PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Ireland - 2022

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/766 of 13 April 2022

List of ACCs 2
Shannon ACC
Dublin ACC

No of airports in the scope of the performance plan:
- **≥80'K** 1
- **<80'K** 2

Exchange rate (1 EUR=)
2017: 1 EUR
2022: 1 EUR

Share of Union-wide:
- **traffic (TSUs) 2022** 3.9%
- **en route costs 2022** 1.8%

Share en route / terminal costs 2022 79% / 21%

En route charging zone(s)
Ireland

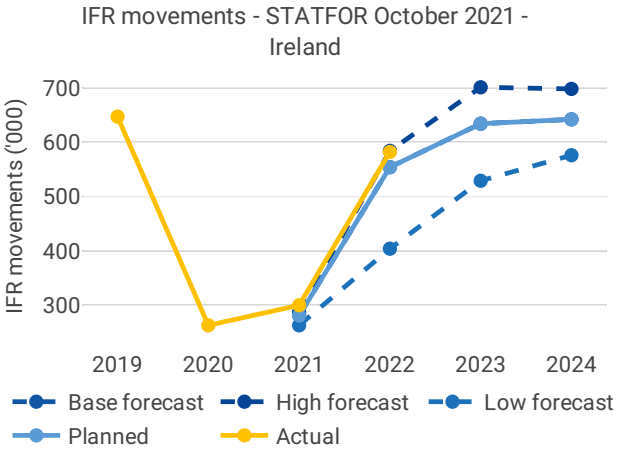
Terminal charging zone(s)
Ireland

Main ANSP
- AirNav Ireland

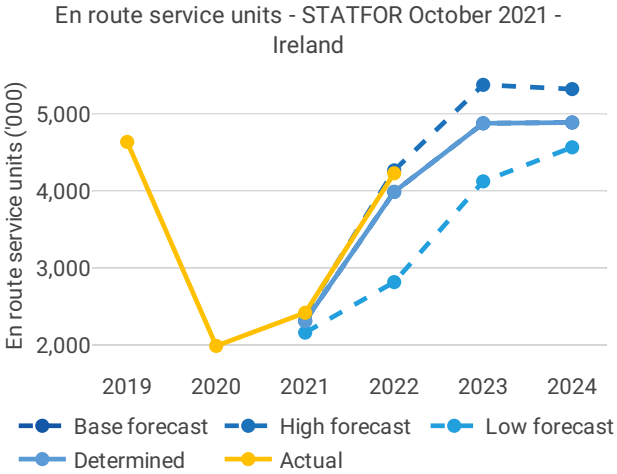
Other ANSPs
–

MET Providers
- Met Eireann Aviation Services Division (ASD)

1.2 Traffic (En route traffic zone)

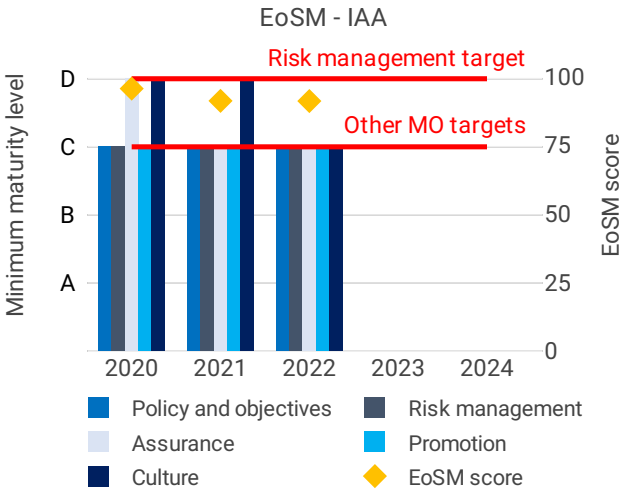


- Ireland recorded 582K actual IFR movements in 2022, +94% compared to 2021 (300K).
- Actual 2022 IFR movements were +5.1% above the plan (554K).
- Actual 2022 IFR movements represent 90% of the actual 2019 level (647K).



- Ireland recorded 4,233K actual en route service units in 2022, +75% compared to 2021 (2,419K).
- Actual 2022 service units were +6.1% above the plan (3,991K).
- Ireland actual 2022 service units represent 91% of the actual 2019 level (4,641K).

1.3 Safety (Main ANSP)



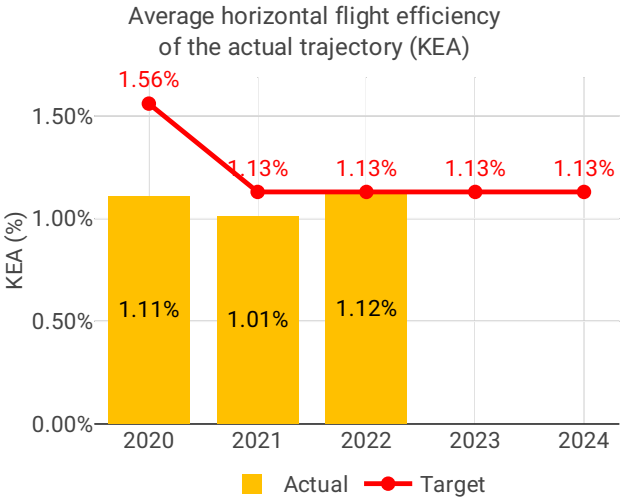
• IAA ANSP achieved the RP3 EoSM targets in four out of five management objectives in 2022, but still needs improvements in safety risk management. The measures identified mainly related to the implementation of Regulation (EU) 2017/373. Minimum maturity level on safety culture decreased between 2021 and 2022 but still achieved the RP3 target.

• Despite doubling the traffic, Ireland recorded a lower rate of separation minima infringements and runway incursions relative to 2021. Both rates are below the Union-wide average.

• The NSA has established associated safety targets and alert thresholds to provide quantifiable measures related to the achieved level of safety as defined by an Acceptable Level of Safety Performance (ALSP) of Ireland.

• IAA ANSP could improve its safety management by implementing automated safety data recording systems.

1.4 Environment (Member State)



• Ireland achieved a KEA performance of 1.12% compared to its target of 1.13% and contributed positively towards achieving the Union-wide target. KEA deteriorated in comparison to 2021 but still the target was met.

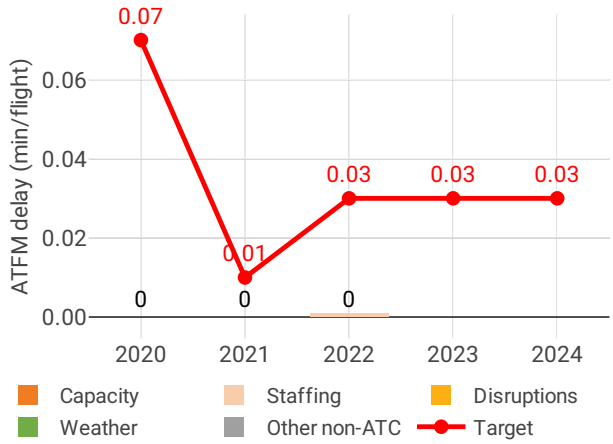
• Both KEP and SCR deteriorated in comparison with 2021. The NSA states that they are currently reviewing the airspace and RADs with neighbouring countries.

• The share of CDO flights decreased by 20.77% compared to 2021.

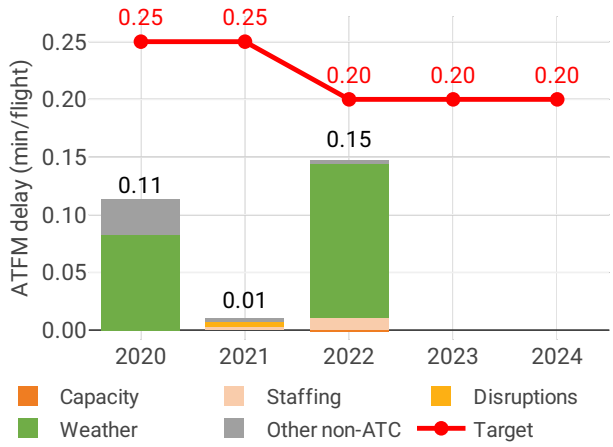
• During 2022, additional time in terminal airspace increased from 0.57 to 2.02 min/flight, while additional taxi out time increased from 1.32 to 5.27 min/flight.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Ireland registered zero minutes of average en route ATFM delay per flight during 2022, thus achieving the local target value of 0.03.

• The average number of IFR movements was 10% below 2019 levels in Ireland in 2022.

• The number of ATCOs in OPS is not expected to change in Dublin and Shannon ACCs by the end of RP3. In Dublin ACC, however, the actual number remained below the 2022 plan, due to higher-than-expected attrition.

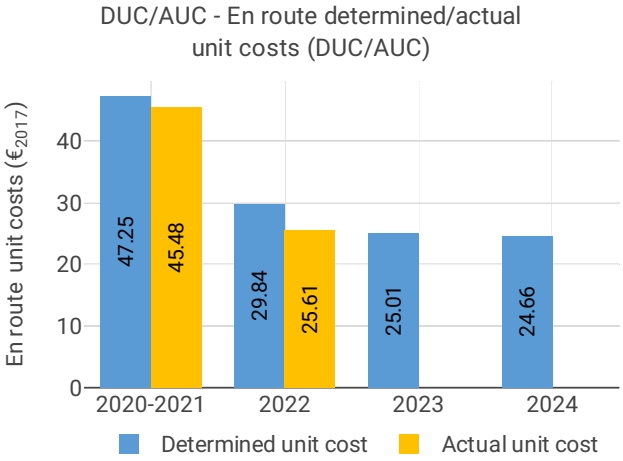
• There were nearly no ATFM delays in Ireland in 2022.

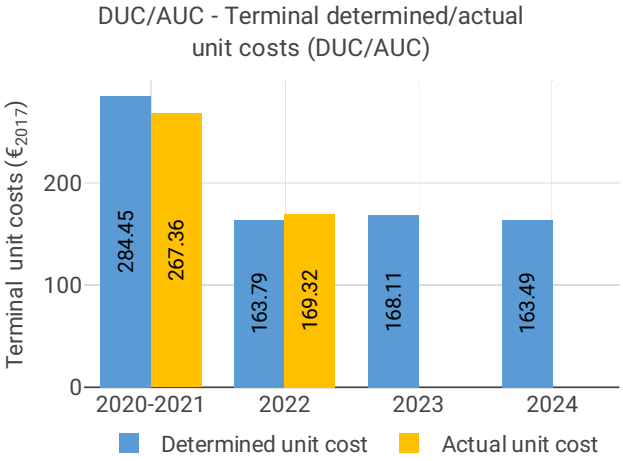
• The share of delayed flights with delays longer than 15 minutes in Ireland increased by 11.25 p.p. compared to 2021 and was lower than 2019 values.

• The yearly total of sector opening hours in Dublin ACC was 18,615 in 2022, showing no significant change compared to 2021. Sector opening hours are equal to 2019 levels. The yearly total of sector opening hours in Shannon ACC was 45,963 in 2022, showing no significant change compared to 2021. Sector opening hours are 0.6% above 2019 levels.

• Dublin ACC registered 11.86 IFR movements per one sector opening hour in 2022, being 13.6% below 2019 levels. Shannon ACC registered 12.27 IFR movements per one sector opening hour in 2022, being 8.2% below 2019 levels.

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





• The en route 2022 actual unit cost of Ireland was 25.58 €2017, 14% lower than the determined unit cost (29.84 €2017). The terminal 2022 actual unit cost was 169.32 €2017, 3.4% higher than the determined unit cost (163.79 €2017).

• The en route 2022 actual service units (4,233K) were 6.1% higher than the determined service units (3,991K).

• The en route 2022 actual total costs were 11 M€2017 (-9.1%) lower than determined, as all cost categories decreased. The total cost reduction was mainly driven by lower other operating costs (-5.5 M€2017, or -13%), caused by the postponement of planned OPEX to prioritise service delivery as traffic increased significantly during the year.

• IAA ANSP spent 16 M€2017 in 2022 related to costs of investments, 18% lower than determined (20 M€2017), as investments have been delayed due to shortages in resource availability and challenges with sourcing contractors and service providers.

• As for the previous monitoring year, the discrepancies regarding costs of investments are significant. The PRB invites the NSA to analyse the discrepancies, identify their reasons, and request the Member State to take immediate, adequate, and proportionate action to ensure the implementation of the investment plans to avoid future capacity gaps.

•The en route actual unit cost incurred by users in 2022 was 30.93€, while the terminal actual unit cost incurred by users was 164.74€.

2 SAFETY - IRELAND

2.1 PRB monitoring

• IAA ANSP achieved the RP3 EoSM targets in four out of five management objectives in 2022, but still needs improvements in safety risk management. The measures identified mainly related to the implementation of Regulation (EU) 2017/373. Minimum maturity level on safety culture decreased between 2021 and 2022 but still achieved the RP3 target.

• Despite doubling the traffic, Ireland recorded a lower rate of separation minima infringements and runway incursions relative to 2021. Both rates are below the Union-wide average.

• The NSA has established associated safety targets and alert thresholds to provide quantifiable measures related to the achieved level of safety as defined by an Acceptable Level of Safety Performance (ALSP) of Ireland.

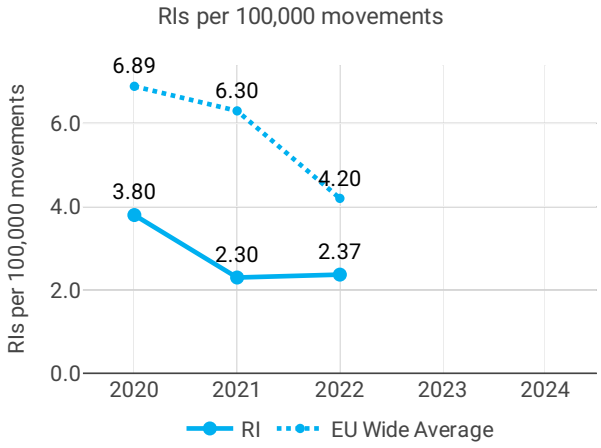
• IAA ANSP could improve its safety management by implementing automated safety data recording systems.

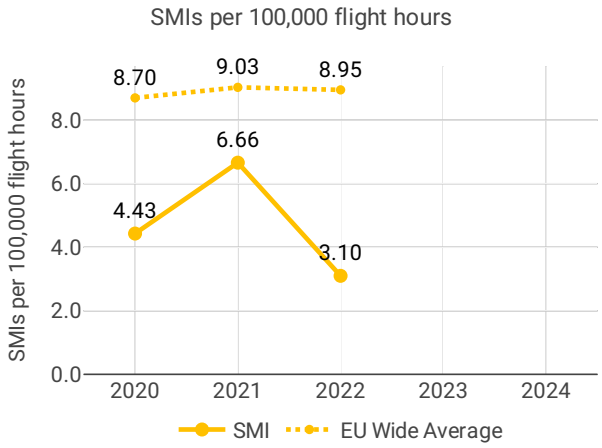
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

Focus on EoSM

Four out of five EoSM components of the ANSP meet the RP3 target level. Only "Safety Risk Management" is below RP3 target level, but the ANSP only need to improve in a single question to achieve RP3 targets. Over 2022, maturity has decreased for one question, which degraded the "Safety Culture" component from level D to C.

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





3 ENVIRONMENT - IRELAND

3.1 PRB monitoring

• Ireland achieved a KEA performance of 1.12% compared to its target of 1.13% and contributed positively towards achieving the Union-wide target. KEA deteriorated in comparison to 2021 but still the target was met.

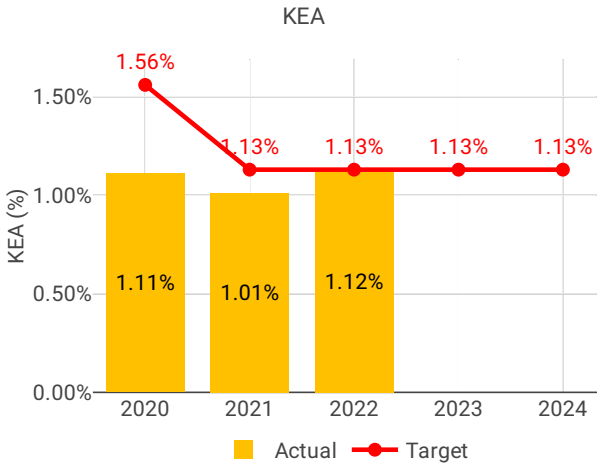
• Both KEP and SCR deteriorated in comparison with 2021. The NSA states that they are currently reviewing the airspace and RADs with neighbouring countries.

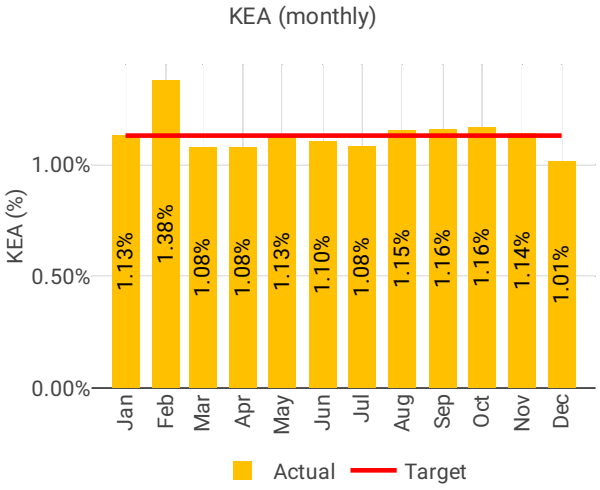
• The share of CDO flights decreased by 20.77% compared to 2021.

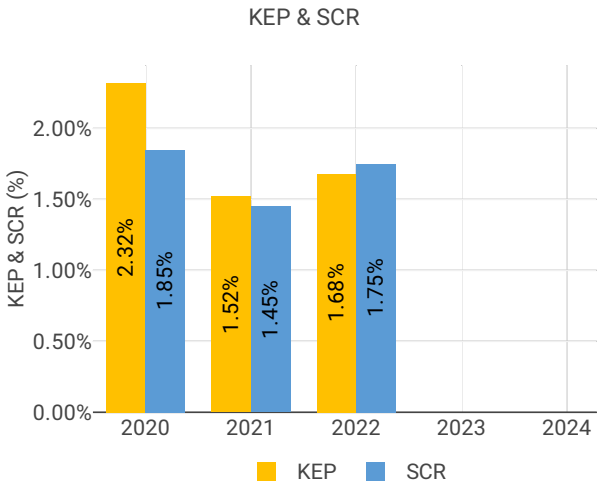
• During 2022, additional time in terminal airspace increased from 0.57 to 2.02 min/flight, while additional taxi out time increased from 1.32 to 5.27 min/flight.

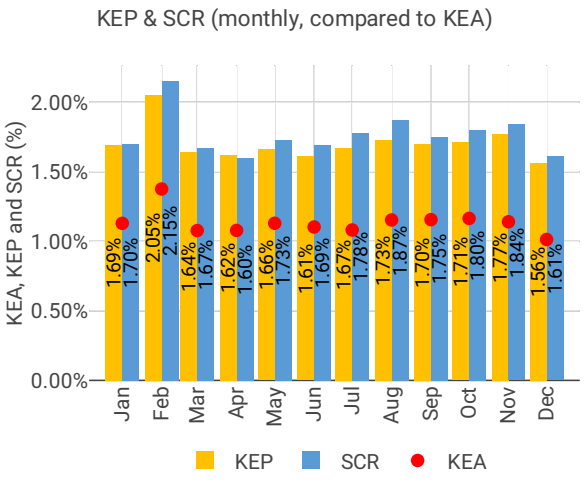
3.2 En route performance

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



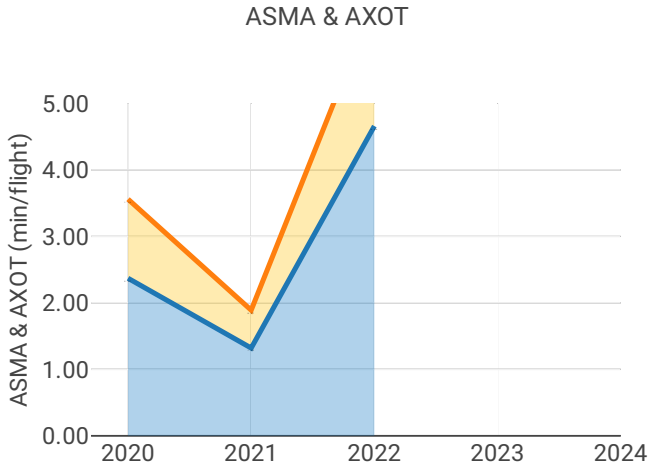


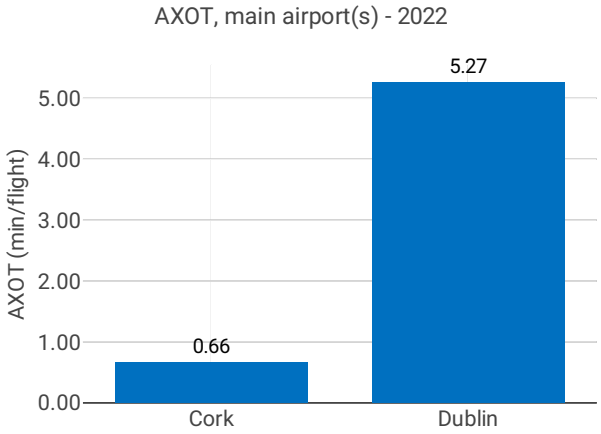


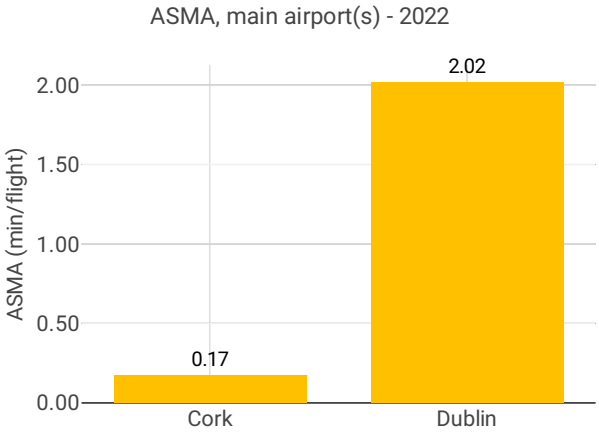


3.3 Terminal performance

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







Focus on ASMA & AXOT

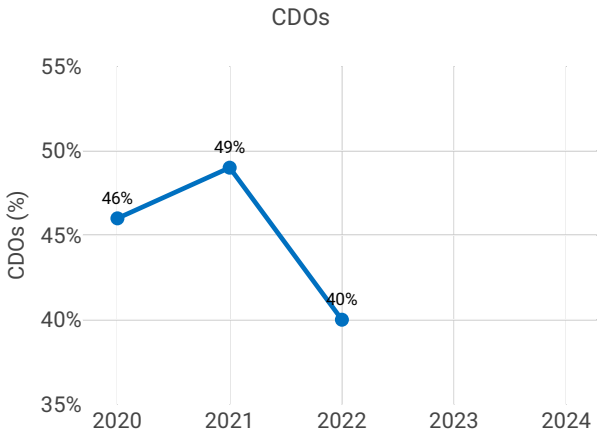
AXOT

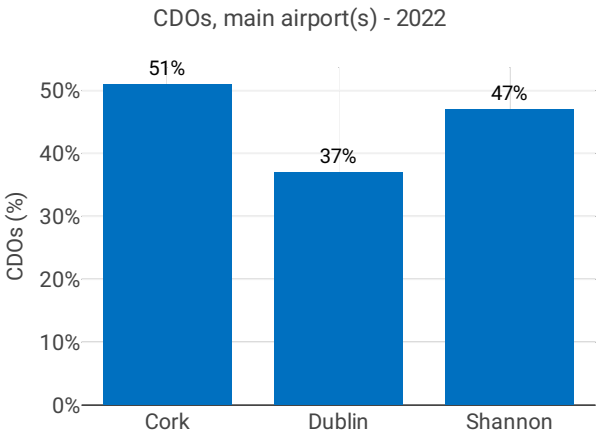
Additional taxi-out times at Dublin increased by 269% in 2022 (EIDW; 2019: 7.1 min/dep.; 2020: 2.67 min/dep.; 2021: 1.43 min/dep.; 2022: 5.27 min/dep.) resulting in the highest additional taxi-out value observed in 2022 in the SES monitored airports.
According to the Irish monitoring report: *The ground infrastructure at Dublin airport is currently under redevelopment. Dublin's new runway 28R/10L with associated taxiway structure became operational in August 2022.*

ASMA

Additional ASMA times at Dublin, in the same lines as the additional taxi-out times, increased by 248% in 2022 (EIDW; 2019: 3.29 min/arr.; 2020: 1.24 min/arr. 2021: 0.58 min/arr.; 2022: 2.02 min/arr.) resulting in the highest additional ASMA value observed in 2022 in the SES monitored airports.
According to the Irish monitoring report: *Dublin Airspace review is due to be completed in 2023. The ANSP and NSA meet regularly to discuss performance. The ANSP was actively involved in the PRC, ASMA and Additional Taxi Time Working Group, the ANSP is currently reviewing the revised results.*

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





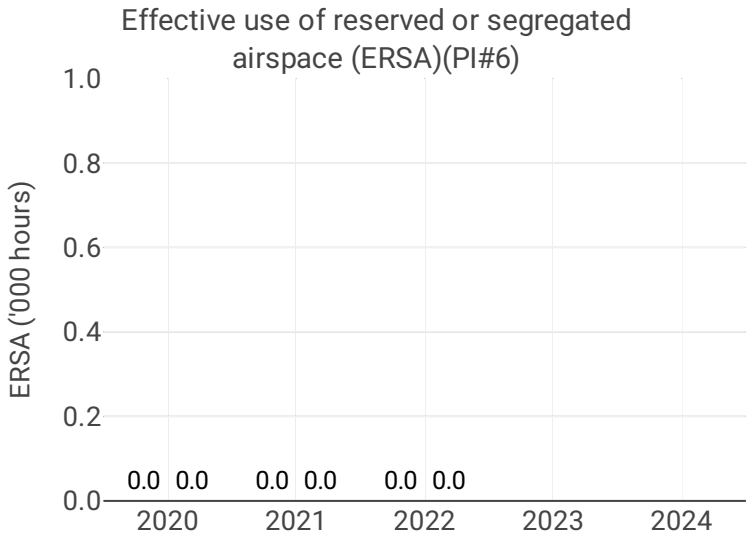
Focus CDOs

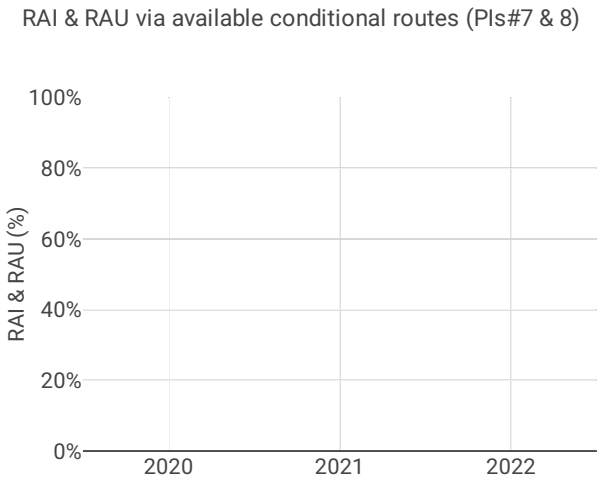
The share of CDO flights increased at Cork (EICK) by 9.6 percentage points to 51.0% and at Shannon by 1.2 percentage points to 46.8%. Dublin had a decrease of 12.7 percentage points to 37.1%. Nevertheless, the share of CDO flights at all airports is well above the overall RP3 value in 2022 (29.0%).
Dublin had a significant decrease of the monthly values as from April while the monthly values for Cork and Shannon stayed more stable throughout the year.According to the Irish monitoring report: *Low level airspace review to incorporate EICK (Cork) and EINN (Shannon) due 2023. Dublin Airspace review is due to be completed in the latter part of 2023 (CDO for Dublin operations restricted by neighbouring airspace structures).*

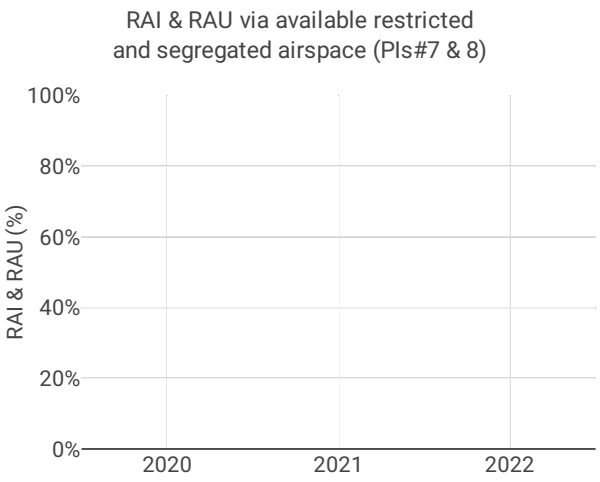
Airport level

	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
Cork	0.73	0.85	0.66	NA	NA	0.37	0.26	0.17	NA	NA	52%	41%	51%	NA	NA
Dublin	2.67	1.43	5.27	NA	NA	1.24	0.58	2.02	NA	NA	46%	50%	37%	NA	NA
Shannon	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42%	46%	47%	NA	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

All military airspace is flight plannable and direct routes are given through activated military airspace as routine.
The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on capacity at Dublin resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity
In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.

Military - related measures implemented or planned to improve capacity

The NSA meets regularly with the Military through the Standing Civil Military Air Navigation Committee (StaCMAN)to discuss FUA implementation and any associated issues.
Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

Initiatives implemented or planned to improve PI#6

All military airspace is flight plannable and direct routes are given through activated military airspace as routine.
The implementation of Point Merge at Dublin Airport was effected in a manner to ensure there was no impact on Environment at Dublin airport resulting from the military activity. Likewise the FRA project in 2009 also required no filing differences for military activity.
In addition the Military airspace even though proximate to Dublin Airport has no impact on the capacity of Dublin airport and this was confirmed in 2008 when differential flow rates were no longer required for military airspace activity.
Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

Initiatives implemented or planned to improve PI#7

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Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

Initiatives implemented or planned to improve PI#8

All military airspace is flight plannable and direct routes are given through activated military airspace as routine.
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Full ASM management is reliant upon the rollout of LARA. Ireland reports c.75% complete pending full LARA application. A full record of the hours of activation will be available through LARA and will be sent to NM.

4 CAPACITY - IRELAND

4.1 PRB monitoring

• Ireland registered zero minutes of average en route ATFM delay per flight during 2022, thus achieving the local target value of 0.03.

• The average number of IFR movements was 10% below 2019 levels in Ireland in 2022.

• The number of ATCOs in OPS is not expected to change in Dublin and Shannon ACCs by the end of RP3. In Dublin ACC, however, the actual number remained below the 2022 plan, due to higher-than-expected attrition.

• There were nearly no ATFM delays in Ireland in 2022.

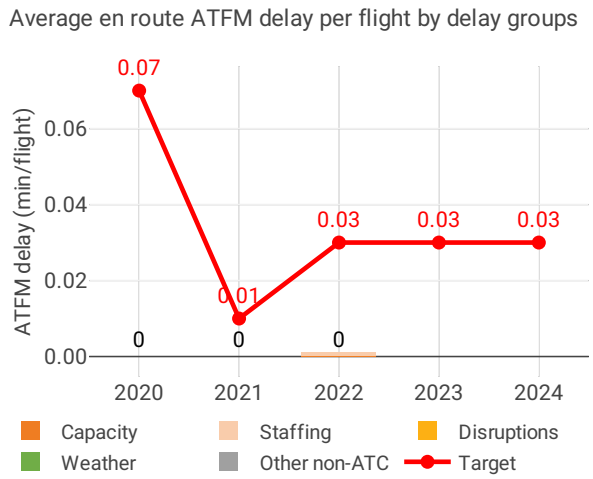
• The share of delayed flights with delays longer than 15 minutes in Ireland increased by 11.25 p.p. compared to 2021 and was lower than 2019 values.

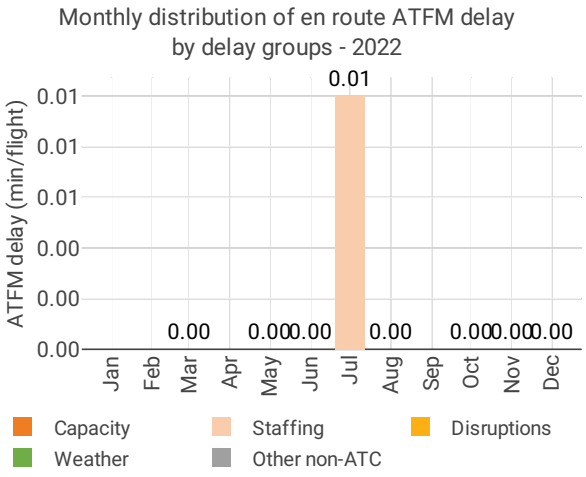
• The yearly total of sector opening hours in Dublin ACC was 18,615 in 2022, showing no significant change compared to 2021. Sector opening hours are equal to 2019 levels. The yearly total of sector opening hours in Shannon ACC was 45,963 in 2022, showing no significant change compared to 2021. Sector opening hours are 0.6% above 2019 levels.

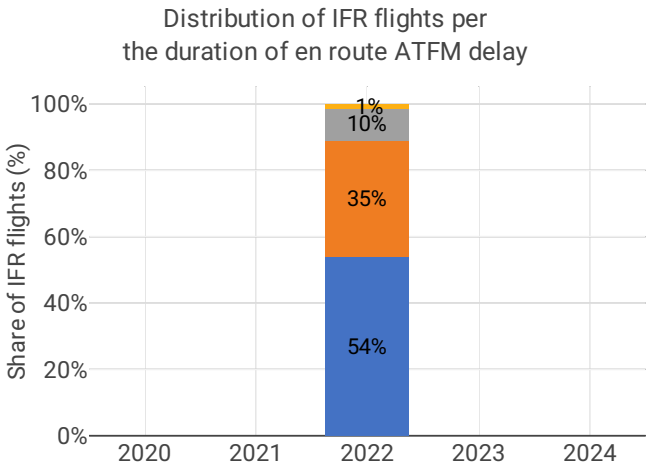
• Dublin ACC registered 11.86 IFR movements per one sector opening hour in 2022, being 13.6% below 2019 levels. Shannon ACC registered 12.27 IFR movements per one sector opening hour in 2022, being 8.2% below 2019 levels.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Ireland experienced an increase in traffic from 300k flights in 2021, to 582k flights in 2022, again with practically zero ATFM delay. Traffic levels were still lower than the 647k flights in 2019.

NSA's assessment of capacity performance

In 2022, there was a sharp recovery in traffic relative to the previous two years, slightly exceeding the Performance Plan Forecasts. Notwithstanding this increase in traffic, capacity performance remained strong relative to the annual targets'
For En-Route Operations, Ireland had 27 minutes delay due ATC Capacity and 576 minutes due ATC staffing.

Monitoring process for capacity performance

The ANSP monitors on a daily basis any ATFM delay ensuring causes are identified, the results of which are reported weekly to Senior Management. The ANSP and NSA meet regularly to discuss the peformance indicators.

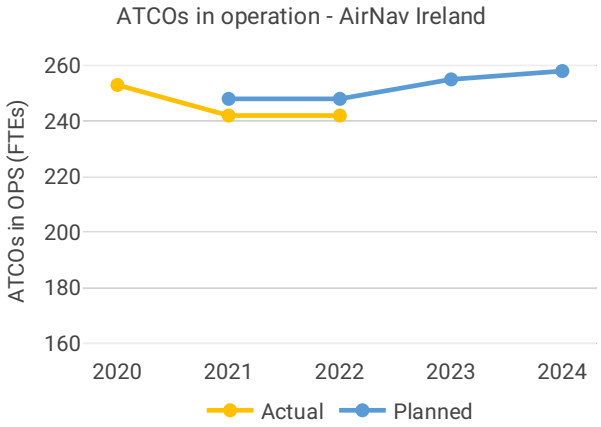
Capacity planning

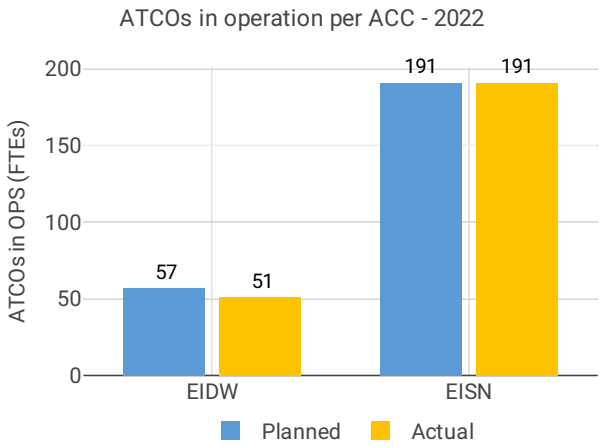
The ANSP provides input to the Network Operations Report. The ANSP sends the capacity plan to NM for the outlook period on a weekly basis. The Network Manager in conjunction with the ANSP provides a traffic expectation at network and ACC level for the outlook period. The Network manager assesses the capacity plans which are then published on the Weekly NOP.
Capacity Planning starts in Q2 for the following period (2024/2028).
The opening schemes are examined in July, and capacity baselines checked and confirmed.
In Q4, Capacity requirements discussed with Eurocontrol resulting in the Capacity Plans published for 2024-2028.

Application of Corrective Measures for Capacity (if applicable)

No data available

4.2.2 Other indicators



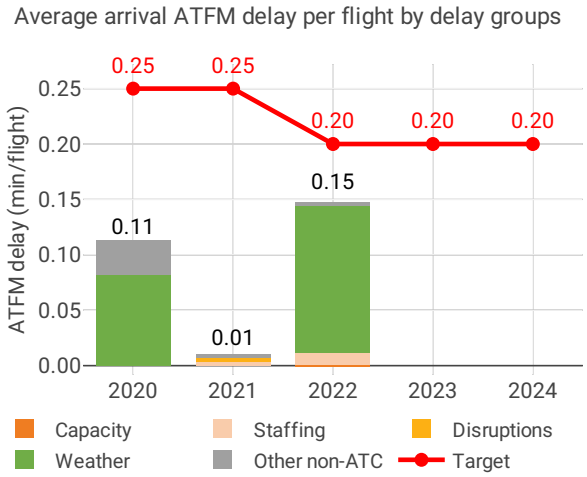


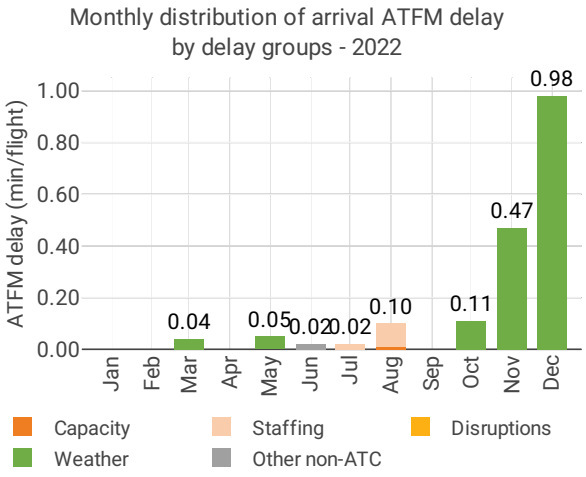
Focus on ATCOs in operations

It should be noted that the NSA's En Route ATCO forecast used for the Performance Plan did not forecast ATCO requirements by ACC, ie we forecast an overall En Route ATCO requirement.
The ACC split provided was thus informed by a historic breakdown, which will be reviewed in 2024 as part of the RP4 process. We noted that the actual staffing by ACC remains at the discretion of the ANSP. ATCOs in 2022 were overall slightly below planned levels due to higher than expected attrition.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





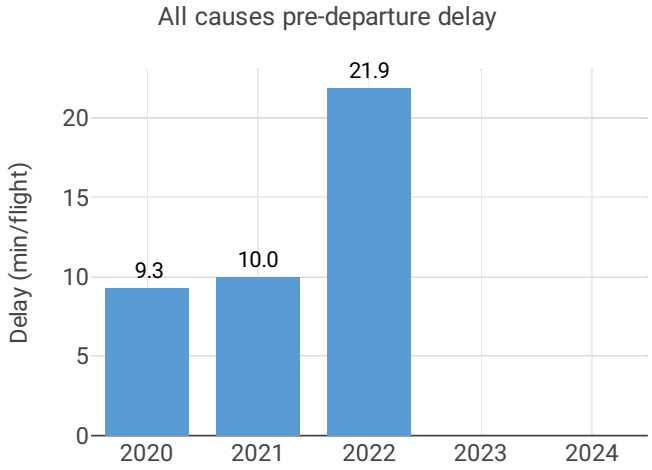
Focus on arrival ATFM delay

Ireland includes 3 airports under RP3 monitoring. However, in accordance with IR (EU) 2019/317 and the traffic figures, only Dublin must be monitored for pre-departure delays.
The Airport Operator Data Flow is fully established at Dublin and the monitoring of pre-departure delays 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 these Irish airports in 2022 was still 12% lower with respect to 2019, however traffic levels were 1.3 times the levels of 2021.
Average arrival ATFM delays in 2022 was 0.15 min/arr, compared to 0.01 min/arr in 2021.
ATFM slot adherence has deteriorated (2022: 96.2%; 2021: 97.6%).

The national average arrival ATFM delay at Irish airports in 2021 was 0.15 min/arr.
No delays were observed in 2022 at Shannon (EINN) and Cork (EICK)
Dublin (EIDW: 2019: 0.17 min/arr.; 2020: 0.14 min/arr.; 2021: 0.01 min/arr.; 2022: 0.17 min/arr.) registered the highest delays in November and December, which were attributed to weather (91% of the total annual delays)According to the Irish monitoring report: *For Terminal Operations, there were 132,489 departures with ATFM delay of 18,441 mins. Average ATFM arrival delay of 0.14.*
*This can be categorised as ATC Capacity (81 mins), Aerodrome Capacity (195 mins), ATC Staffing, (1349) and the largest delay due to weather (16,816 minutes).*3. Arrival ATFM Delay – National TargetThe national target on arrival ATFM delay in 2022 was met.

All three airports showed adherence above 96% and the national average was 96.2%. With regard to the 3.8% of flights that did not adhere, 2.3% was early and 1.5% was late.
According to the Irish monitoring report: *ATFM SLOT adherence is continuously monitored and the ANSP reports to unit management on a weekly basis. ATFM Compliance is discussed regularly with the NSA, all units above 90%.*

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
Cork	NA	0.01	NA	NA	97.9%	96.9%	96.5%	NA%
Dublin	0.14	0.01	0.17	NA	96.6%	97.7%	96.2%	NA%
Shannon	NA	0.02	NA	NA	98.3%	95.7%	96.0%	NA%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Cork	NA	NA	NA	NA	15.6	19.5	15.6	NA
Dublin	0.26	NA	0.47	NA	7.1	6.9	23.1	NA
Shannon	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 Dublin (the only Irish airport subject to monitoring of this indicator).
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 Dublin was above 40% for most months since April 2020, preventing the calculation of this indicator since then. Dublin had proper reporting before April 2020 and in 2022 the reporting has slightly improved, but still reaching above 40% of unidentified delay most months.

ATC pre-departure delay

The total (all causes) delay in the actual off block time at Dublin slightly increased drastically in 2022 (EIDW: 2020: 7.08 min/dep.; 2021: 6.88 min/dep.; 2022: 23.07 min/dep.) . The highest delays per flight were observed in June, July and December, when they averaged more than 30 min/dep.
According to the Irish monitoring report: *There appears to be inconsistencies in the measurement of this metric.*

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 - IRELAND

5.1 PRB monitoring

• The en route 2022 actual unit cost of Ireland was 25.58 €2017, 14% lower than the determined unit cost (29.84 €2017). The terminal 2022 actual unit cost was 169.32 €2017, 3.4% higher than the determined unit cost (163.79 €2017).

• The en route 2022 actual service units (4,233K) were 6.1% higher than the determined service units (3,991K).

• The en route 2022 actual total costs were 11 M€2017 (-9.1%) lower than determined, as all cost categories decreased. The total cost reduction was mainly driven by lower other operating costs (-5.5 M€2017, or -13%), caused by the postponement of planned OPEX to prioritise service delivery as traffic increased significantly during the year.

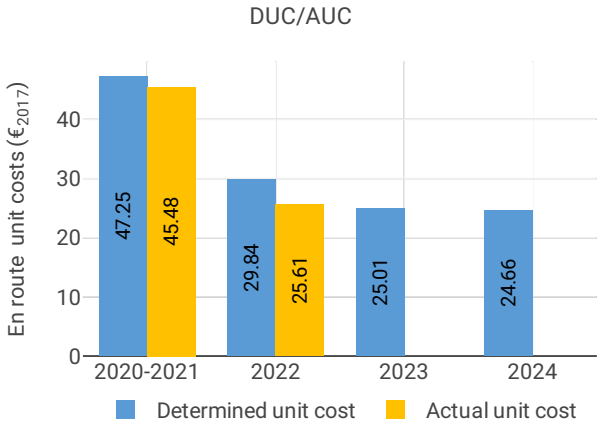
• IAA ANSP spent 16 M€2017 in 2022 related to costs of investments, 18% lower than determined (20 M€2017), as investments have been delayed due to shortages in resource availability and challenges with sourcing contractors and service providers.

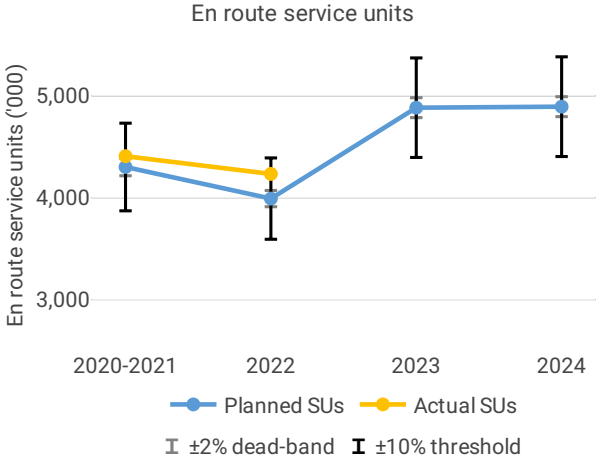
• As for the previous monitoring year, the discrepancies regarding costs of investments are significant. The PRB invites the NSA to analyse the discrepancies, identify their reasons, and request the Member State to take immediate, adequate, and proportionate action to ensure the implementation of the investment plans to avoid future capacity gaps.

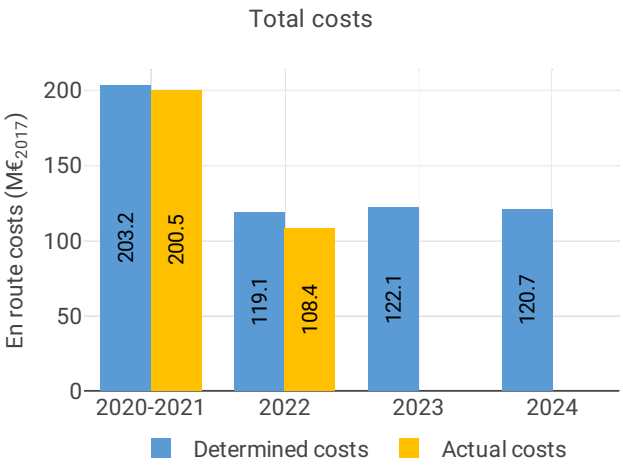
•The en route actual unit cost incurred by users in 2022 was 30.93€, while the terminal actual unit cost incurred by users was 164.74€.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

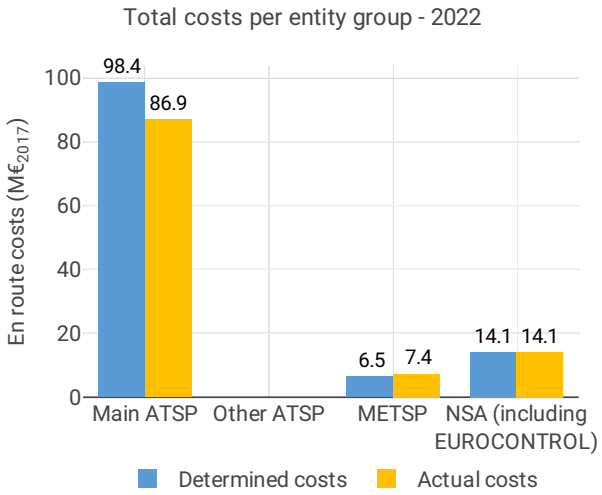


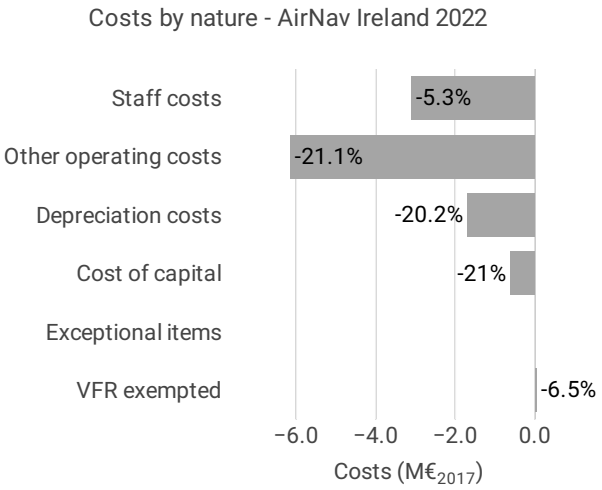




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	205	119	NA	NA
Determined costs	207	124	129	130
Difference costs	-2	-5	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.9%	2.0%	2.0%
Determined inflation index	NA	105.2	107.3	109.4
Actual inflation rate	NA	8.1%	NA	NA
Actual inflation index	NA	112.5	NA	NA
Difference inflation index (p.p.)	NA	+7.3	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the en route AUC was -14.3% (or -4.26 €2017) lower than the planned DUC. This results from the combination of significantly lower than planned en route costs in real terms (-9.1%, or -10.8 M€2017) and significantly higher than planned TSUs (+6.1%). It should be noted that actual inflation index in 2022 was +7.3 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (+6.1%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional en route revenues is therefore shared between the ANSP and the airspace users, with the ANSP (IAA) retaining an amount of +3.0 M€2017.

En route costs by entity

Actual real en route costs are -9.1% (-10.8 M€2017) lower than planned. This is the result of lower costs for the main ANSP, IAA (-11.7%, or -11.6 M€2017) and the NSA/EUROCONTROL (-0.7%, or -0.1 M€2017) and higher costs for the MET service provider (+13.1%, or +0.9 M€2017).

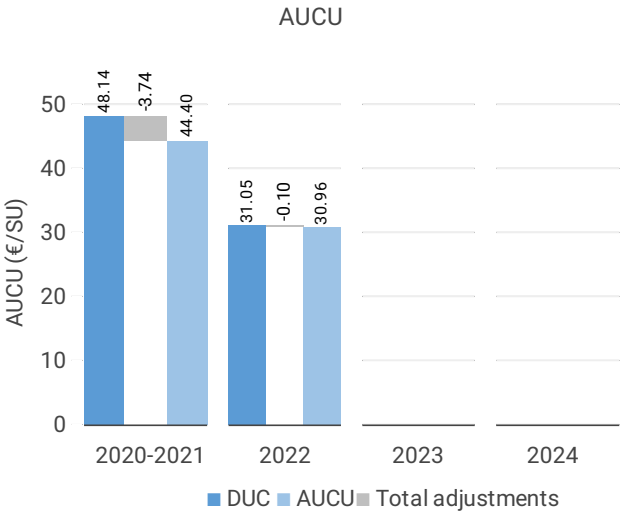
En route costs for the main ANSP at charging zone level

Significantly lower than planned en route costs in real terms for IAA in 2022 (-11.7%, or -11.6 M€2017) result from:

- Lower staff costs (-5.3%), mainly due to inflation index impact (+7.3 p.p.) since in nominal terms staff costs are higher than planned by +1.2% reflecting higher costs of overtime.
- Significantly lower other operating costs (-21.1%), partially reflecting cost deferrals in favour of service

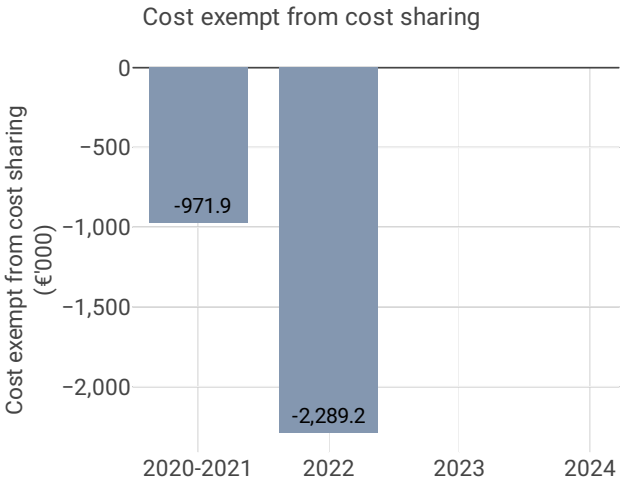
delivery. This result is also impacted by higher actual inflation index (+7.3 p.p.).
- Significantly lower depreciation (-20.2%), reflecting delays in the implementation of the investment programme due in part to staff shortages and pandemic related supply issues.
- Significantly lower cost of capital (-21.0%) resulting from the delays in investments as outlined above.
- Lower deduction for VFR exempted flights (-6.5%) in real terms, while these costs were in line with the plan when expressed in nominal terms.

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



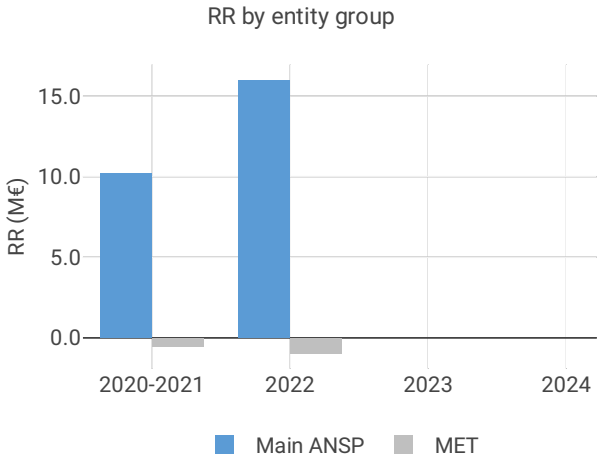
AUCU components (€/SU) – 2022

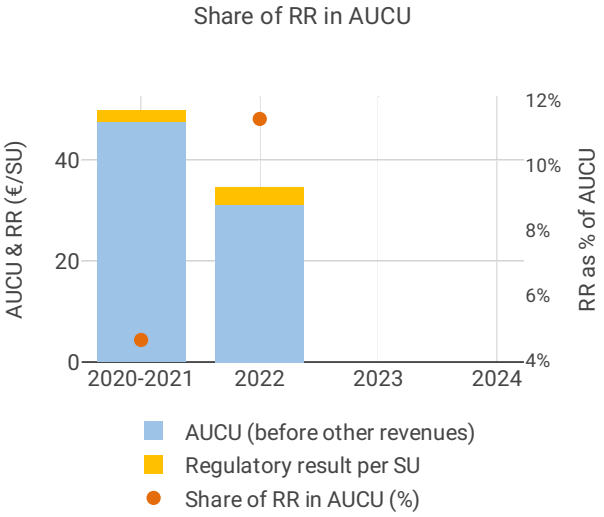
Components of the AUCU in 2022	€/SU
DUC	**31.05**
Inflation adjustment	1.60
Cost exempt from cost-sharing	-0.54
Traffic risk sharing adjustment	-0.69
Traffic adj. (costs not TRS)	-0.30
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.16
Application of lower unit rate	0.00
Total adjustments	-0.10
AUCU	**30.96**
AUCU vs. DUC	**-0.3%**

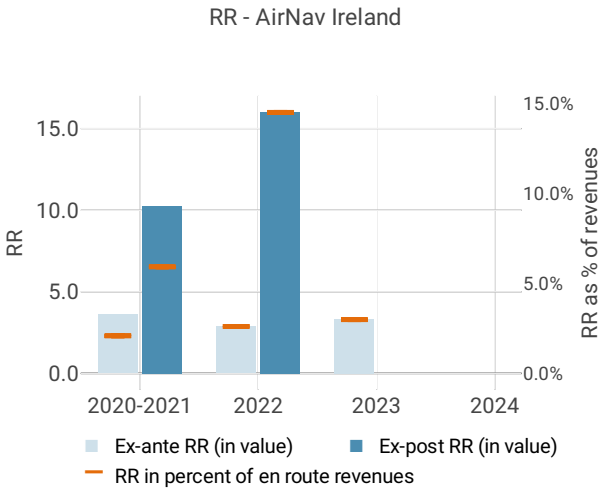


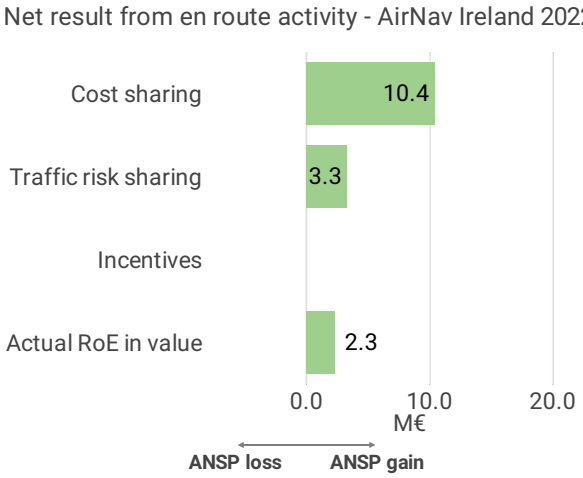
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-2,293.4	-0.54
Competent authorities and qualified entities costs	-82.9	-0.02
Eurocontrol costs	87.1	0.02
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-2,289.2**	**-0.54**

5.2.3 Regulatory result (RR)









Focus on regulatory result

IAA net gain on activity in the Ireland en route charging zone in the year 2022

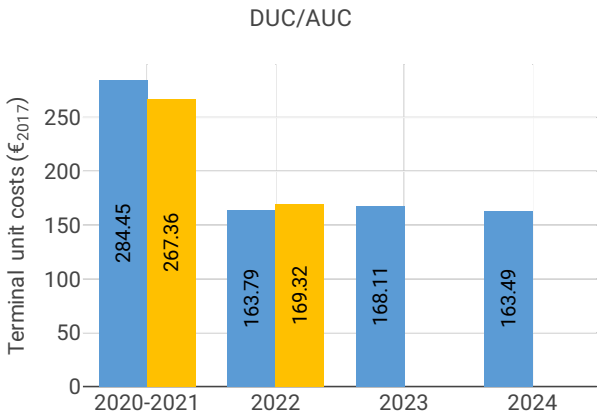
IAA reported a net gain of +13.7 M€, as a combination of a gain of +10.4 M€ arising from the cost sharing mechanism, with a gain of +3.3 M€ arising from the traffic risk sharing mechanism.

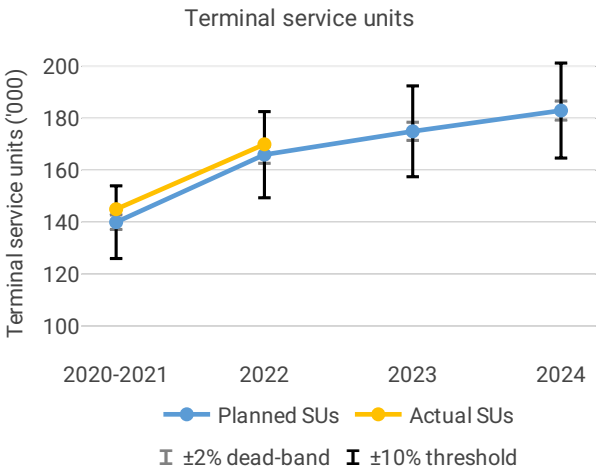
IAA overall regulatory results (RR) for the en route activity

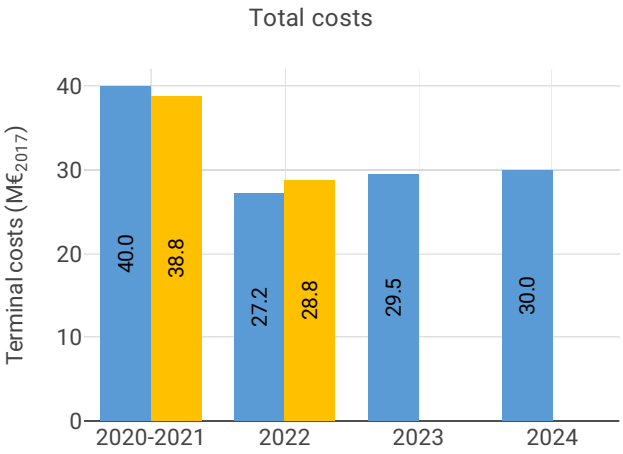
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+13.7 M€) and the actual RoE (+2.3 M€) amounts to +16.0 M€ (14.5% of the en route revenues). The resulting ex-post rate of return on equity is 38.9%, which is significantly higher than the 5.5% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

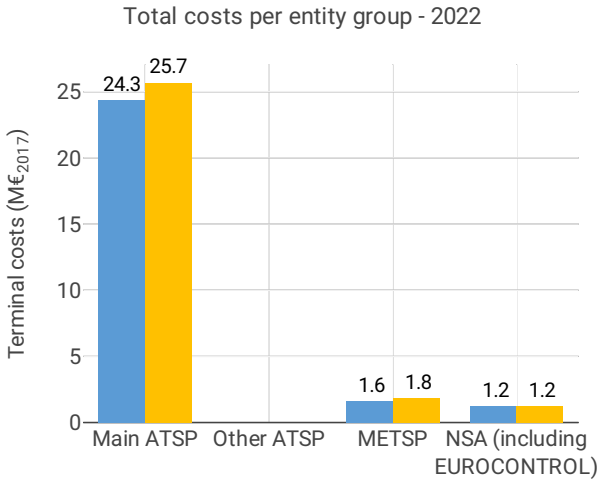


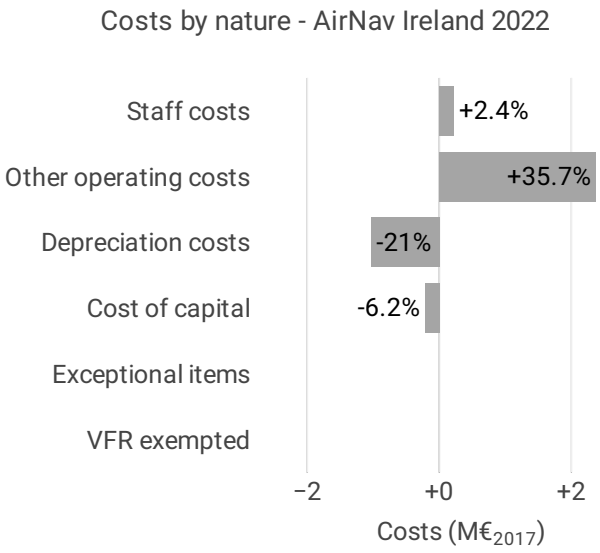




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	40	31	NA	NA
Determined costs	41	28	31	32
Difference costs	-1	3	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	1.9%	2.0%	2.0%
Determined inflation index	NA	105.2	107.3	109.4
Actual inflation rate	NA	8.1%	NA	NA
Actual inflation index	NA	112.5	NA	NA
Difference inflation index (p.p.)	NA	+7.3	NA	NA





Focus on unit cost

AUC vs. DUC

In 2022, the terminal AUC was +3.4% (or +5.54 €2017) higher than the planned DUC. This results from the combination of significantly higher than planned terminal costs in real terms (+5.7%, or +1.6 M€2017) and

higher than planned TNSUs (+2.3%). It should be noted that actual inflation index in 2022 was +7.3 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (+2.3%) falls outside the ±2% dead band, but does not exceed the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting gain of additional terminal revenues is therefore shared between the ANSP and the airspace users, with the ANSP (IAA) retaining an amount of +0.5 M€2017.

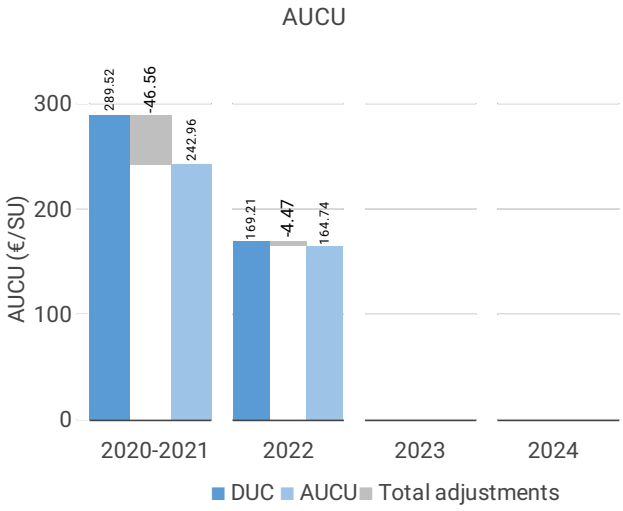
Terminal costs by entity

Actual real terminal costs are +5.7% (+1.6 M€2017) higher than planned. This is the result of higher costs for the main ANSP, IAA (+5.5%, or +1.3 M€2017), the MET service provider (+13.0%, or +0.2 M€2017) and the NSA (+0.5%).

Terminal costs for the main ANSP at charging zone level

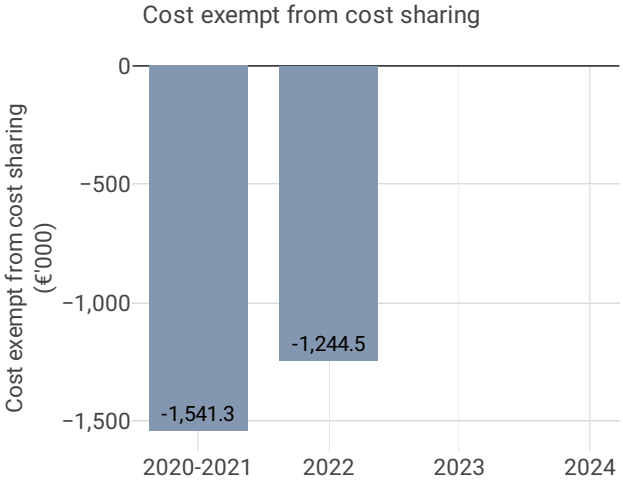
Higher than planned terminal cost in real terms for IAA in 2022 (+5.5%, or +1.3 M€2017) results from:
- Higher staff costs (+2.4%) primarily due to higher costs of overtime.
- Significantly higher other operating costs (+35.7%) reflecting a recognition of impairment loss (some 4.7 M€) for assets and installations in progress.
- Significantly lower depreciation (-21.0%), reflecting delays in the implementation of the investment programme due to staff shortages as well as knock on impacts from COVID-19 and challenges with sourcing contractors.
- Significantly lower cost of capital (-6.2%).

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



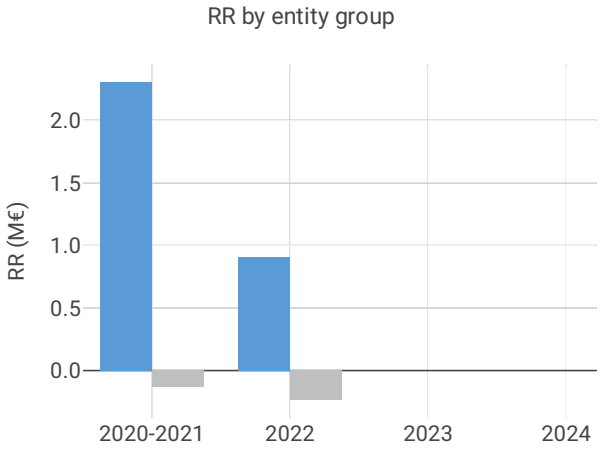
AUCU components (€/SU) – 2022

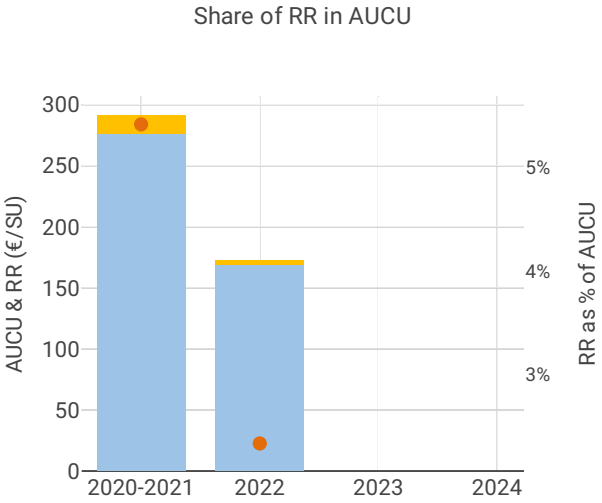
Components of the AUCU in 2022	€/SU
DUC	**169.21**
Inflation adjustment	7.43
Cost exempt from cost-sharing	-7.32
Traffic risk sharing adjustment	-0.29
Traffic adj. (costs not TRS)	-0.40
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-3.90
Application of lower unit rate	0.00
Total adjustments	-4.47
AUCU	**164.74**
AUCU vs. DUC	**-2.6%**

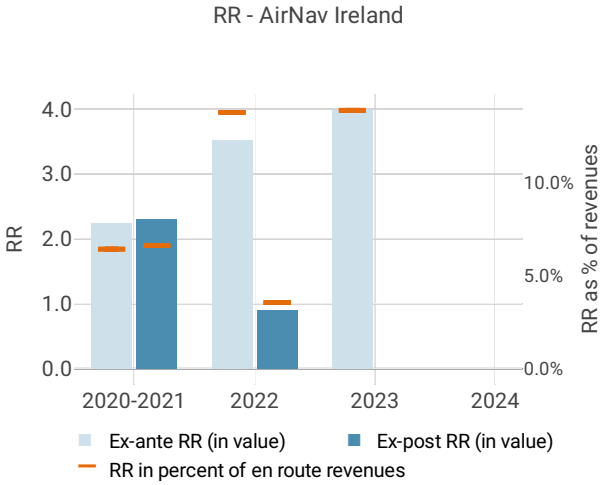


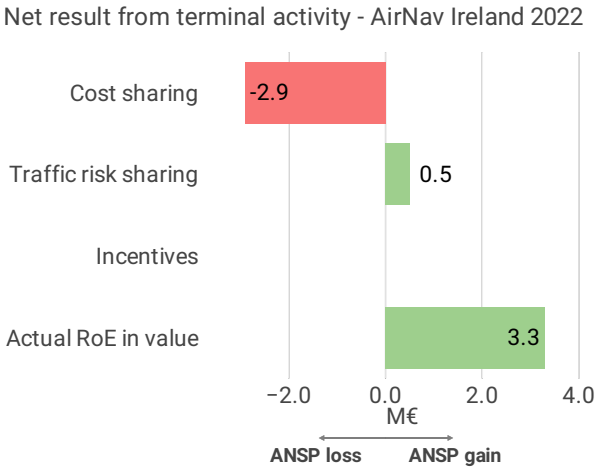
Cost exempt from cost sharing by item - 2022	€'000	€/SU
New and existing investments	-1,250.6	-7.36
Competent authorities and qualified entities costs	6.1	0.04
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-1,244.5**	**-7.32**

5.3.3 Regulatory result (RR)









Focus on regulatory result

IAA net gain on activity in the Ireland terminal charging zone in the year 2022

IAA reported a net loss of -2.4 M€, as a combination of a loss of -2.9 M€ arising from the cost sharing mechanism and a gain of +0.5 M€ arising from the traffic risk sharing mechanism.

IAA 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 (-2.4 M€) and the actual RoE (+3.3 M€) amounts to +0.9 M€ (3.5% of the terminal revenues). The resulting ex-post rate of return on equity is 1.5%, which is lower than the 5.5% planned in the PP.