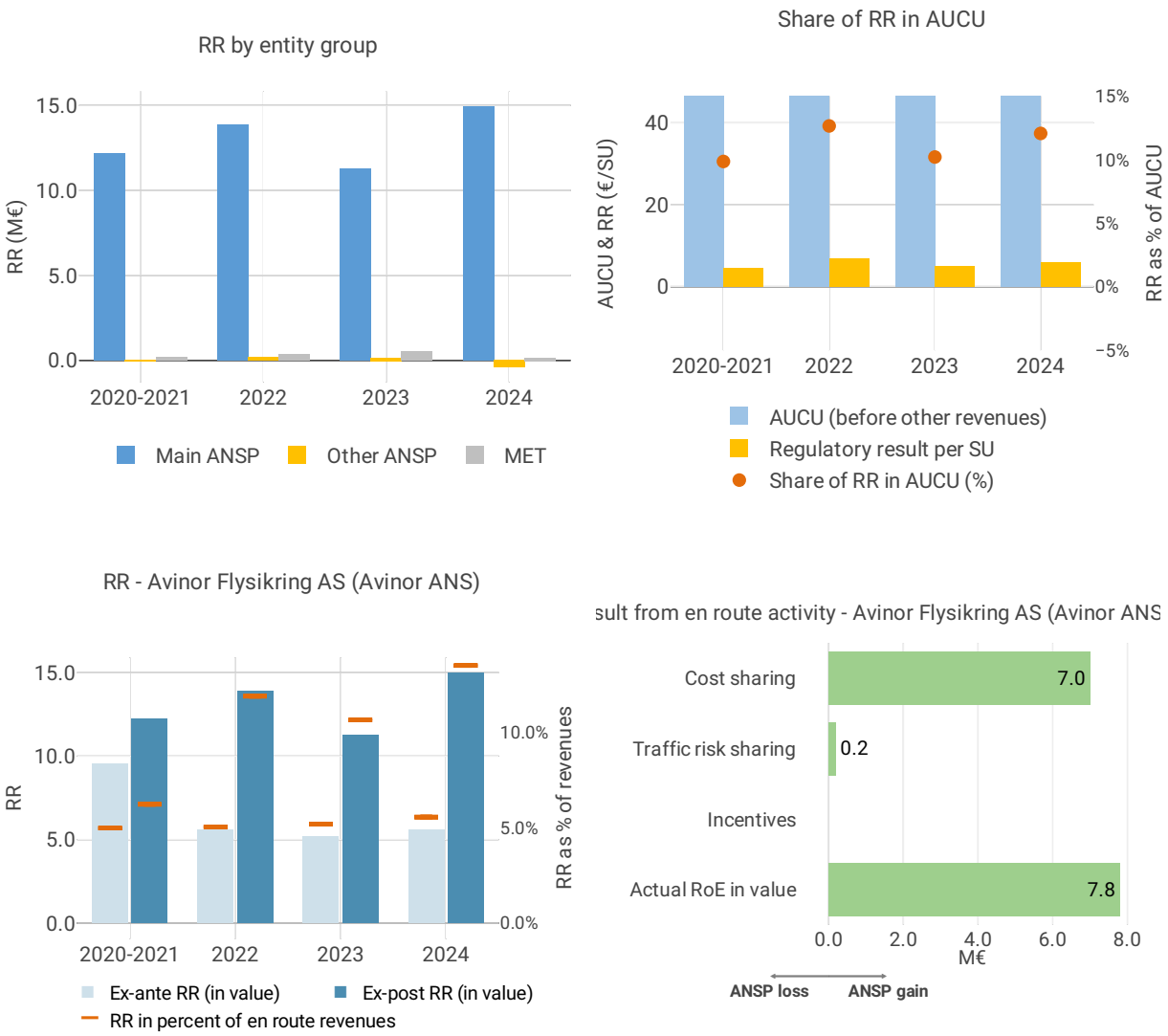


AUCU components (€/SU) – 2024	
Components of the AUCU in 2024	**€/SU**
DUC	**44.16**
Inflation adjustment	3.61
Cost exempt from cost-sharing	1.11
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	-0.01
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	0.00
Total adjustments	4.71
AUCU	**48.87**
AUCU vs. DUC	**+ 10.7%**



Cost exempt from cost sharing – 2024		
Cost exempt from cost sharing by item - 2024	**€'000**	**€/SU**
New and existing investments	1,349.6	0.54
Competent authorities and qualified entities costs	88.1	0.04
Eurocontrol costs	1,297.5	0.52
Pension costs	0.0	0.00
Interest on loans	18.0	0.01
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**2,753.3**	**1.11**

5.2.3 Regulatory result (RR)



Focus on regulatory result

Avinor net gain/loss on activity in the Norway en route charging zone in the year 2024

Avinor reported a net gain of +83.2 MNOK, as a combination of a gain of +81.1 MNOK arising from the cost sharing mechanism, with a gain of +2.1 MNOK arising from the traffic risk sharing mechanism.

Avinor overall regulatory result (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 (+90.6 MNOK) amounts to +173.8 MNOK (13.5% of the en route revenues). The resulting ex-post rate of return on equity is 19.6%, which is higher than the 10.2% planned in the PP. See also Notes 1 and 2 in Box 10 above.

RP3 summary

When considering the whole of RP3 (2020-2024), Avinor generated a cumulative gain in respect of cost sharing of +189.8 MNOK, as actual total costs for RP3 were lower than planned.

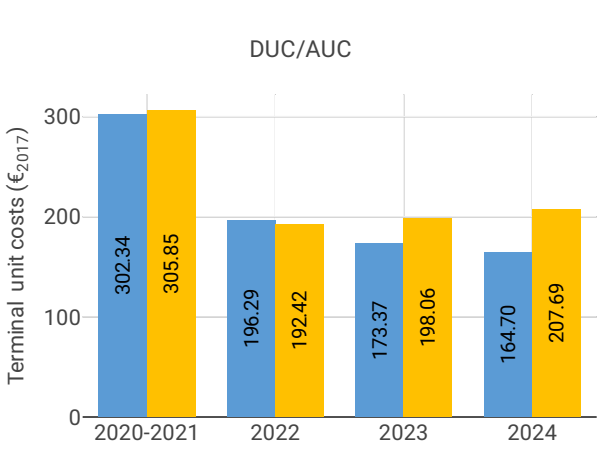
The traffic risk sharing mechanism generated a gain of +50.1 MNOK. Adding the actual RoE (+328.6 MNOK over RP3) leads to an overall regulatory result of +568.5 MNOK, which corresponds to an average ex-post rate of return on equity of 17.6% (compared to 10.2% initially planned in the PP). See also Notes 1 and 2 in Box 10 above.

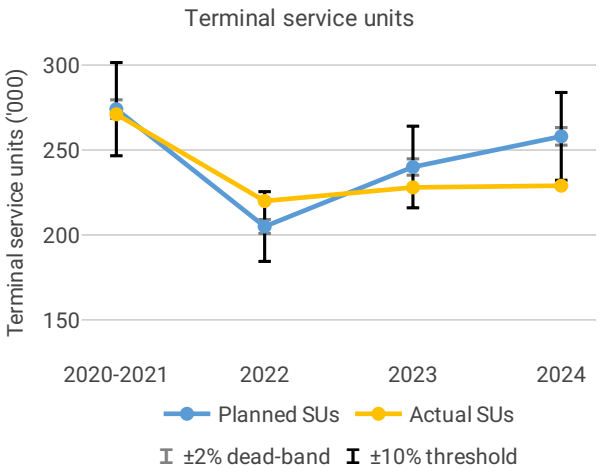
Note 1: Ex-ante and ex-post RoE are computed based on the notional gearing of 60% debt used in the RP3 PP. The actual gearing of Avinor should be reported.

Note 2: Ex-post RR does not take into account the application of lower unit rates as per Art. 29.6 in 2020-21 and 2022 (loss in revenues for Avinor corresponds to -489 MNOK for 2020-2021 and -106 MNOK for 2022

5.3 Terminal charging zone

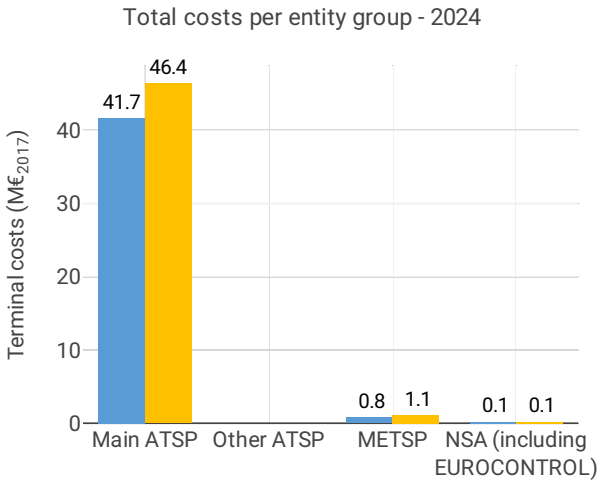
5.3.1 Unit cost (KPI#1)

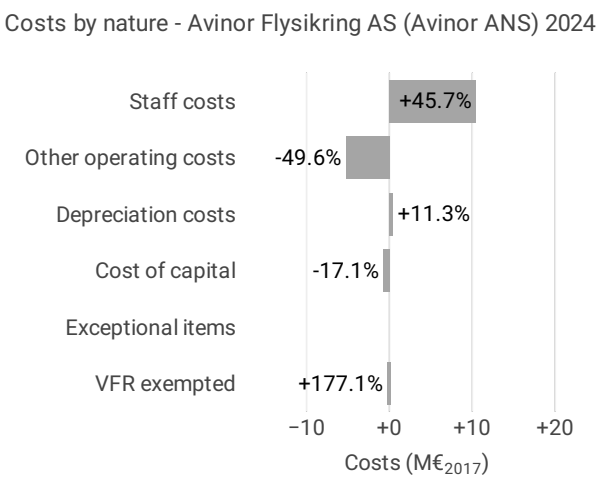




Actual and determined data				
Total costs - nominal (M€)	**2020-2021**	**2022**	**2023**	**2024**
Actual costs	89	49	54	59
Determined costs	88	44	46	48
Difference costs	1	5	8	11

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%	5.8%	2.8%
Actual inflation index	NA	117.7	124.5	128
Difference inflation index (p.p.)	NA	+6.5	+11.1	+12.3





Focus on unit cost

AUC vs. DUC

In 2024, the terminal AUC was +26.1% (or +401.04 NOK2017, +42.99 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned terminal costs in real terms (+11.9%, or +47.3 MNOK2017, +5.1 M€2017) and significantly lower than planned TNSUs (-11.2%). It should be noted that the actual inflation index in 2024 was +12.3 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (-11.2%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of terminal revenues is therefore shared between the ANSP and the airspace users (see the main ANSP loss in Box 11).

Terminal costs by entity

Actual real terminal costs are +11.9% (+5.1 M€2017) higher than planned. This is the result of higher costs for the main ANSP, Avinor (+11.4%, or +4.7 M€2017), the MET service provider (+40.4%, or +0.3 M€2017) and the NSA (+9.2%).

Terminal costs for the main ANSP at charging zone level

Significantly higher than planned terminal costs in real terms for Avinor in 2024 (+11.4%, or +4.7 M€2017) result from:

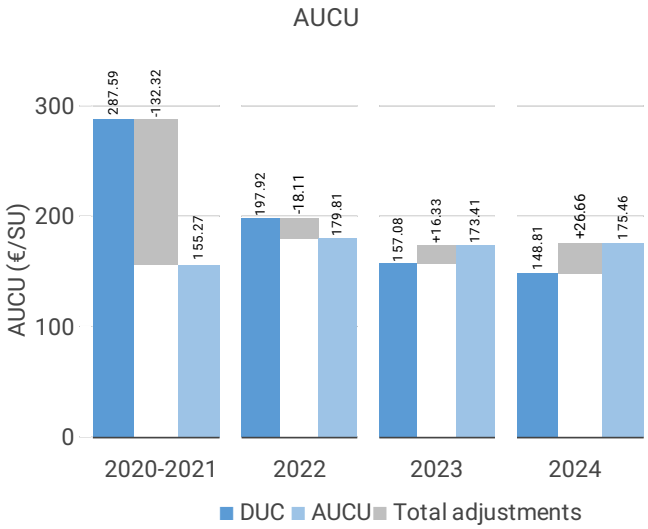
- Significantly higher staff costs (+45.7%), resulting from a combination of i) higher salary, pension and overtime costs, and ii) a change in cost accounting methodology in 2023, which "*results in an increase in staff costs and a reduction in other operating costs accordingly compared to the determined costs*".
- Significantly lower other operating costs (-49.6%), reflecting changes in cost accounting methodology as detailed above.
- Significantly higher depreciation (+11.3%), partly explained by commissioning of new assets.

- Significantly lower cost of capital (-17.1%), explained by "*delay in projects, mainly related to the new OSL tower system*".

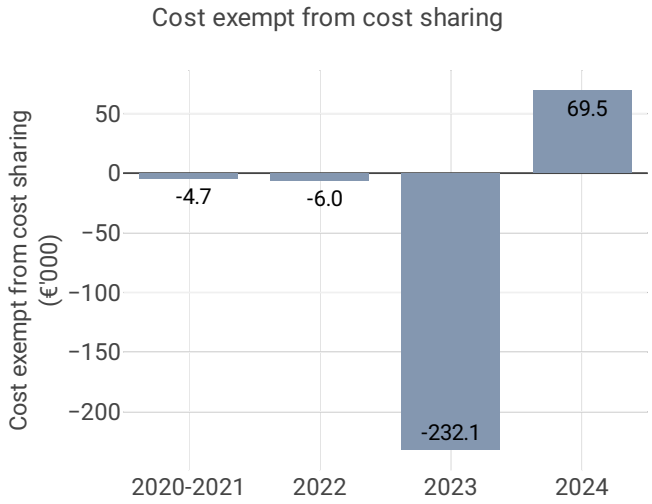
RP3 summary

When considering the whole of RP3 (2020-2024) for Norway terminal charging zone , actual TNSUs are -3.0% lower than planned, while actual costs in real terms are +5.2% higher than the determined costs (some +101.3 MNOK2017 or +10.9 M€2017). As a result, the weighted average actual unit cost over RP3 (2 144.48 NOK2017 or 229.90 €2017) is +8.5% higher than planned in the PP (1 977.36 NOK2017 or 211.99 €2017).

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

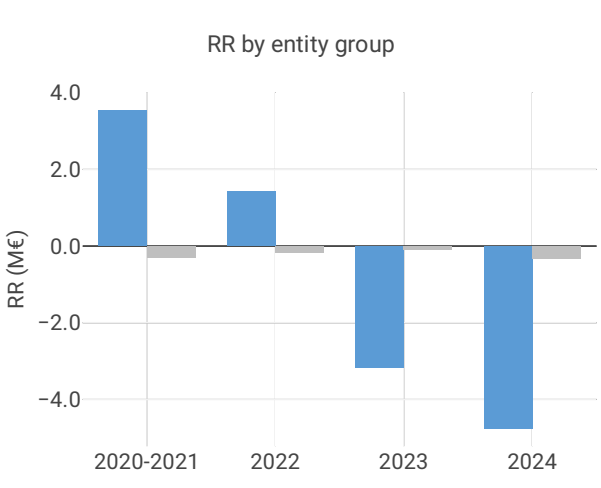


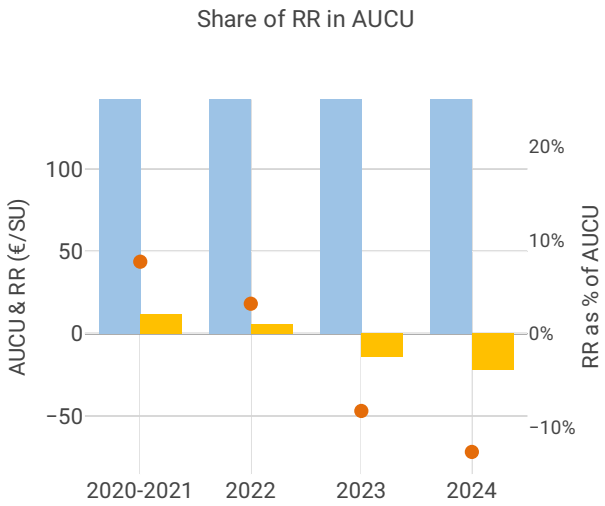
AUCU components (€/SU) – 2024	
Components of the AUCU in 2024	**€/SU**
DUC	**148.81**
Inflation adjustment	14.72
Cost exempt from cost-sharing	0.30
Traffic risk sharing adjustment	11.24
Traffic adj. (costs not TRS)	0.40
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	0.00
Application of lower unit rate	0.00
Total adjustments	26.66
AUCU	**175.46**
AUCU vs. DUC	**+ 17.9%**

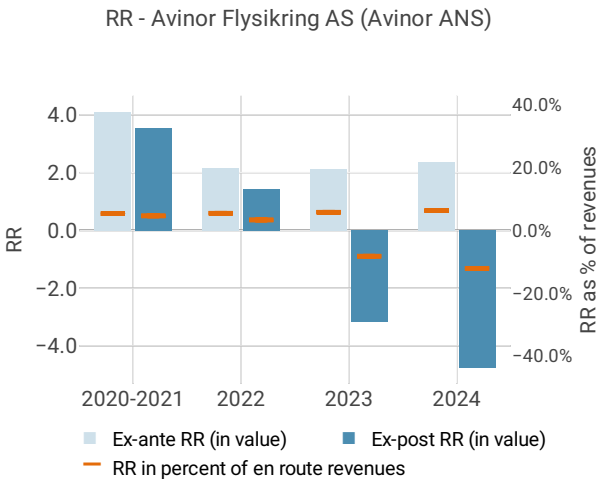


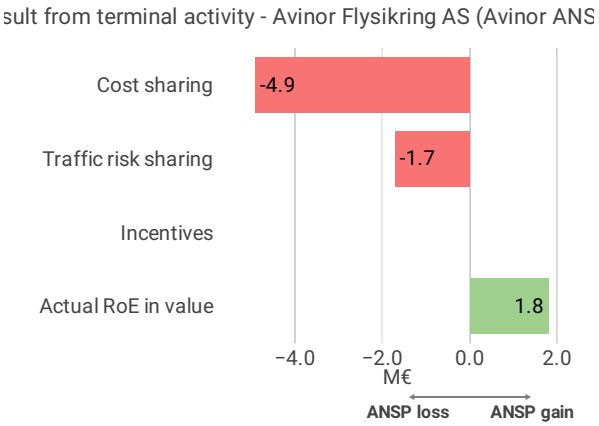
Cost exempt from cost sharing – 2024		
Cost exempt from cost sharing by item - 2024	**€'000**	**€/SU**
New and existing investments	-211.9	-0.92
Competent authorities and qualified entities costs	7.1	0.03
Eurocontrol costs	0.0	0.00
Pension costs	274.3	1.20
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**69.5**	**0.30**

5.3.3 Regulatory result (RR)









Focus on regulatory result

Avinor net gain/loss on activity in the Norway terminal charging zone in the year 2024

Avinor reported a net loss of -75.8 MNOK, as a combination of a loss of -56.6 MNOK arising from the cost sharing mechanism, with a loss of -19.2 MNOK arising from the traffic risk sharing mechanism.

Avinor overall regulatory result (RR) for the terminal activity

Ex-post, the overall RR taking into account the net loss from the terminal activity mentioned above (-75.8 MNOK) and the actual RoE (+20.5 MNOK) amounts to -55.3 MNOK (-12.1% of the terminal revenues). The resulting ex-post rate of return on equity is -27.4%, which is lower than the 10.2% planned in the PP. See also Notes 3 and 4 in Box 10 above.

RP3 summary

When considering the whole of RP3 (2020-2024), Avinor generated a cumulative loss in respect of cost sharing of -119.9 MNOK, as actual total costs for RP3 were higher than planned. The traffic risk sharing mechanism generated a loss of -24.4 MNOK. Adding the actual RoE (+104.5 MNOK over RP3) leads to an overall regulatory result of -39.9 MNOK, which corresponds to an average ex-post rate of return on equity of -3.9% (compared to 10.2% initially planned in the PP). See also Notes 3 and 4 in Box 10 above.

Note 3: 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 4**: Ex-post RR does not take into account the application of lower terminal unit rates as per Art. 29.6 in 2020-2021 and 2022 (loss in terminal revenues for Avinor correspond to -181 MNOK for 2020-21 and -40 MNOK for 2022).