PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Hungary - 2021

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/775 of 13 April 2022

List of ACCs 1
Budapest ACC

No of airports in the scope of the performance plan:
- **≥80'K** 1
- **<80'K** 0

Exchange rate (1 EUR=)
2017: 308.993 HUF
2021: 358.113 HUF

Share of Union-wide:
- **traffic (TSUs) 2021** 2.6%
- **en route costs 2021** 1.5%

Share en route / terminal costs 2021 85% / 15%

En route charging zone(s)
Hungary

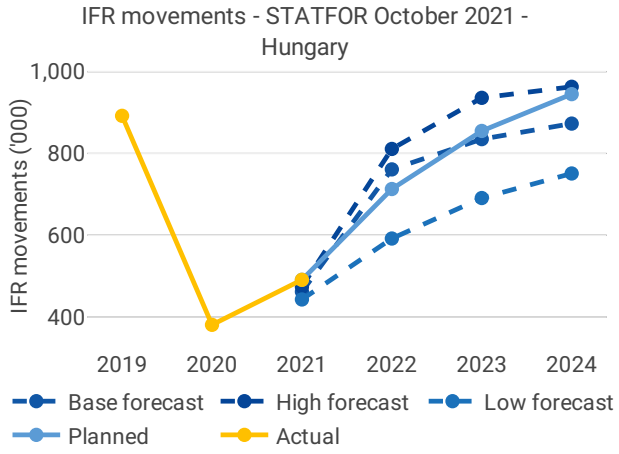
Terminal charging zone(s)
Hungary

Main ANSP
- HungaroControl (EC)

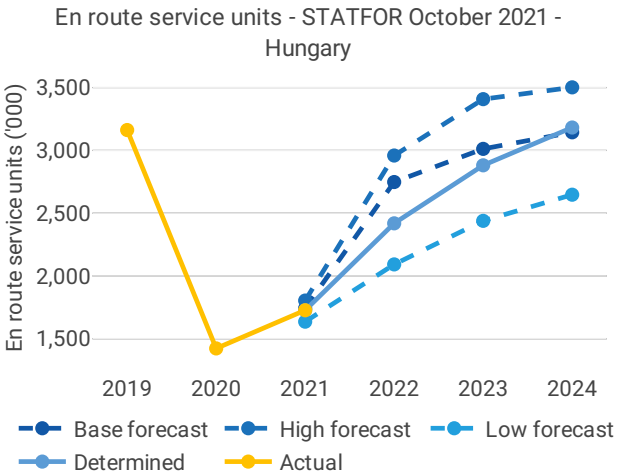
Other ANSPs
–

MET Providers
- Hungarian Meteorological Service (Országos Meteorológiai Szolgálat)

1.2 Traffic (En route traffic zone)

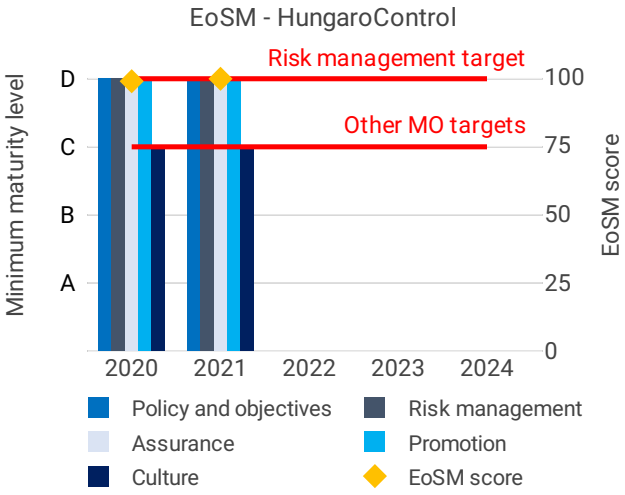


- Hungary recorded 491K actual IFR movements in 2021, +29% compared to 2020 (381K).
- Actual 2021 IFR movements were in line with the plan (491K).
- Actual 2021 IFR movements represent 55% of the actual 2019 level (892K).



- Hungary recorded 1,727K actual en route service units in 2021, +21% compared to 2020 (1,423K).
- Actual 2021 service units were in line with the plan (1,727K).
- Actual 2021 service units represent 55% of the actual 2019 level (3,162K).

1.3 Safety (Main ANSP)

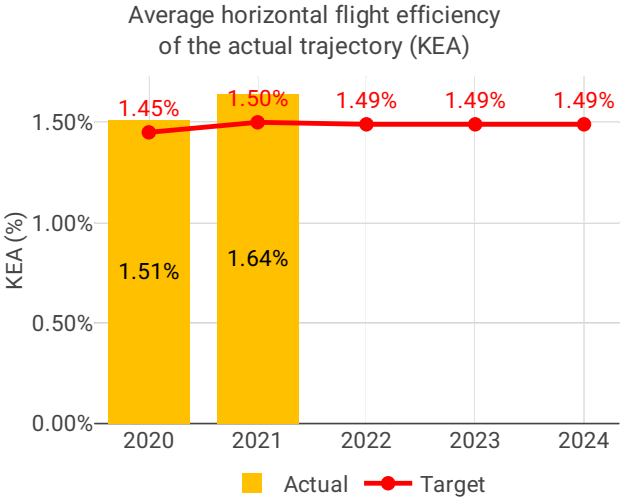


• HungaroControl demonstrated good safety performance, remaining at the RP3 EoSM target levels in all management objectives. HungaroControl achieved maturity, exceeding the maturity planned for 2021 in four out of five safety objectives.

• Hungary recorded a stable number of safety occurrences with no occurrences of runway incursions in 2021, but a higher rate of separation minima infringements relative to 2020. Both rates are below the Union-wide average rate.

• HungaroControl should improve its safety management by implementing automated safety data recording systems for runway incursions.

1.4 Environment (Member State)



• Hungary achieved a KEA performance of 1.64% compared to its target of 1.50% and did not contribute positively towards achieving the Union-wide target. KEA slightly increased by 0.13 p.p. in comparison to 2020.

• In January 2021 Slovakia joined SEE FRA, offering cross border FRA with Bulgaria, Hungary and Romania. The NSA stated that the difference compared to the target is beyond of the control of the ANSP, and it might be linked to airspace user choices.

• However, SEE FRA only enables cross border operations with two out of seven of Hungary's neighbouring countries and airspace restrictions/reservations may also have impeded performance.

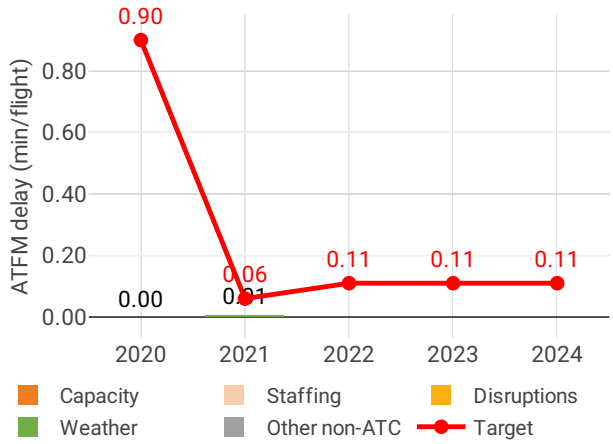
• KEP reached the best level over the past five years, however, SCR deteriorated to 2019 levels.

• Share of CDO flights slightly increased in comparison to 2020, and is higher than pre-pandemic years.

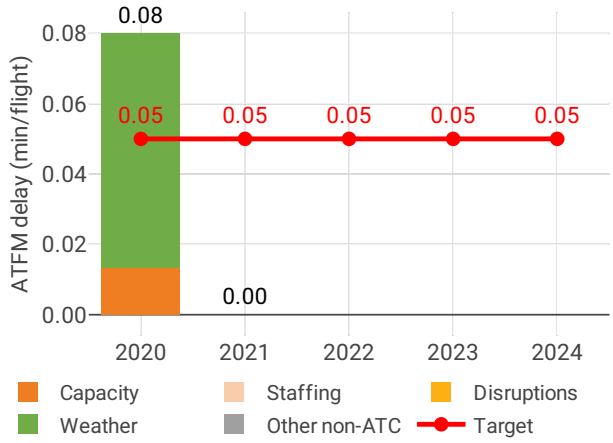
• Additional time in terminal airspace remained at similar levels to 2020, while additional taxi out time increased by 22%.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Hungary registered 0.01 minutes of average en route ATFM delay per flight during 2021, thus meeting the local breakdown value of 0.06.

• Delays should be considered in the context of lower traffic: in Hungary, IFR movements in 2021 were 45% lower than in 2019.

• Hungary has received additional traffic due to airspace closures East of the SES airspace which may expedite the recovery. 2019 traffic levels are likely to be reached in 2022 (in high growth scenario) or 2023 (in base growth scenario). A slight increase in the number of ATCOs in OPS is planned in Budapest ACC by the end of RP3.

• Based on the analysis of previous capacity profiles, the PRB estimates Hungary to face a capacity gap once IFR movements rise above 77% of 2019 levels. The PRB recommends that capacity improvement measures are implemented before traffic begins to recover.

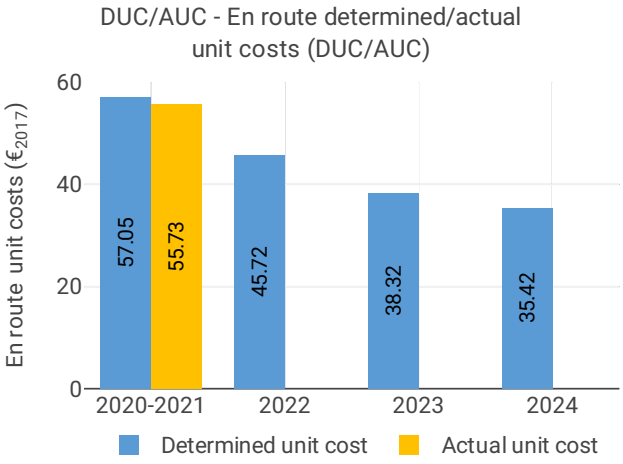
• Delays were highest in August and October, mostly due to adverse weather conditions and ATC staffing issues.

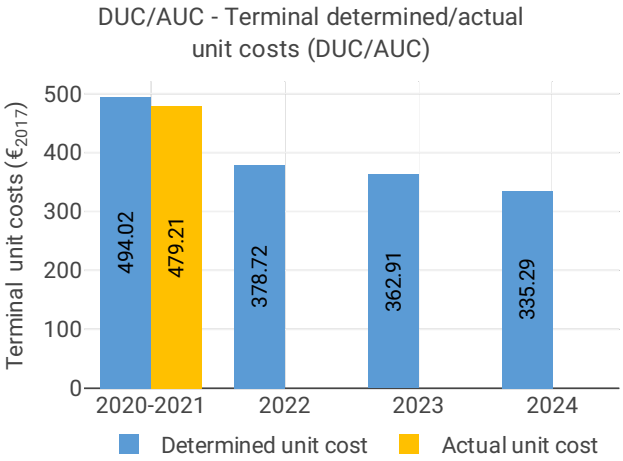
• The share of delayed flights with delays longer than 15 minutes in Hungary increased by 23.71 p.p. compared to 2020 and was lower than 2019 values.

• The yearly total of sector opening hours in Budapest ACC was 27,901, showing a 35.8% increase compared to 2020. Sector opening hours are 17.5% below 2019 levels.

• Budapest ACC registered 17.03 IFR movements per one sector opening hour in 2021, being 31.7% below 2019 levels.

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





• The en route 2020/2021 actual unit cost of Hungary was 55.73 €2017, -2.3% lower than the determined unit cost (57.05 €2017). The terminal actual unit cost was 479.21 €2017, -3.0% lower than the determined unit cost (494.02 €2017).

• The en route 2021 actual service units (1,727K) were in line with determined service units (1,727K).

• In 2021, actual total costs were -4.2 M€2017 lower (-4.5%) than determined. Hungary decreased all cost categories except cost of capital (+0.9%). The reduction was mainly due to lower staff costs (-3.5 M€2017, or -7.8%) mostly driven by a decrease in headcounts (mainly non-ATCO) and a restructuration of ATCO wage system to make it traffic dependent.

• HungaroControl spent 27 M€2017 in 2021 related to costs of investments, +12% more than determined (24 M€2017). This was mainly driven by a higher than planned property management fee (i.e. leasing fee), however the NSA explained that the increase should be compensated in the next years.

• The en route actual unit cost incurred by users in 2020/2021 was 53.38€, while the terminal actual unit cost incurred by users was 464.71€.

2 SAFETY - HUNGARY

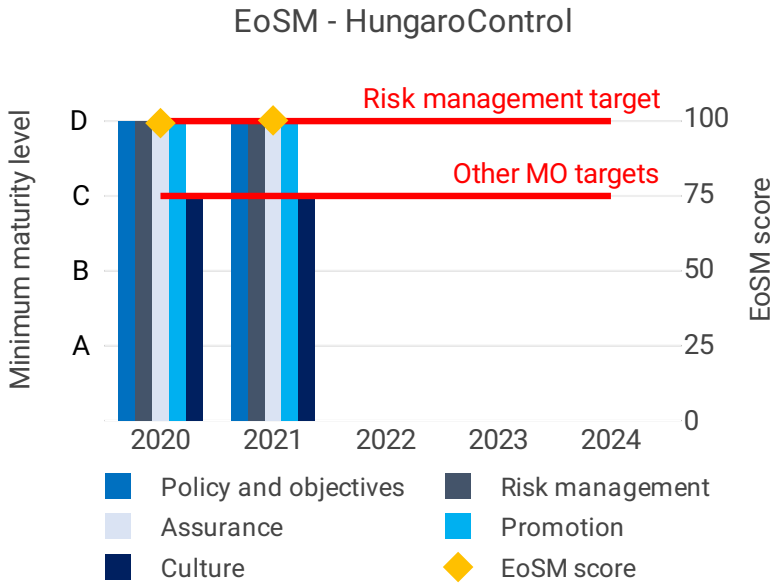
2.1 PRB monitoring

• HungaroControl demonstrated good safety performance, remaining at the RP3 EoSM target levels in all management objectives. HungaroControl achieved maturity, exceeding the maturity planned for 2021 in four out of five safety objectives.

• Hungary recorded a stable number of safety occurrences with no occurrences of runway incursions in 2021, but a higher rate of separation minima infringements relative to 2020. Both rates are below the Union-wide average rate.

• HungaroControl should improve its safety management by implementing automated safety data recording systems for runway incursions.

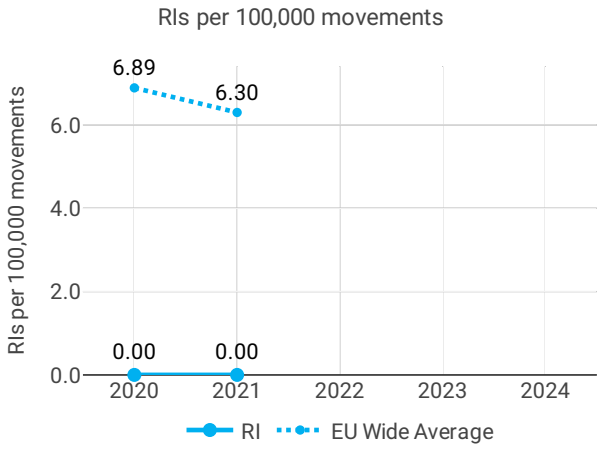
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

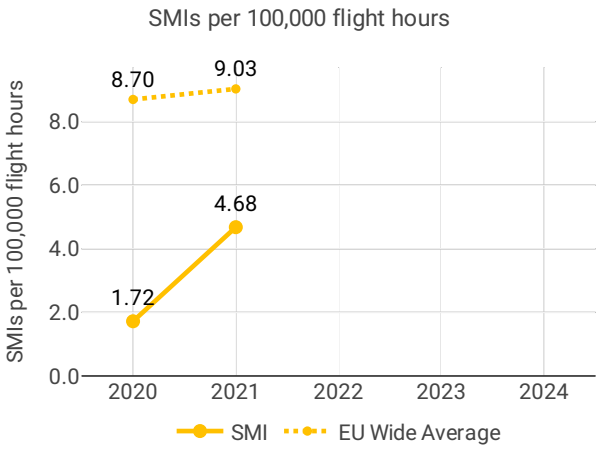


Focus on EoSM

All five EoSM components of the ANSP meet, or exceed, already the 2024 target level.

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





3 ENVIRONMENT - HUNGARY

3.1 PRB monitoring

• Hungary achieved a KEA performance of 1.64% compared to its target of 1.50% and did not contribute positively towards achieving the Union-wide target. KEA slightly increased by 0.13 p.p. in comparison to 2020.

• In January 2021 Slovakia joined SEE FRA, offering cross border FRA with Bulgaria, Hungary and Romania. The NSA stated that the difference compared to the target is beyond of the control of the ANSP, and it might be linked to airspace user choices.

• However, SEE FRA only enables cross border operations with two out of seven of Hungary's neighbouring countries and airspace restrictions/reservations may also have impeded performance.

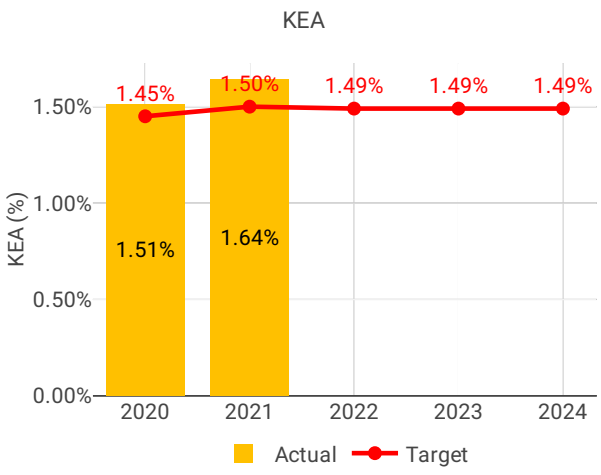
• KEP reached the best level over the past five years, however, SCR deteriorated to 2019 levels.

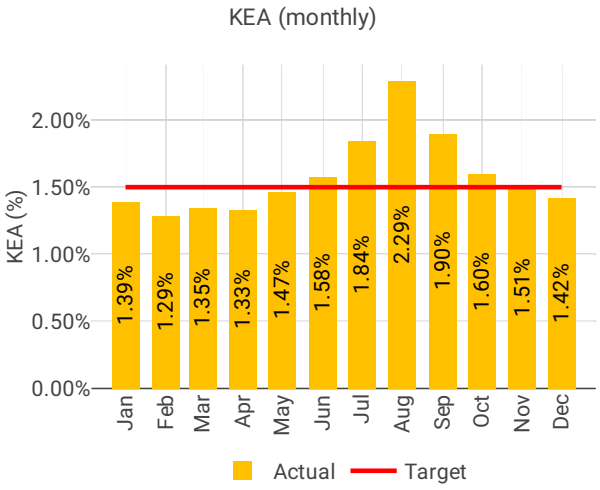
• Share of CDO flights slightly increased in comparison to 2020, and is higher than pre-pandemic years.

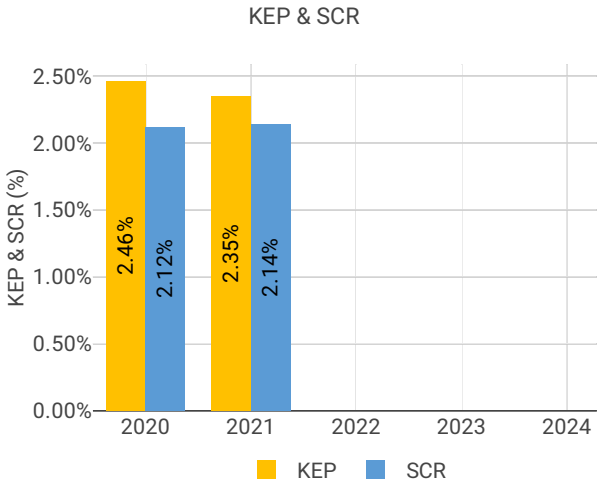
• Additional time in terminal airspace remained at similar levels to 2020, while additional taxi out time increased by 22%.

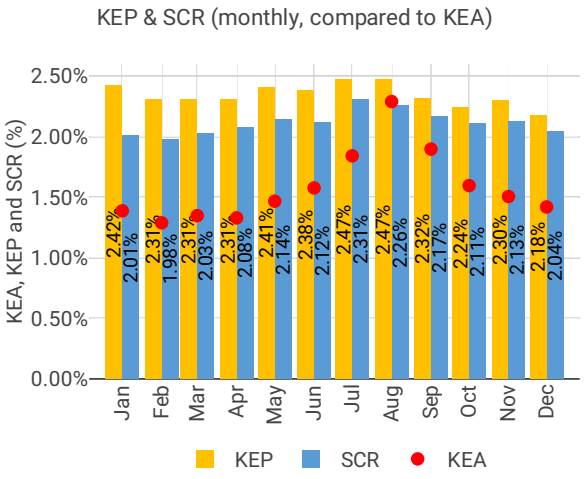
3.2 En route performance

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)



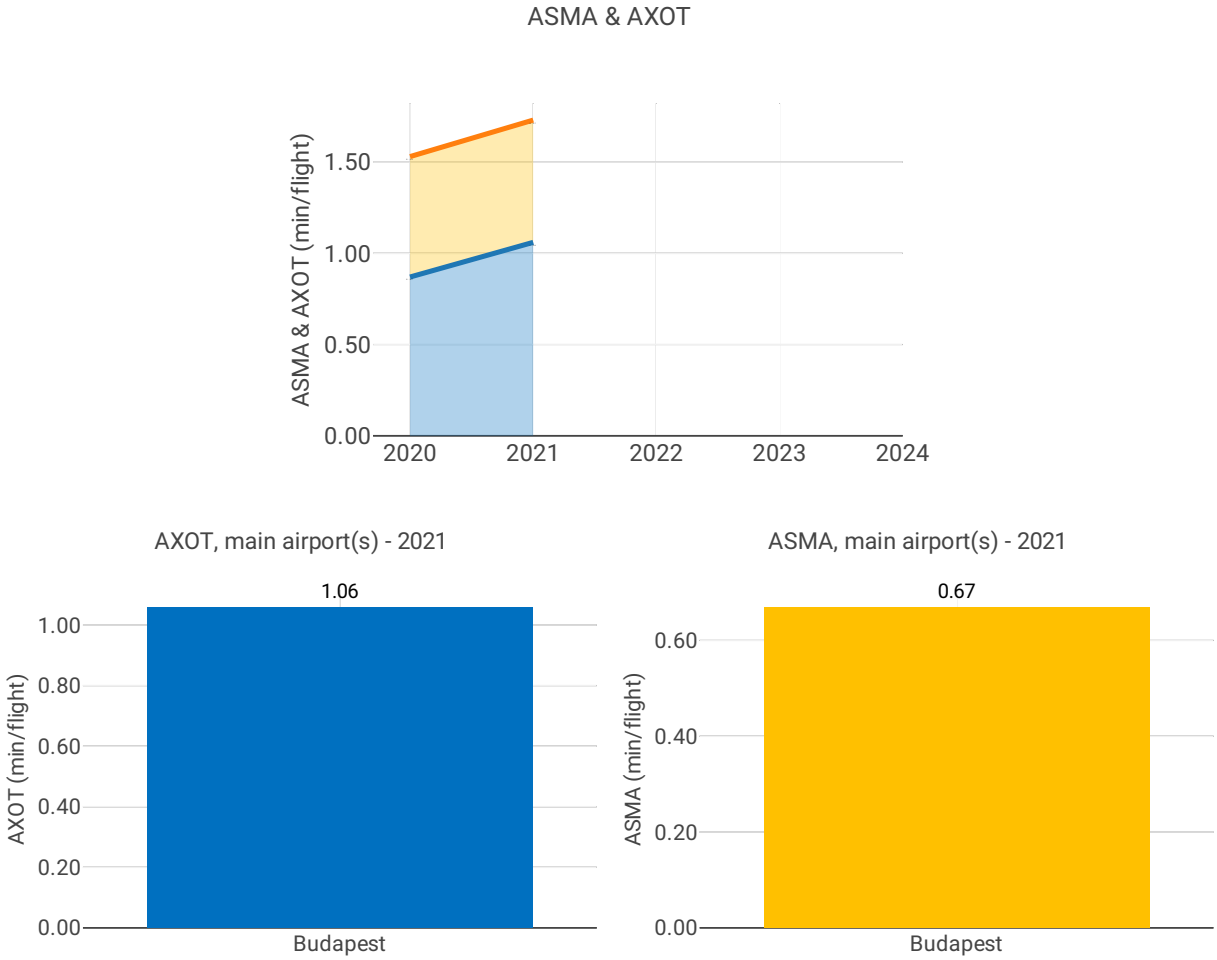






3.3 Terminal performance

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



Focus on ASMA & AXOT

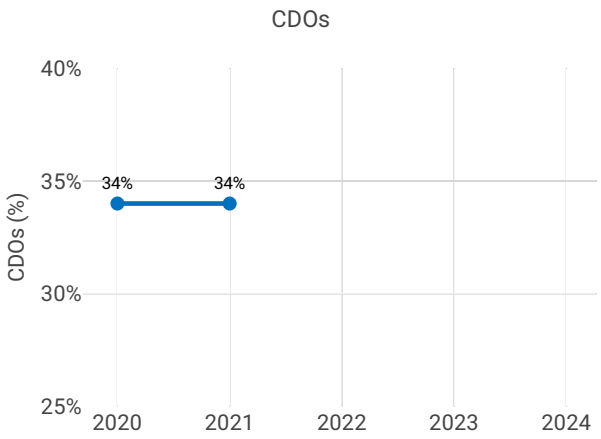
AXOT

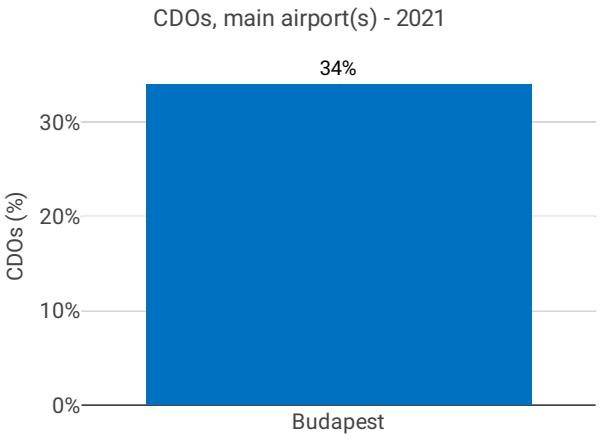
Additional taxi-out times at Budapest (LHBP; 2019: 1.63 min/dep.; 2020: 0.87 min/dep.; 2021: 1.06 min/dep.) increased with respect to 2020 but remained below 1.5 min/dep. even in the second part of the year when traffic recovered.
According to the Hungarian monitoring report: *As the actual value of this PI is satisfactory, no additional initiatives are needed.*

ASMA

The additional times in the terminal airspace in 2021 were similar to the values in 2020 (LHBP; 2019: 0.85 min/arr.; 2020: 0.66 min/arr.; 2021: 0.67 min/arr.)
Nevertheless, in August these values exceeded the worst values in 2019, averaging 2.24 min/arr.
According to the Hungarian monitoring report: *As the actual value of this PI is satisfactory similar to the previous year's value no additional initiatives are needed.*

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





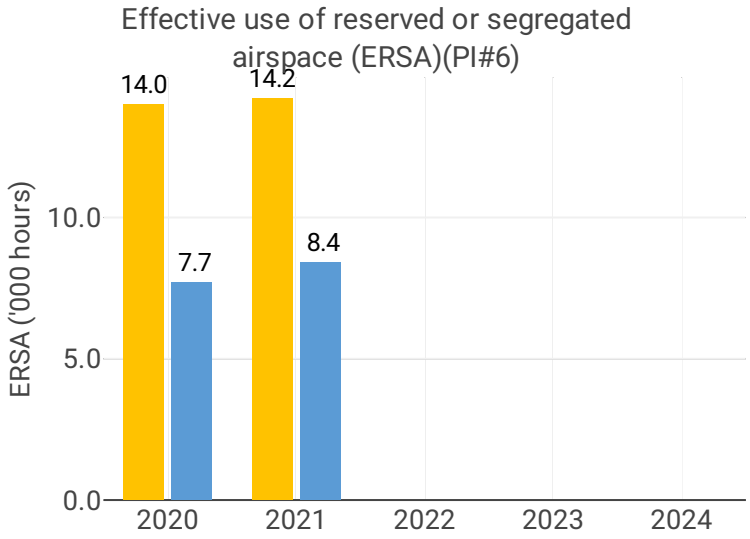
Focus CDOs

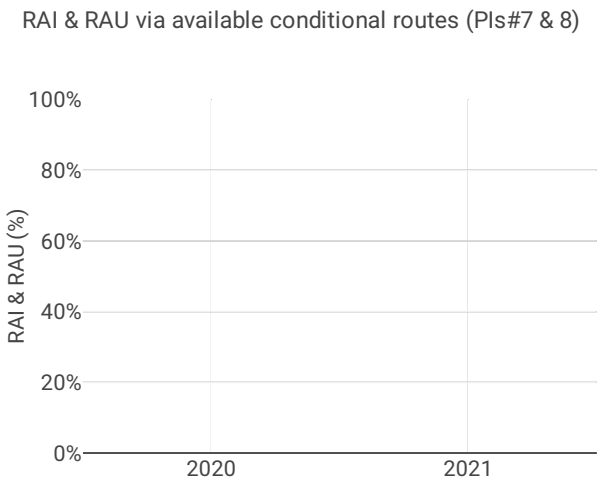
The share of CDO flights for Budapest has slightly increased from 33.4% in 2020 to 34.0% in 2021. This value is slightly above the overall RP3 value in 2021 (30.5%).
Between June and November, the monthly values decreased significantly with the lowest value in August (25.9%).
According to the Hungarian monitoring report: *As the actual value of this PI is very good no additional initiatives are needed.*

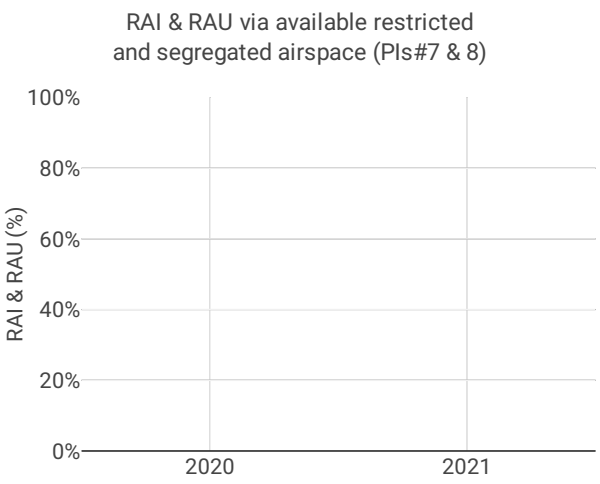
Airport level

	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
Budapest	0.87	1.06	NA	NA	NA	0.66	0.67	NA	NA	NA	33%	34%	NA	NA	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

The impact of military operations to civil traffic was irrelevant in 2021. The airspace design and procedures are in line with FUA policies.

Military - related measures implemented or planned to improve capacity

No data available

Initiatives implemented or planned to improve PI#6

A more efficient design process has helped to improve the efficiency rate.

Initiatives implemented or planned to improve PI#7

With the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated. Since that the entire CDR route concept is not applicable anymore in Hungary.

Initiatives implemented or planned to improve PI#8

With the implementation of free route airspace in Hungary in 2015 all the ATS routes have been eliminated. Since that the entire CDR route concept is not applicable anymore in Hungary.

4 CAPACITY - HUNGARY

4.1 PRB monitoring

• Hungary registered 0.01 minutes of average en route ATFM delay per flight during 2021, thus meeting the local breakdown value of 0.06.

• Delays should be considered in the context of lower traffic: in Hungary, IFR movements in 2021 were 45% lower than in 2019.

• Hungary has received additional traffic due to airspace closures East of the SES airspace which may expedite the recovery. 2019 traffic levels are likely to be reached in 2022 (in high growth scenario) or 2023 (in base growth scenario). A slight increase in the number of ATCOs in OPS is planned in Budapest ACC by the end of RP3.

• Based on the analysis of previous capacity profiles, the PRB estimates Hungary to face a capacity gap once IFR movements rise above 77% of 2019 levels. The PRB recommends that capacity improvement measures are implemented before traffic begins to recover.

• Delays were highest in August and October, mostly due to adverse weather conditions and ATC staffing issues.

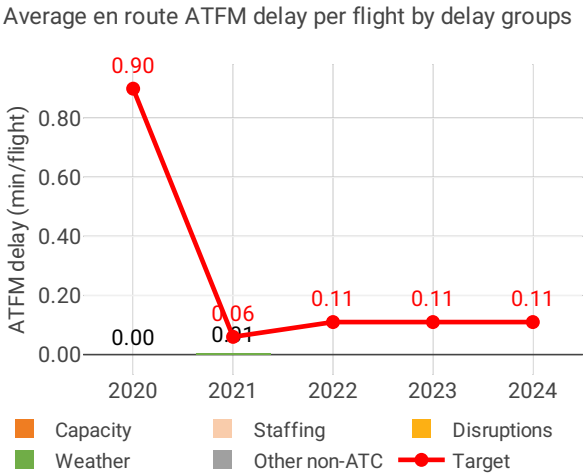
• The share of delayed flights with delays longer than 15 minutes in Hungary increased by 23.71 p.p. compared to 2020 and was lower than 2019 values.

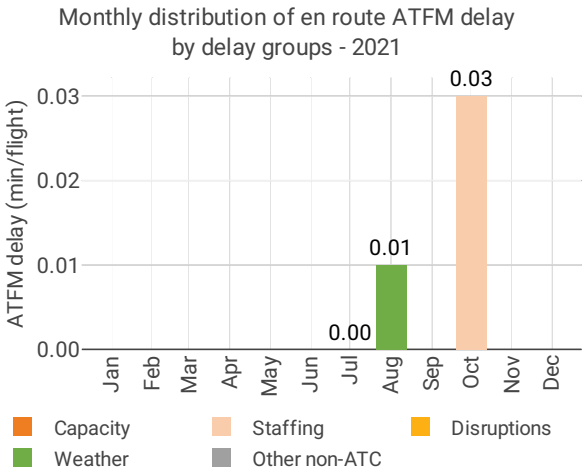
• The yearly total of sector opening hours in Budapest ACC was 27,901, showing a 35.8% increase compared to 2020. Sector opening hours are 17.5% below 2019 levels.

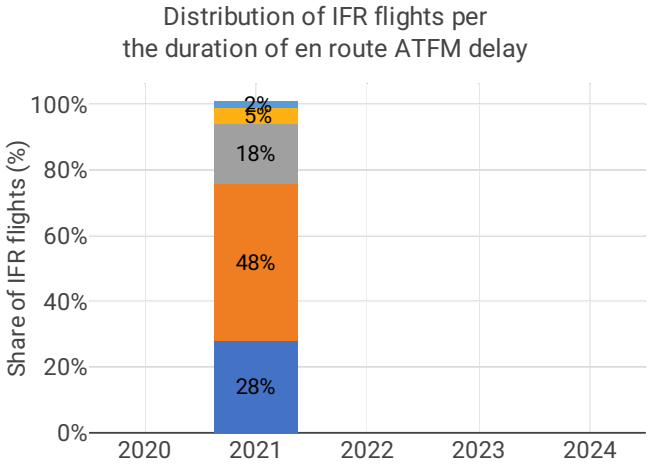
• Budapest ACC registered 17.03 IFR movements per one sector opening hour in 2021, being 31.7% below 2019 levels.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Hungary experienced an increase in traffic from 381k flights in 2020 to 491k flights in 2021, with practically zero ATFM delays. However, traffic levels were still substantially below the 892k flights in 2019.

NSA's assessment of capacity performance

During the 2nd year of COVID pandemic the traffic level was still very low in Hungary, therefore to reach 0 minutes delay per flight was achievable. HungaroControl has put the focus on how to ensure the service continuity while minimizing the spread of virus among the operational personnel.

Monitoring process for capacity performance

In 2021 regular online meetings were organised between the ANSP and the NSA focusing on the issues like how to maintain the ATCOs proficiency. As the traffic demand was well below the planned capacity, capacity was not an issue.

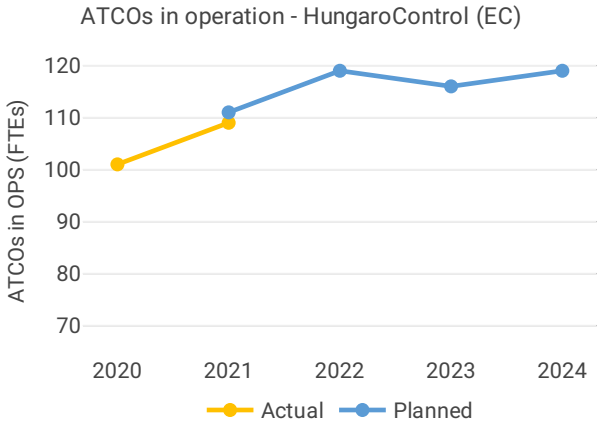
Capacity planning

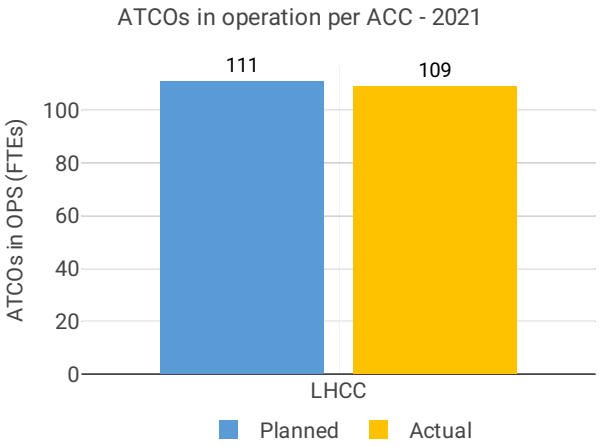
In 2021 the delay target was met, capacity planning was appropriate.

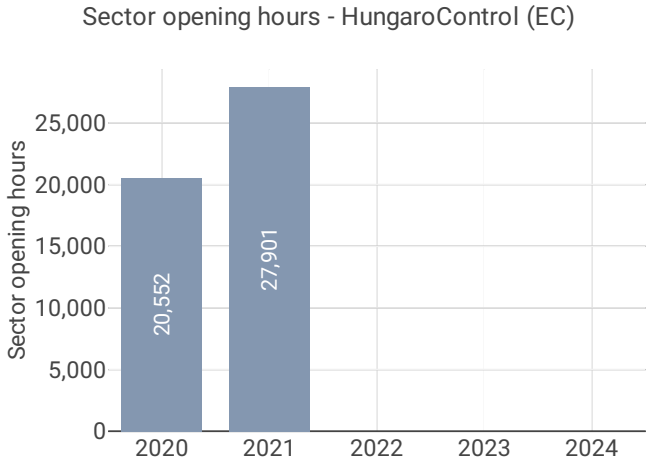
Application of Corrective Measures for Capacity (if applicable)

Not applicable

4.2.2 Other indicators





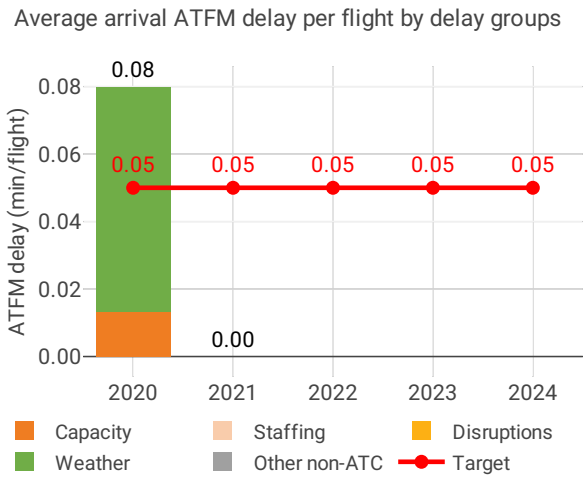


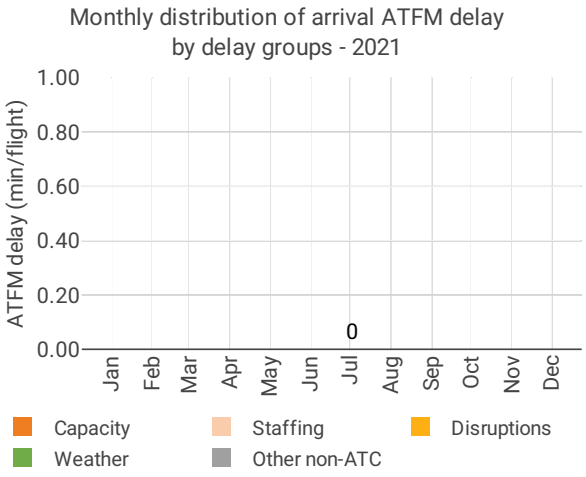
Focus on ATCOs in operations

*Hungary has previously reported 97 & 93 FTE operational ATCOs in 2019 and 2020 respectively for LHCC ACC.N/A

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





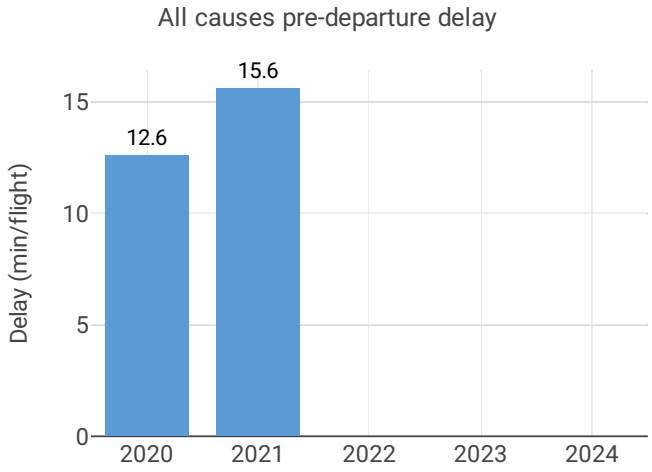
Focus on arrival ATFM delay

Hungary identified only its main airport Budapest as subject to RP3 monitoring. The Airport Operator Data Flow is correctly established and all capacity indicators can be monitored.
Traffic at Budapest airport in 2021 was still by 55% lower compared to 2019, with an important recovery in the second half of the year.
Average arrival ATFM delays in 2021 was 0 min/arr, compared to 0.08 min/arr in 2020.
ATFM slot adherence has deteriorated (2021: 96.0%; 2020: 96.2%).

No arrival ATFM delays were observed in the entire 2021 at Budapest (LHBP: 2019: 0.03 min/arr.; 2020: 0.08 min/arr.; 2021: 0 min/arr.)

The provisional national target on arrival ATFM delay in 2021 was met.
In accordance with Article 3 (3) (a) of Implementing Regulation (EU) 2020/1627: The incentive scheme shall cover only the calendar years 2022 to 2024.

4.3.2 Other terminal performance indicators (PI#1-3)



Airport level

	Avg arrival ATFM delay (KPI#2)				Slot adherence (PI#1)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Budapest	0.08	0.00	NA	NA	96.2%	96.0%	NA%	NA%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2020	2021	2022	2023	2020	2021	2022	2023
Budapest	0.14	0.14	NA	NA	12.6	15.6	NA	NA

Focus on performance indicators at airport level

ATFM slot adherence

With the drastic drop in traffic, regulated departures from Budapest virtually disappeared until July 2021. Budapest's ATFM slot compliance was 96.0%, very similar to the performance in 2020 (96.2%). With regard to the 4% of flights that did not adhere, 2.4% was early and 1.6% was late.

ATC pre-departure delay

The performance in terms of ATC pre-departure delay at Budapest has further improved with respect to the previous years (LHBP; 2019: 0.30 min/dep.; 2020: 0.16 min/dep.; 2021: 0.14 min/dep.) Nevertheless, at monthly level the ATC pre-departure delay in second half of 2021 is getting closer to the 2019 values.

All causes pre-departure delay

The total (all causes) delay in the actual off block time at Budapest increased in 2021 (LHBP: 2020: 12.58 min/dep.; 2021: 15.61 min/dep.). The highest delays per flight were observed in February, averaging almost 25 min/dep.

5 COST-EFFIENCY - HUNGARY

5.1 PRB monitoring

• The en route 2020/2021 actual unit cost of Hungary was 55.73 €2017, -2.3% lower than the determined unit cost (57.05 €2017). The terminal actual unit cost was 479.21 €2017, -3.0% lower than the determined unit cost (494.02 €2017).

• The en route 2021 actual service units (1,727K) were in line with determined service units (1,727K).

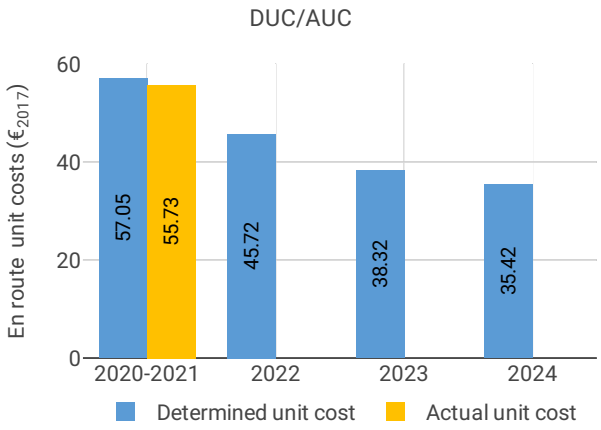
• In 2021, actual total costs were -4.2 M€2017 lower (-4.5%) than determined. Hungary decreased all cost categories except cost of capital (+0.9%). The reduction was mainly due to lower staff costs (-3.5 M€2017, or -7.8%) mostly driven by a decrease in headcounts (mainly non-ATCO) and a restructuration of ATCO wage system to make it traffic dependent.

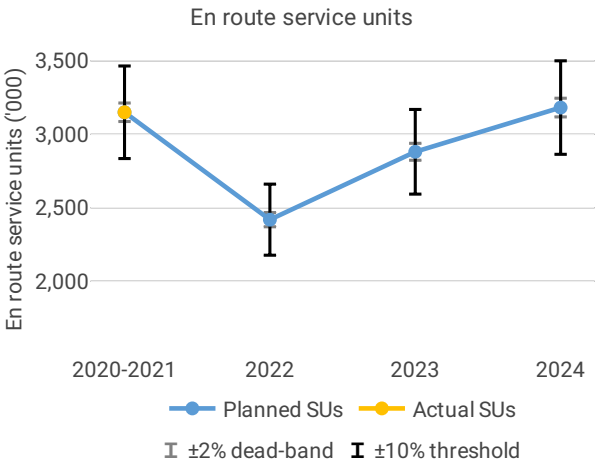
• HungaroControl spent 27 M€2017 in 2021 related to costs of investments, +12% more than determined (24 M€2017). This was mainly driven by a higher than planned property management fee (i.e. leasing fee), however the NSA explained that the increase should be compensated in the next years.

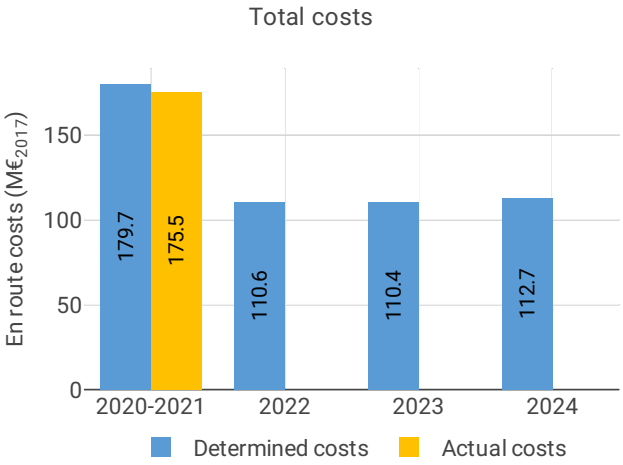
• The en route actual unit cost incurred by users in 2020/2021 was 53.38€, while the terminal actual unit cost incurred by users was 464.71€.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)

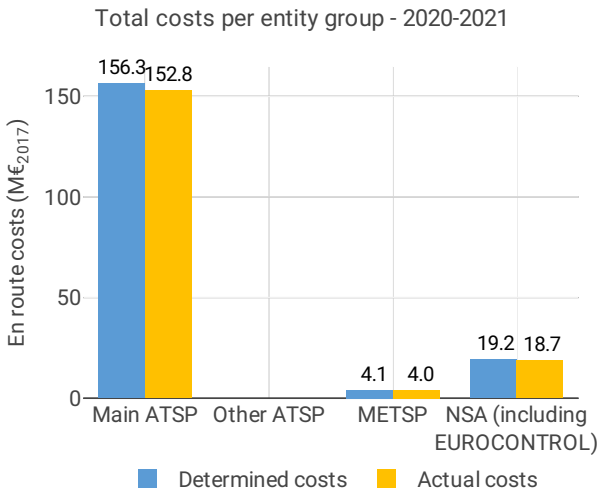


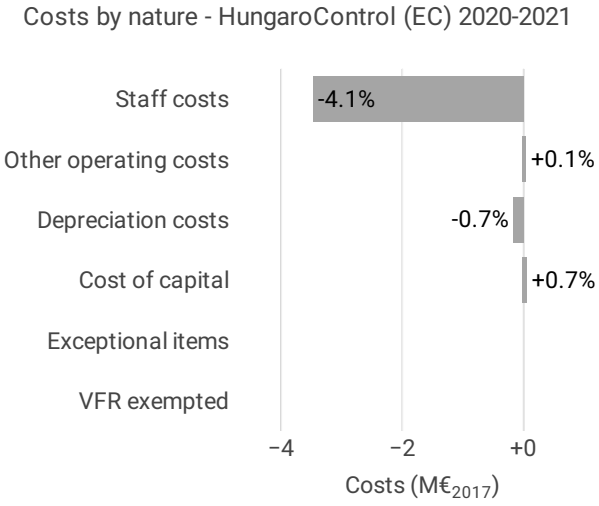




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	191	NA	NA	NA
Determined costs	195	124	127	132
Difference costs	-4	NA	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	3.5%	3.3%	3.0%
Determined inflation index	NA	118	121.9	125.5
Actual inflation rate	NA	NA	NA	NA
Actual inflation index	NA	NA	NA	NA
Difference inflation index (p.p.)	NA	NA	NA	NA





Focus on unit cost

AUC vs. DUC

In the combined year 2020-2021, the AUC was lower than planned in DUC (by -2.3%, or -408.66HUF2017, or -1.32€2017). This results from the lower than planned en route costs in real terms (by -2.3%, or -1,287.2 MHUF2017, or -4.2 M€2017).

En route service units

Actual total en route service units are in line with planned TSUs, as plan was presented in February 2022.

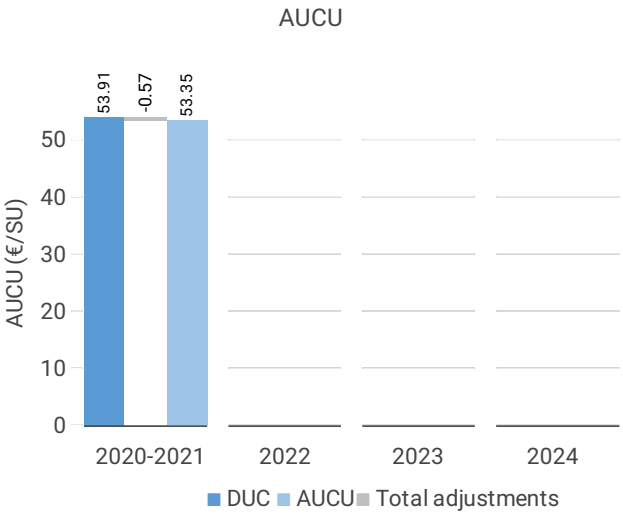
En route costs by entity

Actual real en route costs for 2020-2021 are -2.3% (-1 287.2 MHUF2017, or -4.2 M€2017) lower than planned. This result is driven by main ANSP, HungaroControl (-2.3%, or -3.6 M€2017), the MET service provider (-2.9%, or -0.1 M€2017) and NSA/EUROCONTROL costs (-2.5%, or -0.5 M€2017).

En route costs for the main ANSP at charging zone level

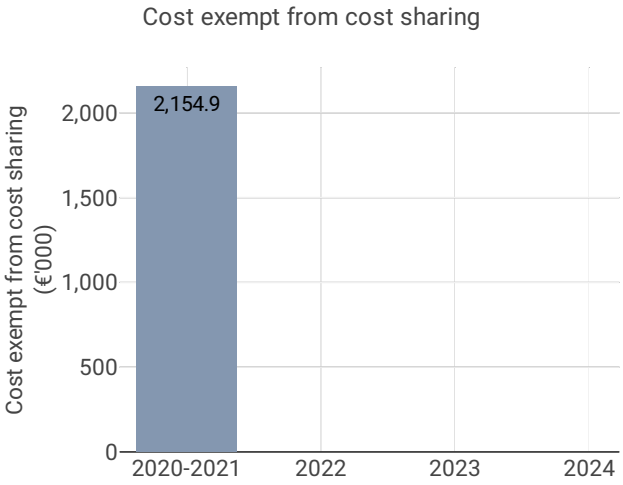
The lower than planned en route costs in real terms for HungaroControl in 2020-2021 (-2.3%, or -3.6 M€2017 lower) results from:
- lower staff costs (-4.1%), due to "decrease in headcount (mainly in non-ATCO business functions), restructuring of ATCO wage system (more traffic dependent), consequently savings in payroll taxes/contributions;"
- slightly higher other operating costs (+0.1%);
- lower depreciation (-0.7%), "due to assets placed in service later than planned, revision of some assets' useful life;"
- higher cost of capital (+0.7%), due to increase in net current assets.

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



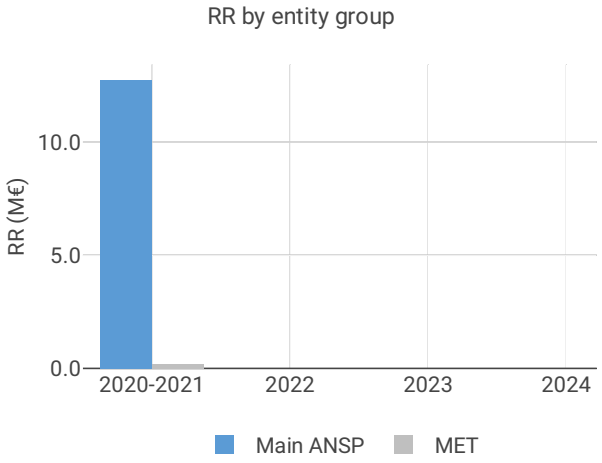
AUCU components (€/SU) – 2020-2021

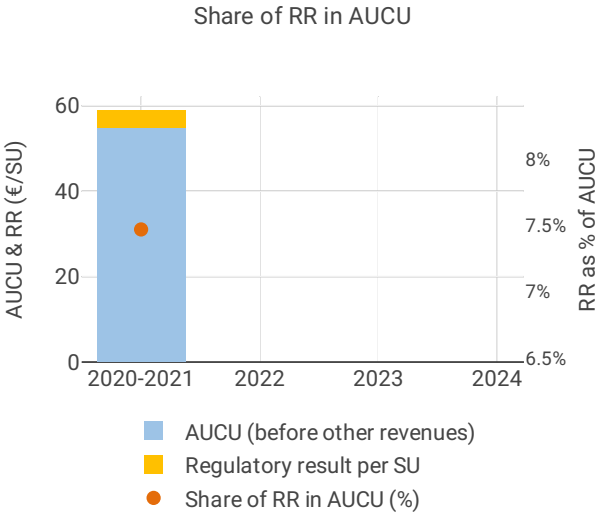
Components of the AUCU in 2020-2021	€/SU
DUC	**53.91**
Inflation adjustment	0.30
Cost exempt from cost-sharing	0.68
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	0.00
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-1.55
Application of lower unit rate	0.00
Total adjustments	-0.57
AUCU	**53.35**
AUCU vs. DUC	**-1.1%**

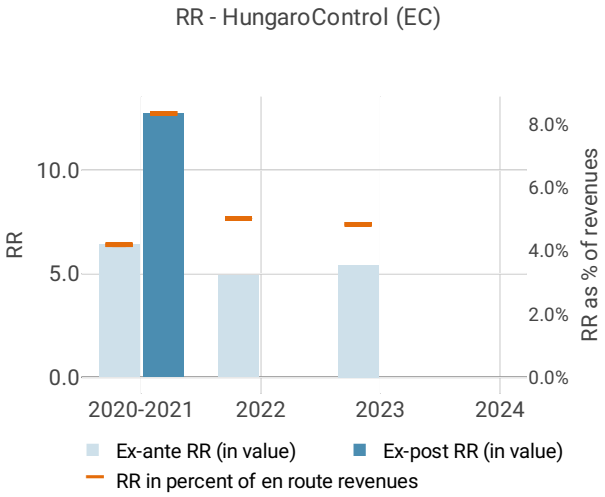


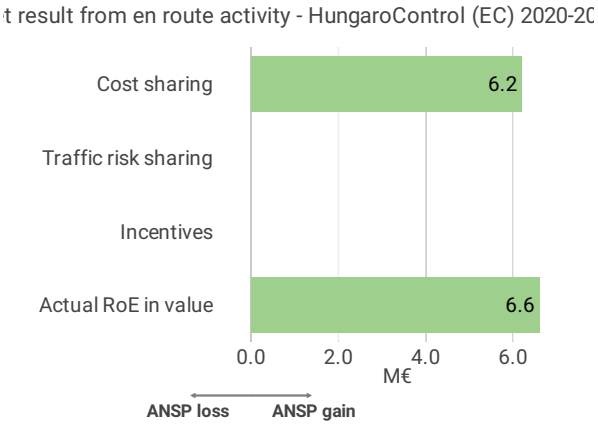
Cost exempt from cost sharing by item - 2020-2021	€'000	€/SU
New and existing investments	2,570.8	0.82
Competent authorities and qualified entities costs	235.7	0.07
Eurocontrol costs	-651.6	-0.21
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**2,154.9**	**0.68**

5.2.3 Regulatory result (RR)









Focus on regulatory result

HungaroControl net gain on en route activity in the Hungary charging zone in the combined year 2020-2021

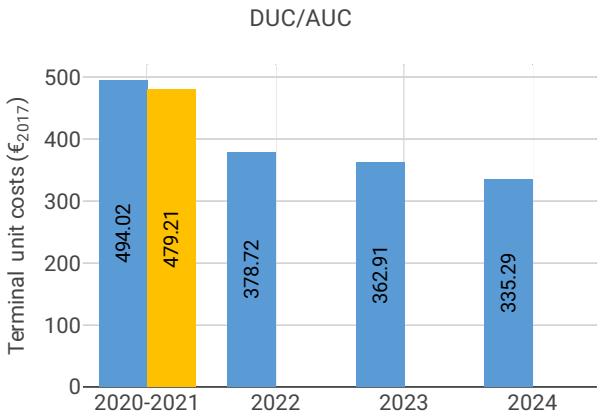
HungaroControl's net gain amounts to +6.2 M€, arising from the cost sharing mechanism.

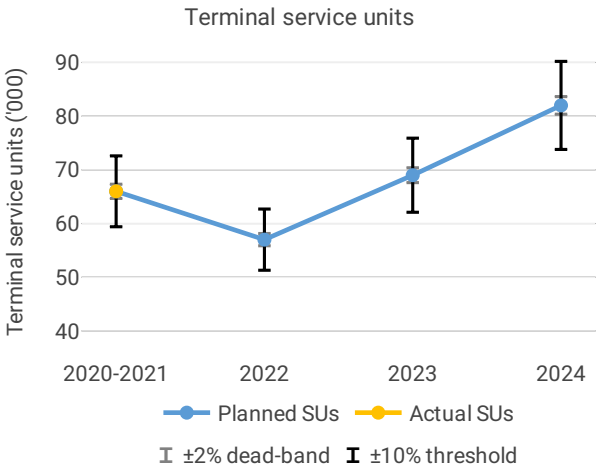
HungaroControl overall regulatory results (RR) for the en route activity

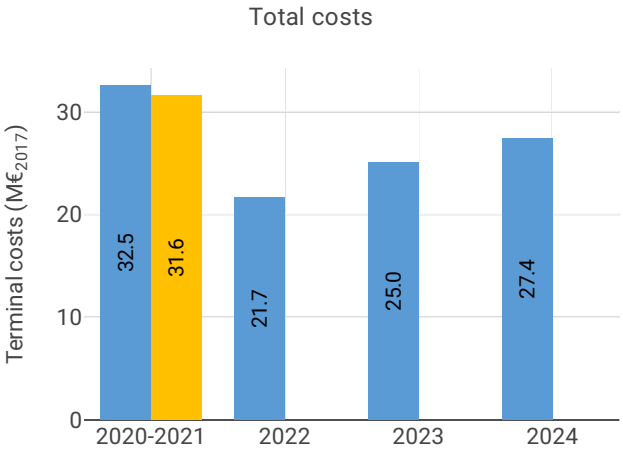
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+6.2 M€) and the actual RoE (+6.6M€) amounts to +12.7 M€ (8.4% of the en route revenues). The resulting ex-post rate of return on equity is 9.9%, which is higher than the 5.1% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

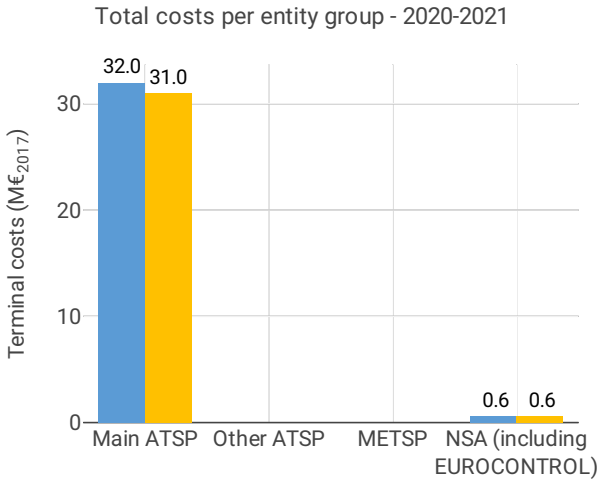


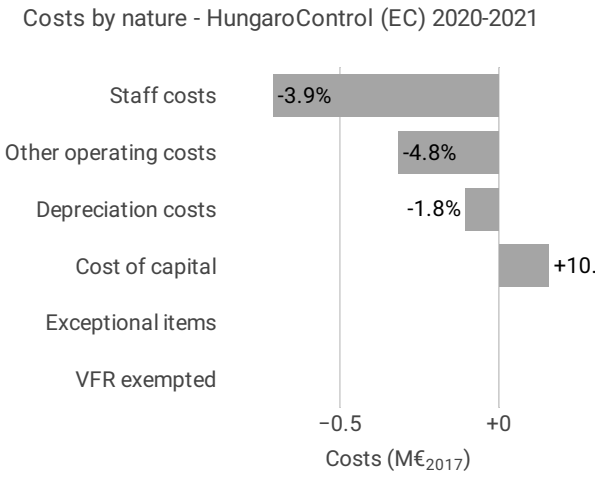




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	35	NA	NA	NA
Determined costs	36	25	28	31
Difference costs	-1	NA	NA	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	3.5%	3.3%	3.0%
Determined inflation index	NA	118	121.9	125.5
Actual inflation rate	NA	NA	NA	NA
Actual inflation index	NA	NA	NA	NA
Difference inflation index (p.p.)	NA	NA	NA	NA





Focus on unit cost

AUC vs. DUC

In the combined year 2020-2021, the terminal AUC was -3.0% (or -4,576.72HUF2017, or -14.81€2017) lower than the planned DUC. This results from lower than planned terminal costs in real term (-3.0%, or -301.6 MHUF2017, or -1.0 M€2017).

Terminal service units

Actual total terminal service units are in line with planned TNSUs, as plan was presented in February 2022.

Terminal costs by entity

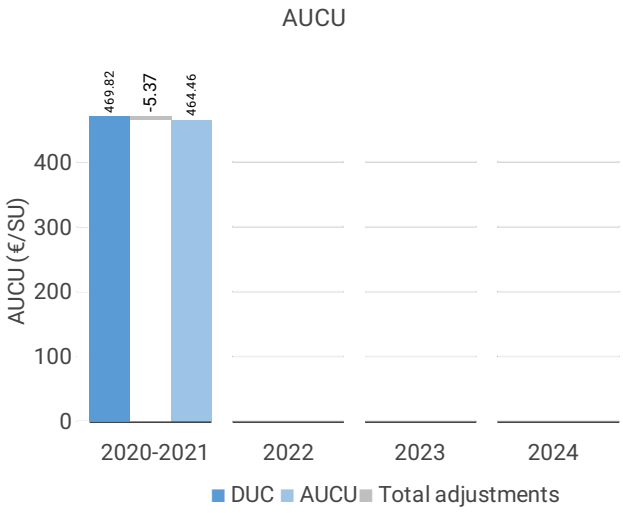
Actual real terminal costs are -3.0% (-301.6 MHUF2017 or -1.0 M€2017) lower than planned. This is driven by the main ANSP, HungaroControl (-3.1%, or -1.0 M€2017).

Terminal costs for the main ANSP at charging zone level

The lower than planned terminal costs in real terms for HungaroControl (-3.1%, or -1.0 M€2017) result from:

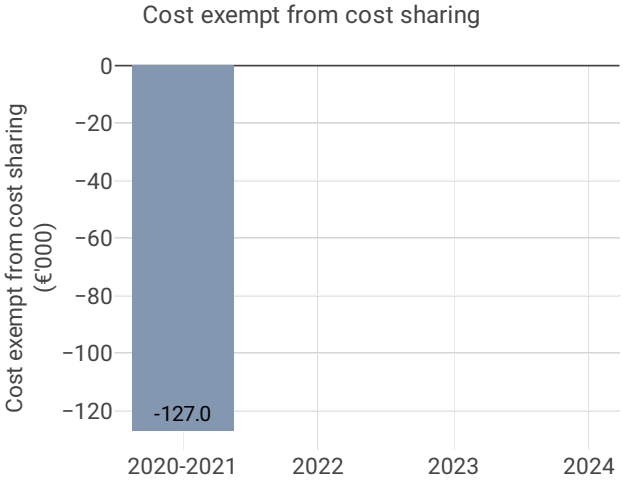
- lower staff costs (-3.9%), due to "decrease in headcount (mainly in non-ATCO business functions), restructuring of ATCO wage system (more traffic dependent), savings in payroll taxes due to the reduction in the contribution base;"
- lower other operating costs (-4.8%), due to "savings in services used, better customer solvency than planned (less bad debt provision);"
- lower depreciation (-1.8%), due to "assets placed in service later than planned, revision of some assets' useful life;"
- higher cost of capital (+10.8%), mainly due to increase in net current assets (+417.8% in 2021), "*the main driver of growth is a technical issue, namely the different handling of the adjustment of RP2 adjustments*".

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



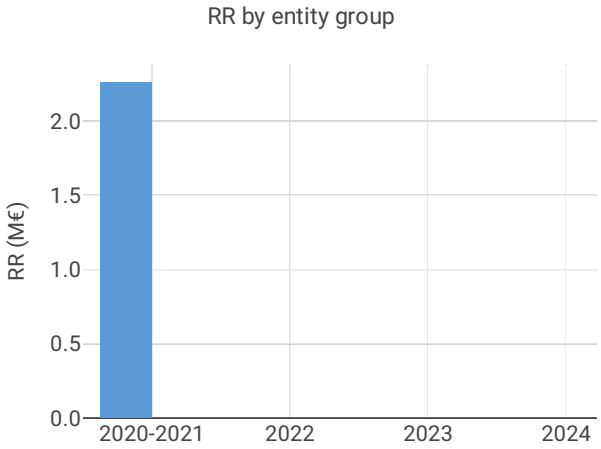
AUCU components (€/SU) – 2020-2021

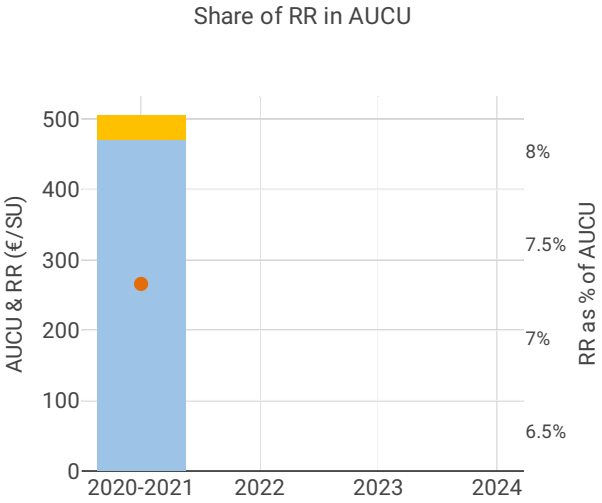
Components of the AUCU in 2020-2021	€/SU
DUC	**469.82**
Inflation adjustment	2.83
Cost exempt from cost-sharing	-1.93
Traffic risk sharing adjustment	0.00
Traffic adj. (costs not TRS)	0.00
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-6.26
Application of lower unit rate	0.00
Total adjustments	-5.37
AUCU	**464.46**
AUCU vs. DUC	**-1.1%**

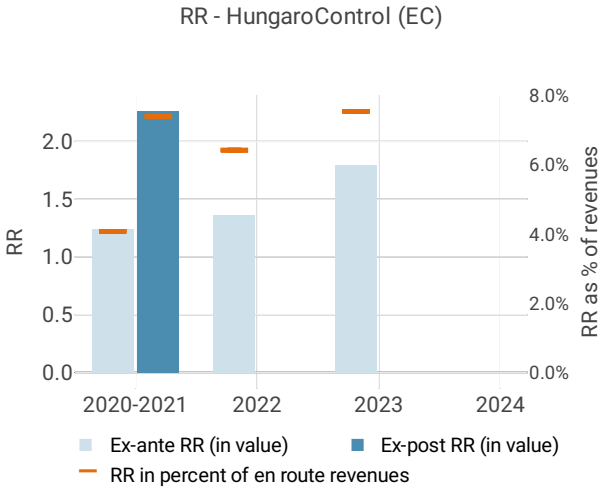


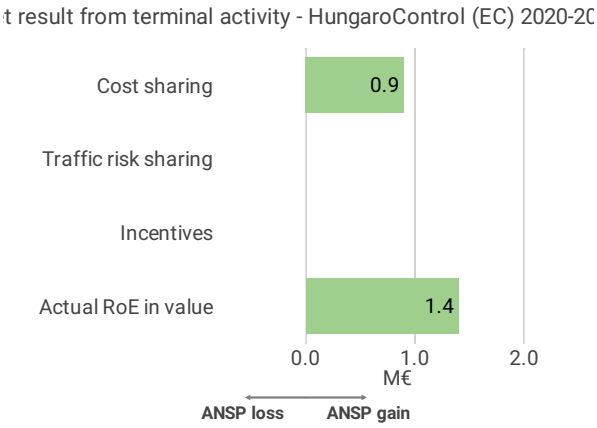
Cost exempt from cost sharing by item - 2020-2021	€'000	€/SU
New and existing investments	-127.0	-1.93
Competent authorities and qualified entities costs	0.0	0.00
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-127.0**	**-1.93**

5.3.3 Regulatory result (RR)









Focus on regulatory result

HungaroControl net gain on terminal activity in the Hungary charging zone in the combined year 2020-2021

HungaroControl's net gain amounts to +0.9 M€, arising from the cost sharing mechanism.

HungaroControl overall regulatory results (RR) for the terminal activity

Ex-post, the overall RR taking into account the net gain from the terminal activity mentioned above (+0.9 M€) and the actual RoE (+1.4 M€) amounts to +2.3 M€ (7.4% of the terminal revenues). The resulting ex-post rate of return on equity is 8.3%, which is higher than the 5.1% planned in the PP.