PRB | Performance review body of the single european sky

Performance Review Body Monitoring Report

Latvia - 2023

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1 OVERVIEW

1.1 Contextual information

National performance plan adopted following Commission Decision (EU) 2022/2426 of 5 December 2022

List of ACCs 1
Riga ACC

No of airports in the scope of the performance plan:
- **≥80'K** 0
- **<80'K** 3

Exchange rate (1 EUR=)
2017: 1 EUR
2023: 1 EUR

Share of Union-wide:
- **traffic (TSUs) 2023** 0.4%
- **en route costs 2023** 0.3%

Share en route / terminal costs 2023 76% / 24%

En route charging zone(s)
Latvia

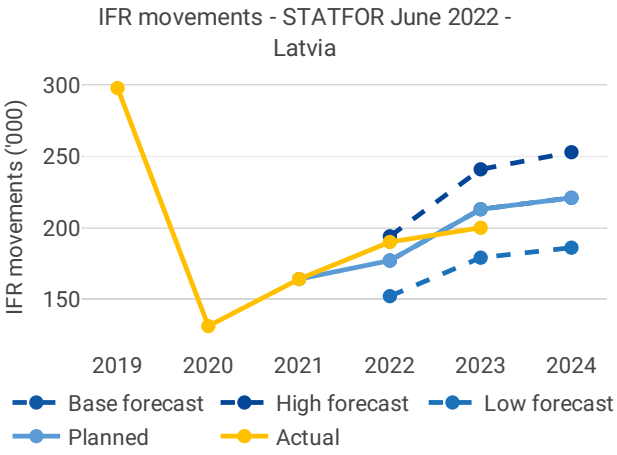
Terminal charging zone(s)
Latvia

Main ANSP
- LGS

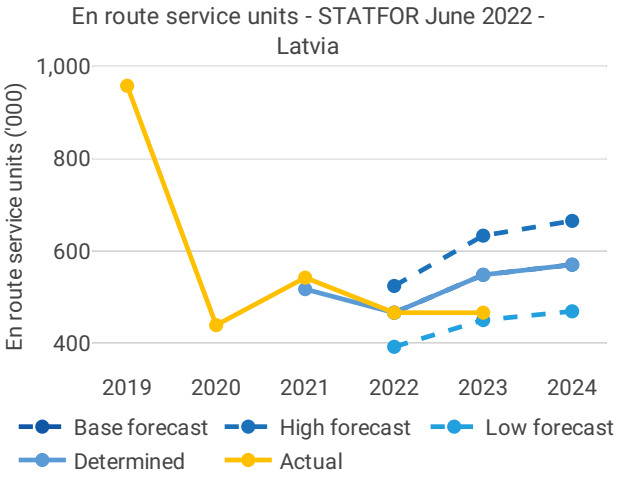
Other ANSPs
–

MET Providers
- LVĢMC

1.2 Traffic (En route traffic zone)

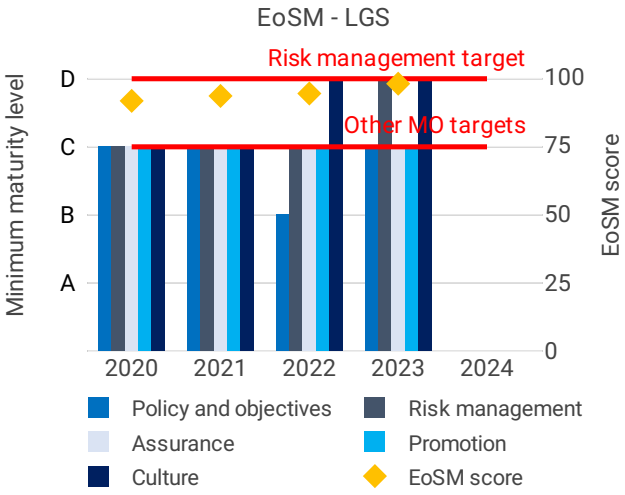


- Latvia recorded 200K actual IFR movements in 2023, +6% compared to 2022 (190K).
- Actual 2023 IFR movements were -5.9% below the plan (213K).
- Actual 2023 IFR movements represent 67% of the actual 2019 level (298K).



- Latvia recorded 466K actual en route service units in 2023, which was similar compared to 2022 (466K).
- Actual 2023 service units were -15% below the plan (548K).
- Actual 2023 service units represent 49% of the actual 2019 level (958K).

1.3 Safety (Main ANSP)



• In 2023, LGS has improved its performance for safety policy and objective and risk management and consequently achieved the RP3 target levels for all management objectives.

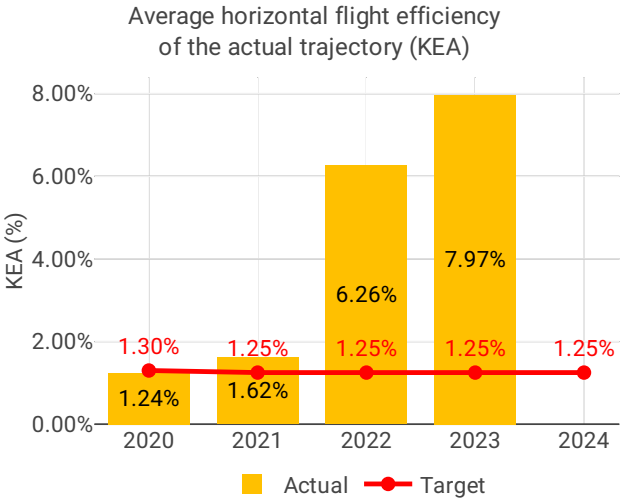
• LGS implemented improvements in the procedures for change management and safety assessment. More developments are necessary in the area of Fatigue Risk Management and Emergency Response Plan.

• Despite the currently high performance of the ANSP, the NSA cautions that the ANSP might not be able to retain the RP3 targets due to financial and human resource issues as a result of the war in Ukraine.

• Latvia recorded stable performance with respect to safety risks with a single runway incursion and a single separation minima infringement in 2023.

• LGS uses specific safety recording tools for separation minima infringements and runway incursions and is one of the few ANSPs that does so.

1.4 Environment (Member State)



• Latvia achieved a KEA performance of 7.97% compared to its target of 1.25% and did not contribute positively to the Union-wide target.

• The NSA states that the KEA deterioration was due to the continuation of significant route extensions as a result of Russia's war of aggression against Ukraine.

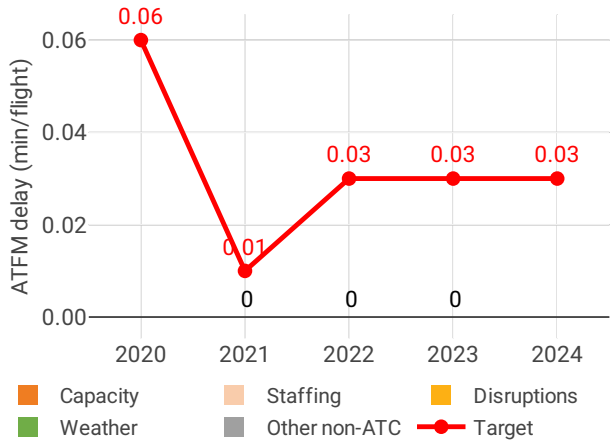
• Both KEP and SCR followed the same trend and worsened in comparison with 2022's performance.

• The share of CDO flights decreased from 60.40% to 58.92% in 2023.

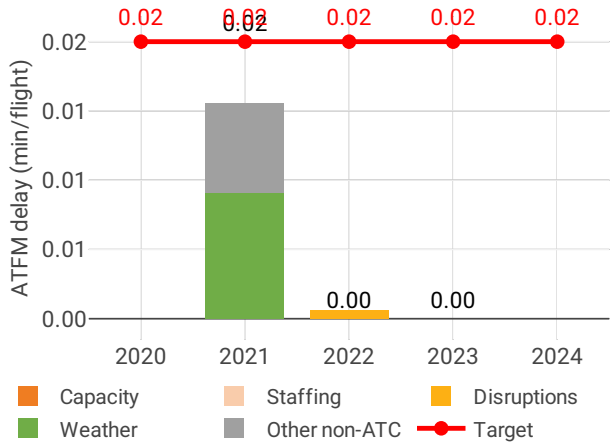
• During 2023, additional time in terminal airspace increased from 0.33 to 0.51 min/flight, while additional taxi out time increased from 2.82 to 2.66 min/flight.

1.5 Capacity (Member State)

Average en route ATFM delay per flight by delay groups



Average arrival ATFM delay per flight by delay groups



• Latvia registered zero minutes of average en route ATFM delay per flight during 2023, thus achieving the local target value of 0.03. Delays in Latvia remained unchanged year-on-year.

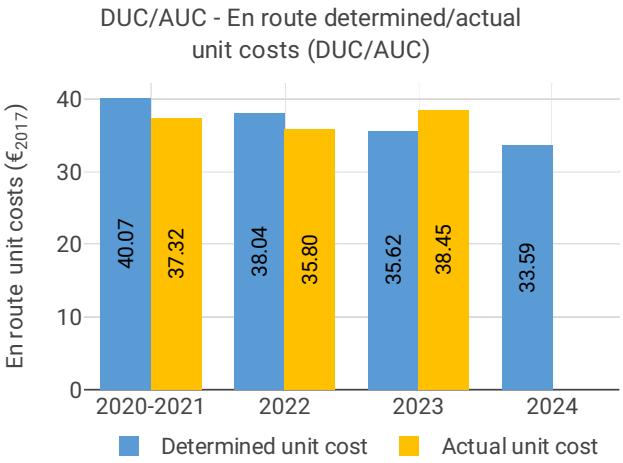
• The average number of IFR movements was 33% below 2019 levels in Latvia in 2023.

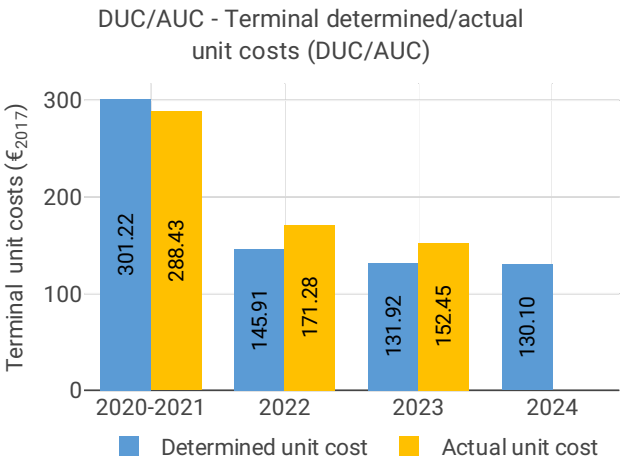
• The number of ATCOs in OPS is expected to increase by 9% by 2024, with the actual value being below the 2023 plan in Riga by 13 FTEs.

• The yearly total of sector opening hours in Riga ACC was 24,050, showing a 0.8% increase compared to 2022. Sector opening hours are 16.6% below 2019 levels.

• Riga ACC registered 8.25 IFR movements per one sector opening hour in 2023, being 19.7% below 2019 levels.

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





• The en route 2023 actual unit cost of Latvia was 38.45 €2017, +8.0% higher than the determined unit cost (35.62 €2017). The terminal 2023 actual unit cost was 152.45 €2017, +16% higher than the determined unit cost (131.92 €2017).

• The en route 2023 actual service units (0.47M) were -15% lower than the determined service units (0.55M), mainly due to shifted traffic flows caused by the Russia's war of aggression against Ukraine.

• The en route 2023 actual total costs were -1.6 M€2017 (-8.2%) lower than determined. The reduction in total cost was due to the lower staff costs (-1.3 M€2017, or -12%) which was a result of a reduction in staff numbers driven by lower than anticipated traffic volumes. In addition, other operating costs were lower than planned (-0.6 M€2017 or -13%), largely attributable to the MET provider LVĢMC, stemming from the cancellation and deferral of planned acquisitions.

• The ANSPs spent 6.7 M€2017 in 2023 related to costs of investments for both en route and terminal charging zones, -2.4% less than determined (6.9 M€2017). Although there was a difference in depreciation costs (+0.1 M€2017 or +2.2%) due to the commissioning of several assets that had been delayed since 2020, the cost of capital showed a gap (-0.3 M€2017 or -15%) primarily due to a significant reduction in net current assets (-2.1 M€2017 or -85%). However, the NSA did not provide a detailed explanation for this substantial reduction in net current assets.

• The en route actual unit cost incurred by users in 2023 was 50.65€ (+22% above the 2023 DUC), while the terminal actual unit cost incurred by users was 156.13€ (+4.6% above the 2023 DUC). The difference between the AUCU and the DUC for en route charging zone is strongly affected by the difference between the determined and actual SUs.

• The en route regulatory result for LGS amounted to +2.3 M€, or 11% of the 2023 revenue. This may indicate that the airspace users are charged for costs which have not materialised in 2023. The PRB will take into consideration the implementation of the RP3 performance plan when assessing the RP4 cost-efficiency targets.

2 SAFETY - LATVIA

2.1 PRB monitoring

• In 2023, LGS has improved its performance for safety policy and objective and risk management and consequently achieved the RP3 target levels for all management objectives.

• LGS implemented improvements in the procedures for change management and safety assessment. More developments are necessary in the area of Fatigue Risk Management and Emergency Response Plan.

• Despite the currently high performance of the ANSP, the NSA cautions that the ANSP might not be able to retain the RP3 targets due to financial and human resource issues as a result of the war in Ukraine.

• Latvia recorded stable performance with respect to safety risks with a single runway incursion and a single separation minima infringement in 2023.

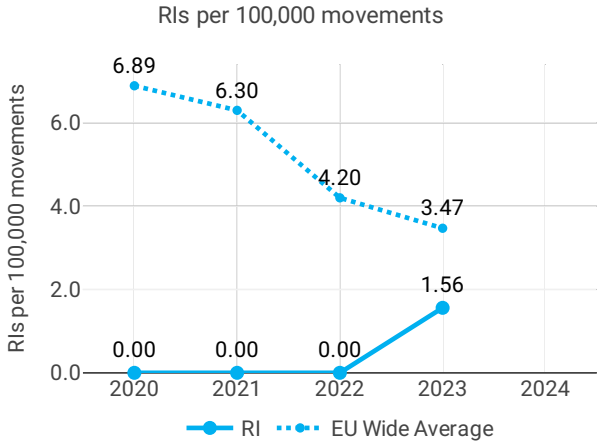
• LGS uses specific safety recording tools for separation minima infringements and runway incursions and is one of the few ANSPs that does so.

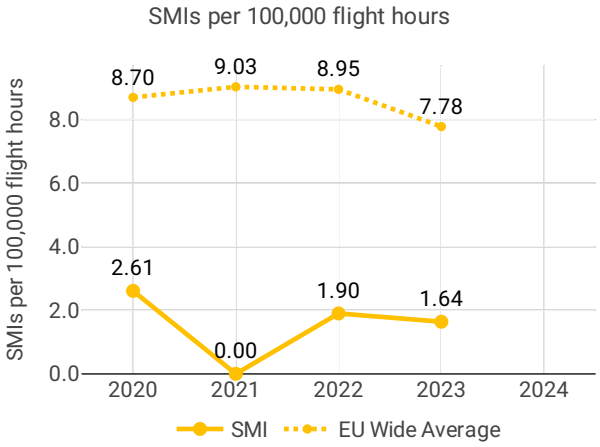
2.2 Effectiveness of Safety Management (EoSM) (KPI#1)

Focus on EoSM

All five EoSM components of the ANSP meet, or exceed, the RP3 target level. Over 2023, “Safety Policy and Objectives” and “Safety Risk Management” were improved and reached the RP3 target level.

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





3 ENVIRONMENT - LATVIA

3.1 PRB monitoring

• Latvia achieved a KEA performance of 7.97% compared to its target of 1.25% and did not contribute positively to the Union-wide target.

• The NSA states that the KEA deterioration was due to the continuation of significant route extensions as a result of Russia's war of aggression against Ukraine.

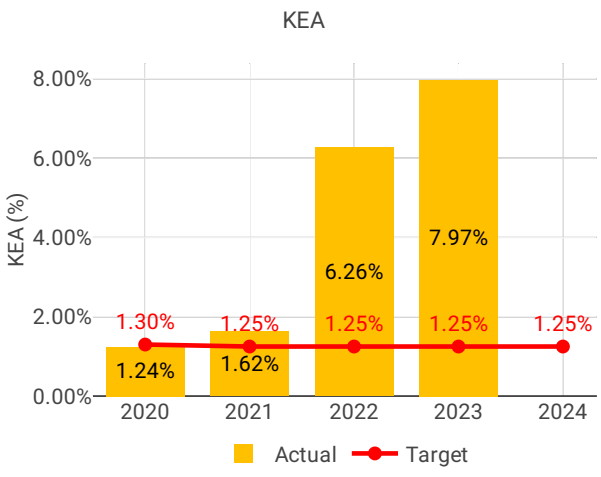
• Both KEP and SCR followed the same trend and worsened in comparison with 2022's performance.

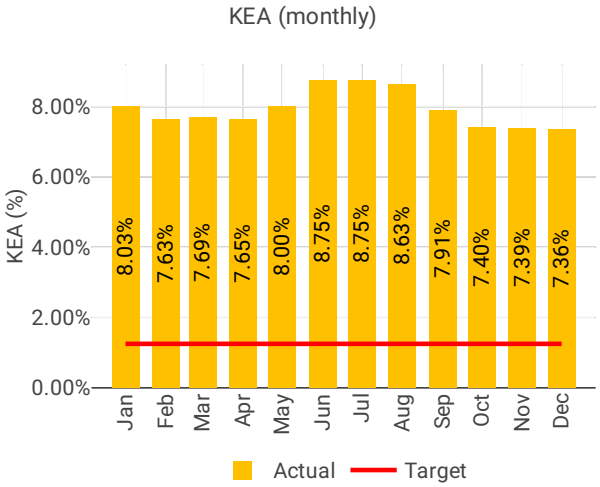
• The share of CDO flights decreased from 60.40% to 58.92% in 2023.

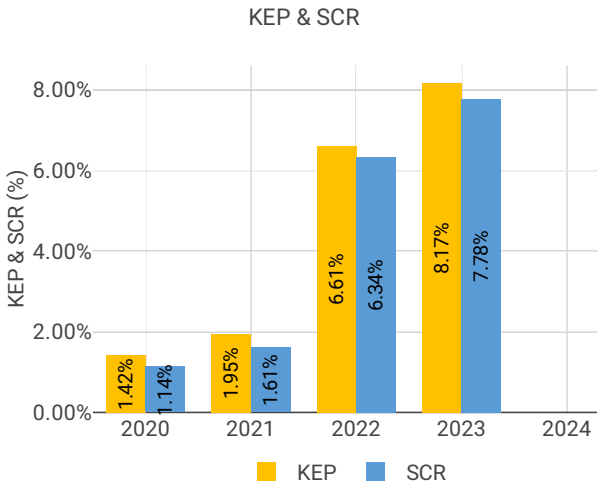
• During 2023, additional time in terminal airspace increased from 0.33 to 0.51 min/flight, while additional taxi out time increased from 2.82 to 2.66 min/flight.

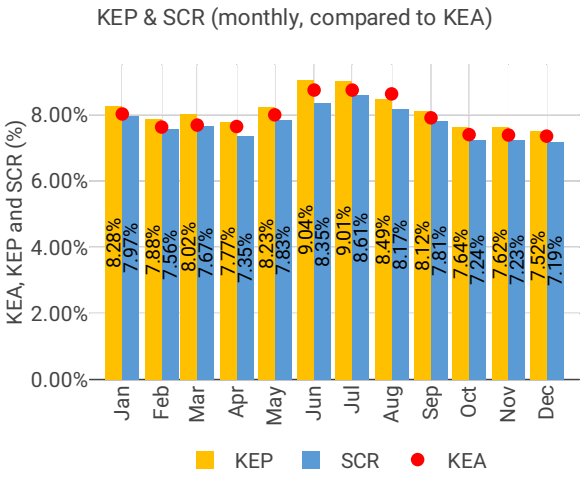
3.2 En route performance

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)



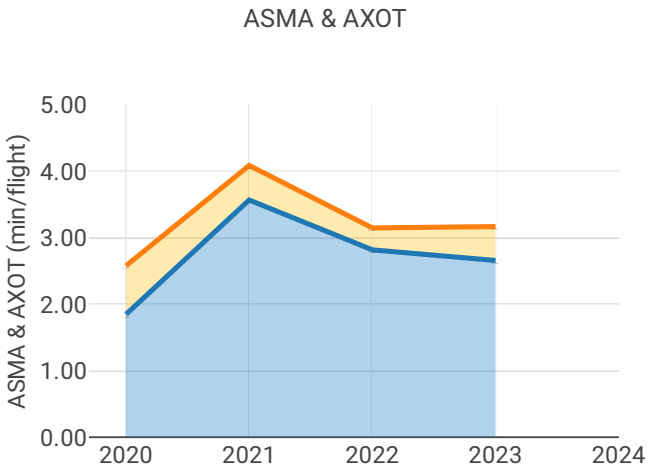


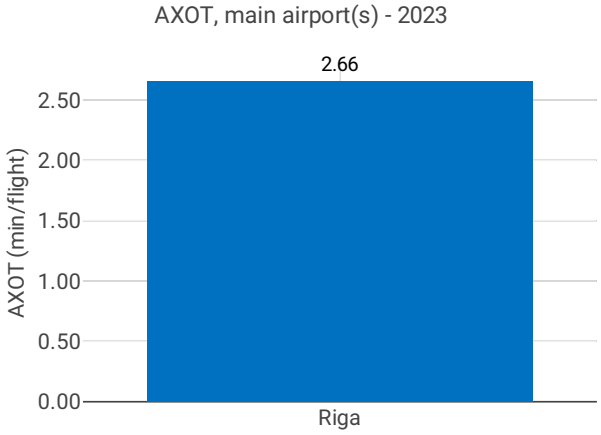


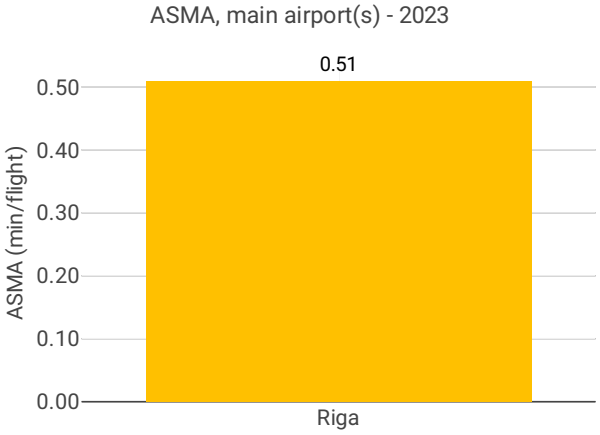


3.3 Terminal performance

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







Focus on ASMA & AXOT

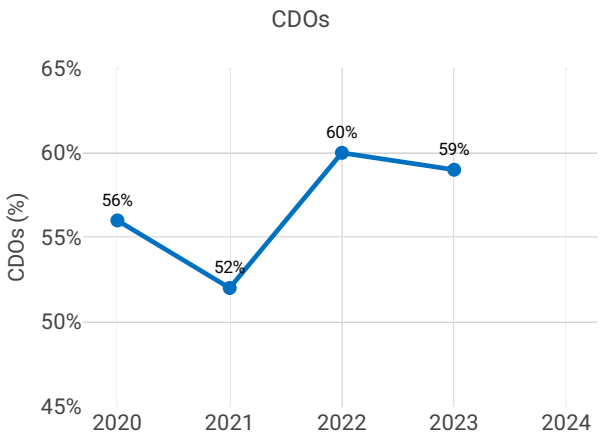
AXOT

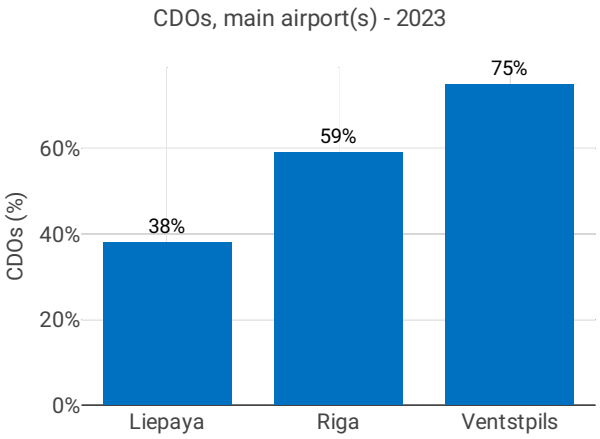
This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

ASMA

This indicator is not monitored for airports below 80 000 IFR movements average during the 2016-2018 period, so it is not monitored for any airport in this state.

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





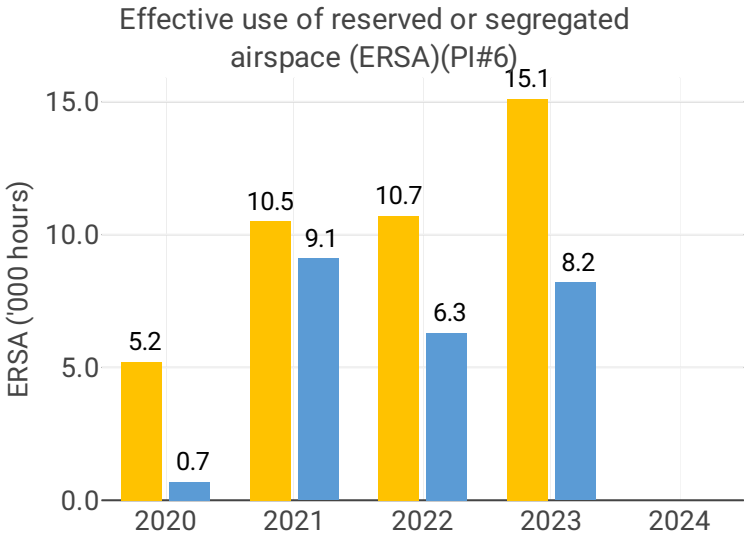
Focus CDOs

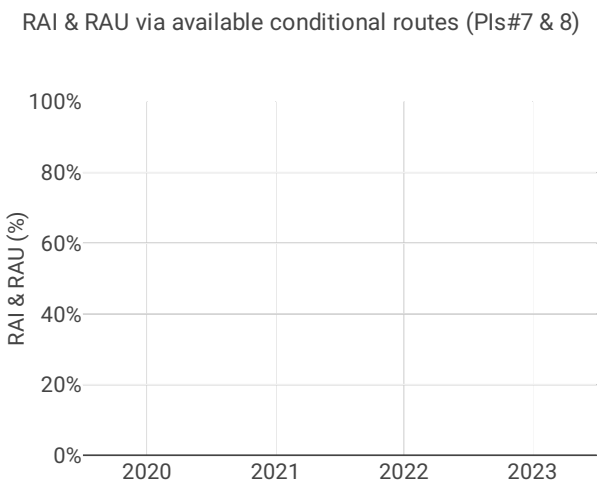
Liepaya had a significant increase of the share of CDO flights by 15.9 percentage points to 37.8%. 45 landing flights were detected at Liepaya in 2023.
Ventstpils had only 4 detected flights in 2023. Three of those flights were considered a CDO flight so Ventstpils has a share of 75% CDO.
Riga and Ventstpils have values well above the overall RP3 value in 2023 - 28.8% (EVRA: 59.0%; EVVA: 75.0%).According to the Latvian monitoring report: *EVVA (Ventstpils) airport does not have IFR flight procedures and doesn't have ATS.*
EVLA (Liepaja) has only AFIS, but it does have IFR flight procedures.

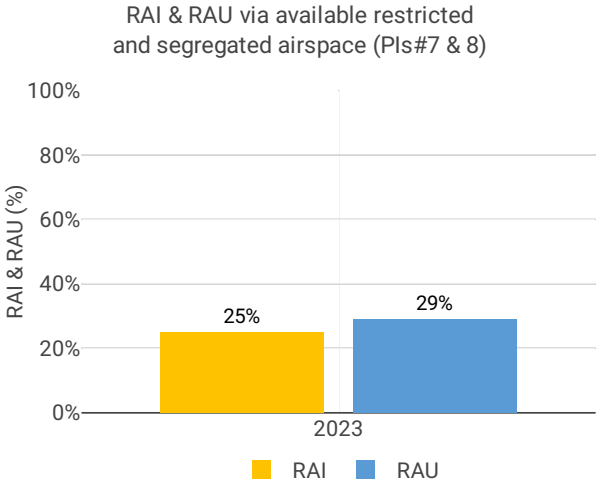
Airport level

	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
Riga	1.85	3.57	2.82	2.66	NA	0.73	0.52	0.33	0.51	NA	56%	53%	61%	59%	NA
Liepaya	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	66%	20%	22%	38%	NA
Ventstpils	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50%	88%	100%	75%	NA

3.4 Civil-Military dimension







Focus on Civil-Military dimension

Update on Military dimension of the plan

No precise measurements are currently available to analyze the impact of military activities on the environment Key Performance Area (KPA). However, it is expected that the impact of sanctions due to the Ukraine war on air traffic flows is much greater than military activities alone.
In 2023. LGS provided services for 2.756 military aircraft flights en route, amounting to a total of 189,870.22 EUR. Additionally, terminal services were provided for 1,317 military aircraft flights, amounting to 81,555.15 EUR. Furthermore, LGS handled other flights exempt from en route and terminal charges: 937 en route flights amounting to 14,899.29 EUR and 2,744 terminal flights amounting to 24,837.49 EUR. In total, these services amounted to 311,162.20 EUR in 2023.
Role of Airspace Design
The design of airspace plays a crucial role in managing the environmental impact of military operations. The segregation of airspace for military use, while necessary for national security, often results in longer flight paths for civilian aircraft, leading to increased fuel consumption and emissions. Efforts to redesign airspace to facilitate more direct routing, while accommodating military requirements, can mitigate some of these environmental impacts.
Procedures Used in Airspace Reservation
Procedures for reserving airspace for military activities are designed to balance the needs of both military and civilian air traffic. Effective coordination and flexible use of airspace can minimize disruptions and reduce the environmental impact. For instance, the implementation of temporary segregated areas (TSAs) and flexible use of airspace (FUA) allows for the dynamic allocation of airspace based on real-time needs, thereby optimizing airspace usage and minimizing unnecessary deviations.
Interoperability of Systems
Interoperability between military and civilian air traffic management systems is essential for efficient airspace management. Improved interoperability facilitates seamless coordination, reducing delays and optimizing flight paths. This, in turn, leads to lower fuel consumption and reduced emissions. The integration of advanced technologies and systems enhances the ability to manage mixed traffic effectively, contributing to better environmental performance.
Information Management
Accurate and timely information management is vital for minimizing the environmental impact of military activities. Real-time data sharing between military and civilian air traffic controllers ensures that airspace reservations are managed efficiently, reducing the need for holding patterns and reroutes that increase fuel burn. Enhanced information management supports better planning and execution of flights, thereby contributing to environmental sustainability.
Specific Local Circumstances and Economic Impact
The specific local circumstances in Latvia, including its geographical location and the presence of military training areas, significantly influence the impact of military activities on the environment. The proximity to conflict zones and the increased military presence due to geopolitical tensions necessitate more frequent and extensive military operations. This, combined with the need to accommodate rerouted civilian flights avoiding conflict zones, exacerbates the environmental impact.

The economic landscape in 2023 was marked by reduced air traffic due to the geopolitical situation and the aftermath of the COVID-19 pandemic. This reduction in traffic, combined with the high costs of inflation, created very unstable and unpredictable conditions for LGS. The lower income from decreased civilian air traffic and the increased costs due to inflation made financial planning extremely challenging. The provision of services to military flights, while necessary, did not fully compensate for the lost revenue from commercial flights, highlighting the financial strain on LGS.
Conclusion
While precise measurements of the environmental impact of military activities are not available, the combination of strategic airspace design, flexible airspace reservation procedures, improved system interoperability, and effective information management can significantly mitigate this impact. LGS's role in balancing military and civilian airspace needs, particularly in the context of heightened geopolitical tensions, underscores the importance of these measures in promoting environmental sustainability.
However, the reduced air traffic and the disastrous financial consequences of lower income and higher costs due to inflation create highly unstable and unpredictable conditions, rendering any planning and comparing to plans totally useless. This underscores the need for adaptive an

Military - related measures implemented or planned to improve capacity

No impact on the capacity has been observed. In order to avoid in the future any issues, assistance from Eurocontrol has been requested to optimize mil airspace design and airspace use procedures.

Initiatives implemented or planned to improve PI#6

Harmonization of civilmilitary airspace use procedures within 3 Baltic states is going. For the development of new military FUA aeras, assessment of Eurocontrol has been requested in order to optimize the design and FUA airspace use procedures, to minimise air traffic rerouting from Riga FIR altogether and to avoid disruption of the Riga airport operations.

Initiatives implemented or planned to improve PI#7

FRA has been implemented in 2015.

Initiatives implemented or planned to improve PI#8

FRA has been implemented in 2015.

4 CAPACITY - LATVIA

4.1 PRB monitoring

• Latvia registered zero minutes of average en route ATFM delay per flight during 2023, thus achieving the local target value of 0.03. Delays in Latvia remained unchanged year-on-year.

• The average number of IFR movements was 33% below 2019 levels in Latvia in 2023.

• The number of ATCOs in OPS is expected to increase by 9% by 2024, with the actual value being below the 2023 plan in Riga by 13 FTEs.

• The yearly total of sector opening hours in Riga ACC was 24,050, showing a 0.8% increase compared to 2022. Sector opening hours are 16.6% below 2019 levels.

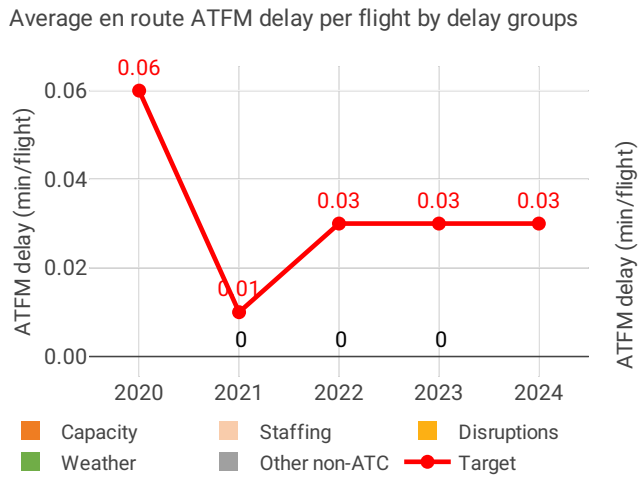
• Riga ACC registered 8.25 IFR movements per one sector opening hour in 2023, being 19.7% below 2019 levels.

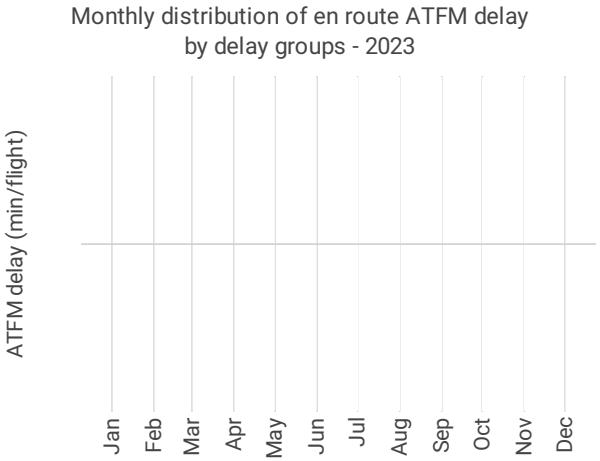
• Latvia registered an average airport arrival ATFM delay of 0.00 minutes per flight in 2023, achieving the local target of 0.02 minutes.

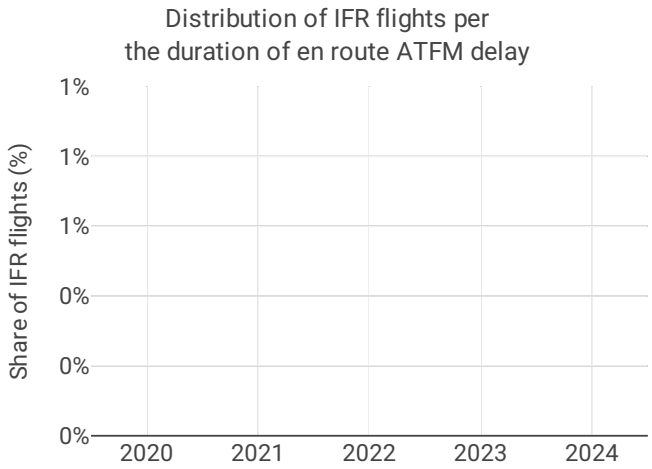
• Compared to 2022, the number of IFR arrivals in Latvia increased by 10.65%.

4.2 En route performance

4.2.1 En route ATFM delay (KPI#1)







Focus on en route ATFM delay

Summary of capacity performance

Latvia experienced an increase in traffic, from 186k flights in 2022 with zero delay, to 196k flights in 2023, also with zero ATFM delays.
Traffic levels are still much lower than the 2019 levels of 295k flights

NSA's assessment of capacity performance

The ongoing conflict in Ukraine, which began in 2022, continued to exert substantial influence on air traffic patterns and volumes in 2023. The sanctions imposed by the European Union (EU) against Russia, along with reciprocal sanctions by Russia, led to a dramatic shift in traffic flows. Specifically, flights between Europe and Russia remained suspended, and routes to and from China and Southeast Asia were significantly reduced. Sanctions forced Russian operators to navigate around EU airspace, leading to increased traffic over international waters in the Baltic Sea to connect Kaliningrad with mainland Russia.
Being a NATO state, which directly borders Russian Federation, the complexity of airspace has gone up. More military zones are being set up.
There were no capacity problems in Riga FIR and no capacity problems in an any of the aerodromes in 2023.

Monitoring process for capacity performance

Monitoring through annual inspections and safety meetings with the ANSP.

Capacity planning

Capacity planning is appropriate for the required performance. No ATFM delays were observed.

Application of Corrective Measures for Capacity (if applicable)

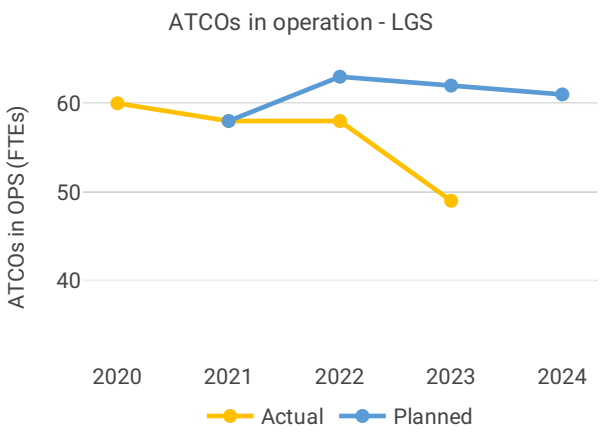
Due to staff shortage under specific circumstances there is a possibility that capacity could be impacted. Results of the ATCO fatigue risk and stress assessment revealed the necessary changes that must implemented by the ANSP - mainly- to ensure sufficient ATCO staffing numbers (increase of ATCOs), and to ensure appropriate rostering system implementation beyond excell sheet in order to comply with EU reg 2017/373 requirements for Fatigue Risk and Stress Management (FRSM).
The NSA intends to monitor the situation, to ensure proper application of the EU Reg 2017/373 requirements for FRMS.

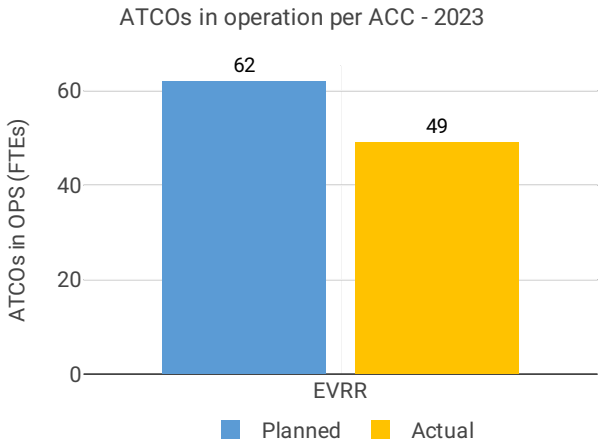
Additional Information Related to Russia's War of Aggression Against Ukraine The changes of traffic flows in Riga FIR were material. EU and RU banned one another's airspace users on entering the airspace. That lead to decline in flights to East Asia. Basically the Europe - Russian flight segment (a quarter of all flights prior to crisis) was fully wiped out. On the other hand Riga FIR now handles all the traffic to Kaliningrad exclave. This negatively impacts Environment Key Performance indicator. Latvia gained some extra traffic on north - south axis due to previously mentioned bans on use of airspaces.
Bordering Russia and being both EU and NATO member state, Latvia experiences more traffic complexity due to more military restriction zones.
All of the above does not directly effect the capacity performance expressed as ATFM delay KPI, however it adds complexity, volatility and uncertainty, especially financially (inability to pay by RU operators, volatility of traffic and decrease of average SU per flight).
To mitigate any possible impacts on en route capacity performance, due to higher than expected decline in number of ATCOs, ANSP is now training new ATCOs to replenish their amount to normal operational level of 62 ATCOs.

En route Capacity Incentive Scheme

LGS: The incentive scheme is under review by the European CommissionIn 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



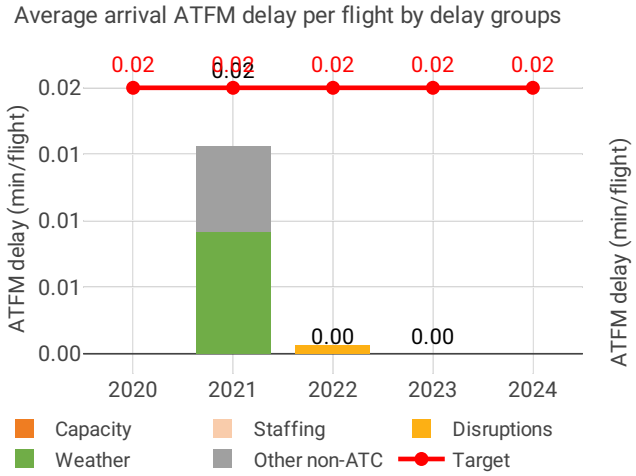


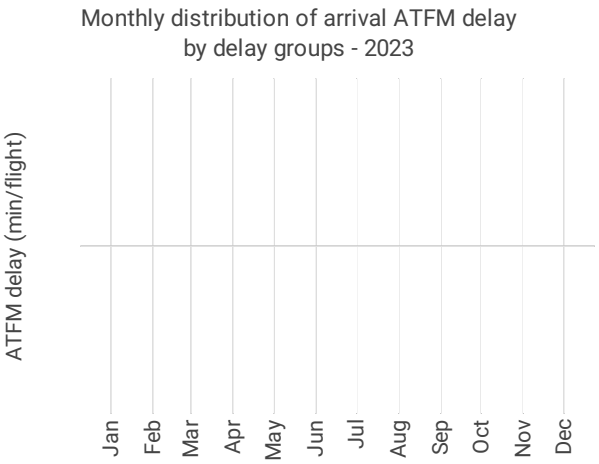
Focus on ATCOs in operations

The war in Ukraine had a material and adverse effect on the traffic flows. Those changes triggered the change of the assumptions in the Performance plan, which was adopted on December 5, 2022. The main assumption of the ATCO planning was that the operational capacity of 62 ATCOs is sufficient to cope with the traffic. Some ATCOs retired due to medical reasons and few left for other ANSPs in Europe, mainly due to financial reasons. There is a plan to replenish the ATCOs levels during the RP4, starting from 2024. The lower level of ATCOs is still sufficient to cope with lower level of traffic, however some non-ATCO duties are abolished in order to complete the operational roster.

4.3 Terminal performance

4.3.1 Arrival ATFM delay (KPI#2)





Focus on arrival ATFM delay

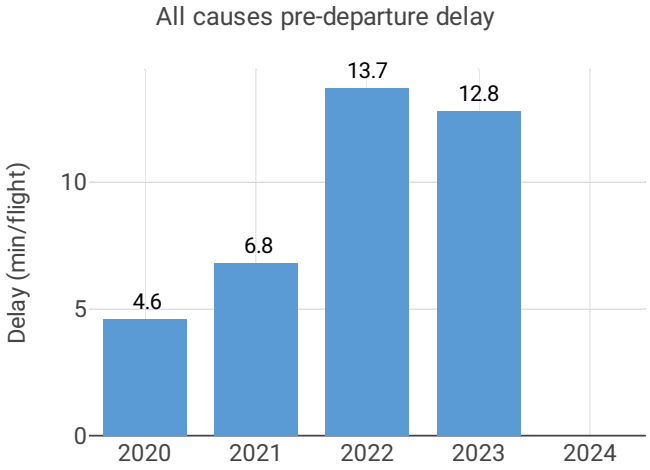
Latvia identified 4 airports as subject to RP3 monitoring. In accordance with IR (EU) 2019/317 and the traffic figures at these 4 airports, pre-departure delays are not monitored and the capacity performance monitoring focuses on arrival ATFM delay and slot adherence.
Traffic at these Latvian airports in 2023 was still 30% lower than in 2019, regardless of a 11% increase with respect to 2022.
No arrival ATFM delays were recorded at Latvian airports in 2023, same as in 2022. National target was met.
ATFM slot adherence remained very high at 99.5% in 2023 (2022: 99.6%).

Average arrival ATFM delays in 2023 were zero at all three Latvian airports.
The Latvian monitoring report clarifies: *EVVA has no ATS. EVRA and EVLA has no capacity issues. CDM has*

been voluntarily implemented by Riga airport and LGS to ensure a back up support, for expedient air traffic movement ir Riga airport.

The Latvian performance plan sets a national target on arrival ATFM delay for 2023 of 0.02 min/arr. This target was met with an actual performance of 0.00 min/arr. According to the Performance Plan, this should correspond to a maximum bonus of 2%, however the Latvian monitoring report does not declare 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	2021	2022	2023	2020	2021	2022	2023	2020
Liepaya	NA	NA	NA	NA	100.0%	100.0%	100.0%	NA
Riga	0.02	0.00	NA	NA	98.8%	99.6%	99.5%	98.4%

	ATC pre departure delay (PI#2)				All causes pre departure delay (PI#3)			
Airport name	2021	2022	2023	2020	2021	2022	2023	2020
Liepaya	NA	NA	NA	NA	NA	NA	NA	NA
Riga	0.03	0.02	0.03	NA	6.8	13.7	12.8	4.6

Focus on performance indicators at airport level

ATFM slot adherence

Riga's ATFM slot compliance was an excellent 99.5%. With regard to the 0.5% of flights that did not adhere, 0.4% was early and 0.1% was late.
EVVA did not have any regulated departures and EVLA had only 1, with a 100% slot adherence.
According to the Latvian monitoring report:
Overall, the performance has remained the same at 99% adherence to the ATFM slots in Riga airport and 100% at Liepaja.
EVVA (Ventstpils) has no ATS and EVLA (Liepaja) has only AFIS with limited working hours.

ATC pre-departure delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

All causes pre-departure delay

This indicator is not monitored for airports below 80 000 IFR movements annual average during the 2016-2018 period, so it is not monitored for any airport in Latvia.

5 COST-EFFIENCY - LATVIA

5.1 PRB monitoring

• The en route 2023 actual unit cost of Latvia was 38.45 €2017, +8.0% higher than the determined unit cost (35.62 €2017). The terminal 2023 actual unit cost was 152.45 €2017, +16% higher than the determined unit cost (131.92 €2017).

• The en route 2023 actual service units (0.47M) were -15% lower than the determined service units (0.55M), mainly due to shifted traffic flows caused by the Russia's war of aggression against Ukraine.

• The en route 2023 actual total costs were -1.6 M€2017 (-8.2%) lower than determined. The reduction in total cost was due to the lower staff costs (-1.3 M€2017, or -12%) which was a result of a reduction in staff numbers driven by lower than anticipated traffic volumes. In addition, other operating costs were lower than planned (-0.6 M€2017 or -13%), largely attributable to the MET provider LVĢMC, stemming from the cancellation and deferral of planned acquisitions.

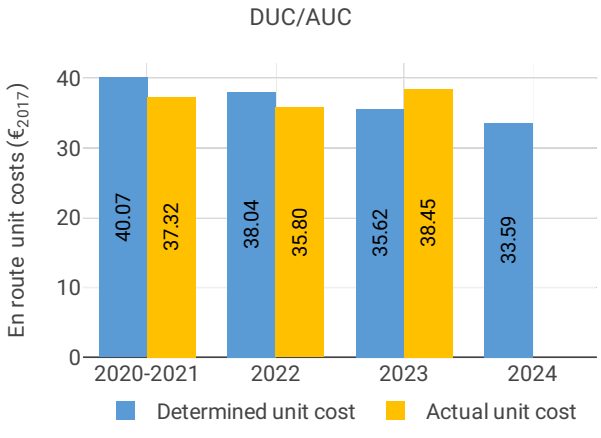
• The ANSPs spent 6.7 M€2017 in 2023 related to costs of investments for both en route and terminal charging zones, -2.4% less than determined (6.9 M€2017). Although there was a difference in depreciation costs (+0.1 M€2017 or +2.2%) due to the commissioning of several assets that had been delayed since 2020, the cost of capital showed a gap (-0.3 M€2017 or -15%) primarily due to a significant reduction in net current assets (-2.1 M€2017 or -85%). However, the NSA did not provide a detailed explanation for this substantial reduction in net current assets.

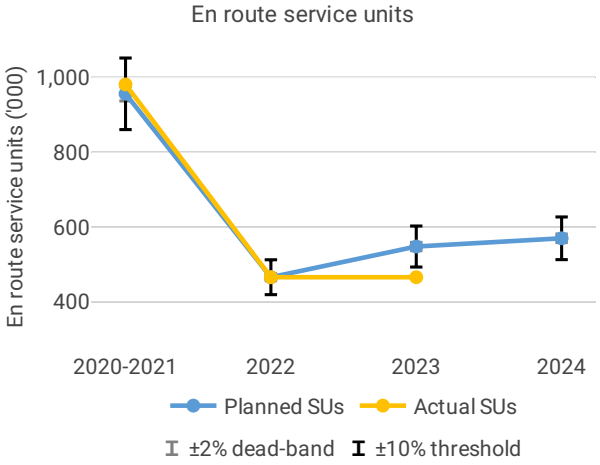
• The en route actual unit cost incurred by users in 2023 was 50.65€ (+22% above the 2023 DUC), while the terminal actual unit cost incurred by users was 156.13€ (+4.6% above the 2023 DUC). The difference between the AUCU and the DUC for en route charging zone is strongly affected by the difference between the determined and actual SUs.

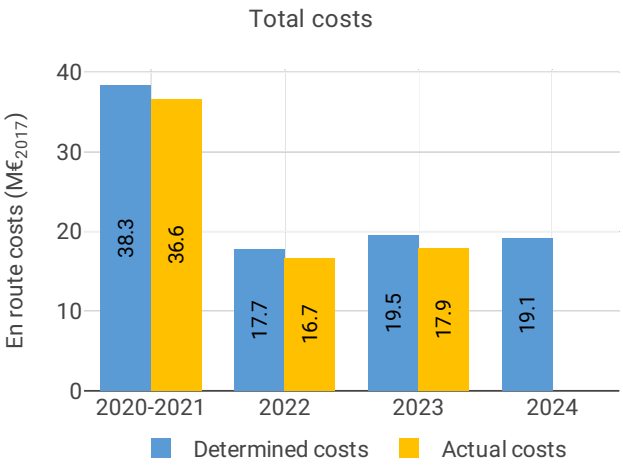
• The en route regulatory result for LGS amounted to +2.3 M€, or 11% of the 2023 revenue. This may indicate that the airspace users are charged for costs which have not materialised in 2023. The PRB will take into consideration the implementation of the RP3 performance plan when assessing the RP4 cost-efficiency targets.

5.2 En route charging zone

5.2.1 Unit cost (KPI#1)



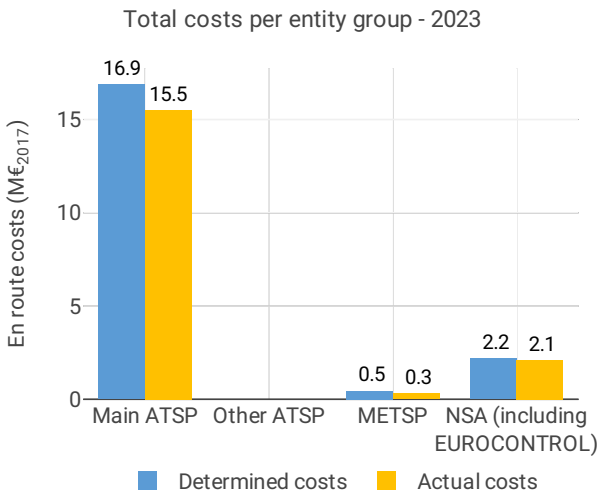


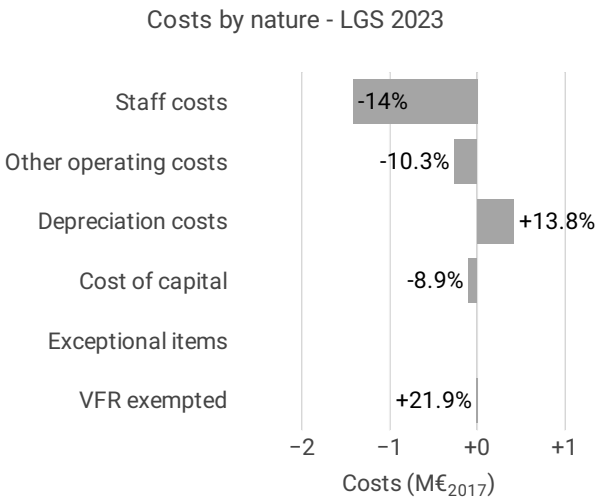


Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	38	20	22	NA
Determined costs	40	20	23	23
Difference costs	-2	0	0	NA

Inflation assumptions	2020-2021	2022	2023	2024
Determined inflation rate	NA	10.0%	3.9%	3.1%
Determined inflation index	NA	119.7	124.3	128.1
Actual inflation rate	NA	17.2%	9.1%	NA
Actual inflation index	NA	127.5	139.2	NA
Difference inflation index (p.p.)	NA	+7.8	+14.8	NA





Focus on unit cost

AUC vs. DUC

In 2023, the en route AUC was +8.0% (or +2.83 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TSUs (-15.0%) and significantly lower than planned en route costs in real terms (-8.2%, or -1.6 M€2017). It should be noted that actual inflation index in 2023 was +14.8 p.p. higher than planned.

En route service units

The difference between actual and planned TSUs (-15.0%) falls outside the ±10% threshold foreseen in the traffic risk sharing mechanism. The resulting loss of en route revenues is therefore shared between the ANSP and the airspace users .

En route costs by entity

Actual real en route costs are -8.2% (-1.6 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LGS (-8.1%, or -1.4 M€2017), the MET service provider (-32.7%, or -0.1 M€2017) and the NSA/EUROCONTROL (-4.2%, or -0.1 M€2017).

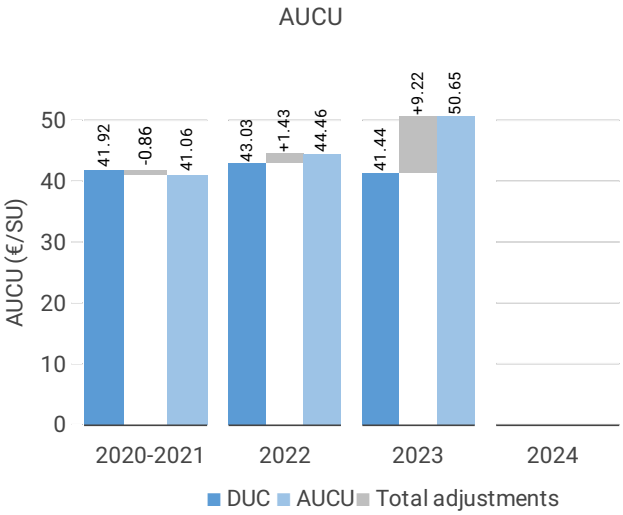
En route costs for the main ANSP at charging zone level

Significantly lower than planned en route costs in real terms for LGS in 2023 (-8.1%, or -1.4 M€2017) result from:

- Significantly lower staff costs (-14.0%), reflecting reduction in staff numbers due to lower than planned traffic volumes.
- Significantly lower other operating costs (-10.3%) in real terms, reflecting primarily the impact of the inflation index (+14.8 p.p.) since, in nominal terms, other operating costs are mostly in line with the plan

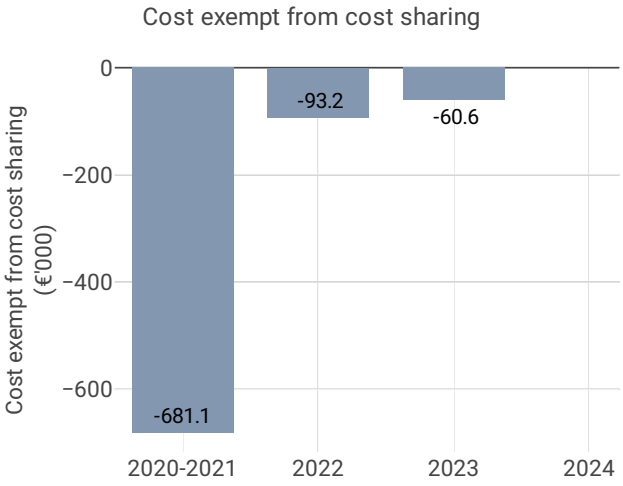
(+0.4%).
- Significantly higher depreciation (+13.8%), reflecting the "*commissioning of initially (2020-2021) delayed investments in 2023*".
- Significantly lower cost of capital (-8.9%), which, since LGS is entirely financed through equity, reflects lower actual asset base used to calculate the cost of capital.
- Higher deduction for VFR exempted flights (+21.9%).

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



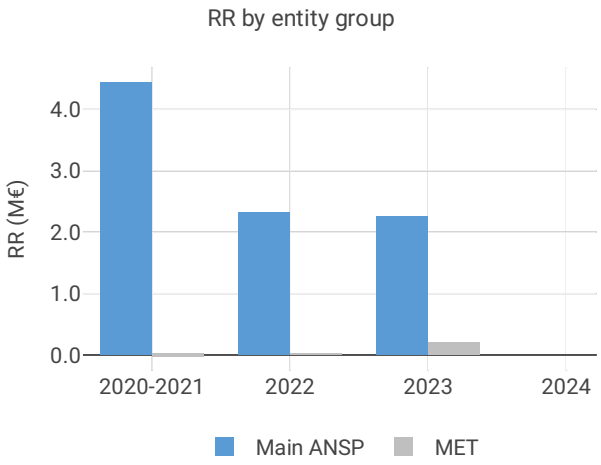
AUCU components (€/SU) – 2023

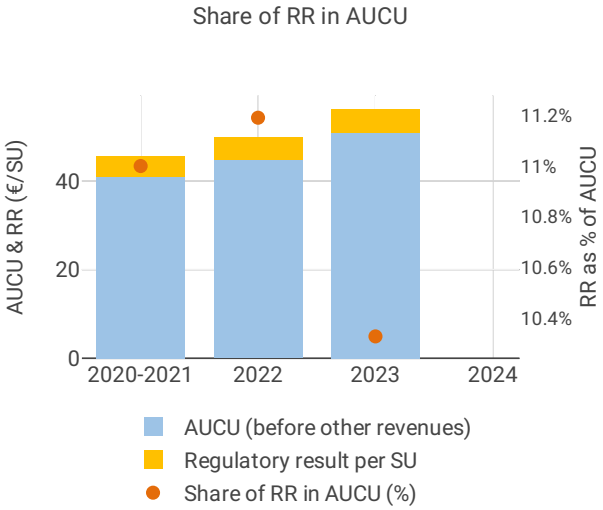
Components of the AUCU in 2023	€/SU
DUC	**41.44**
Inflation adjustment	4.17
Cost exempt from cost-sharing	-0.13
Traffic risk sharing adjustment	4.33
Traffic adj. (costs not TRS)	1.18
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-0.33
Application of lower unit rate	0.00
Total adjustments	9.22
AUCU	**50.65**
AUCU vs. DUC	**+22.2%**

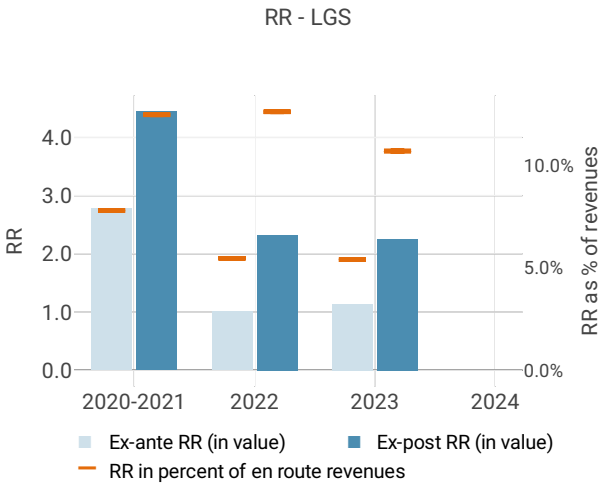


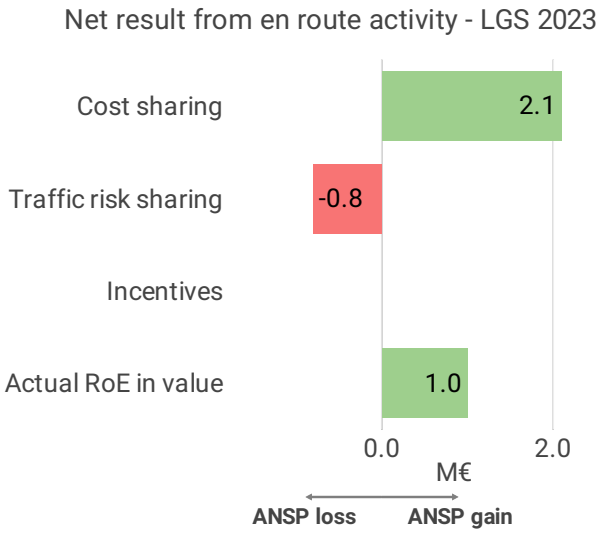
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	95.6	0.21
Competent authorities and qualified entities costs	-11.9	-0.03
Eurocontrol costs	-80.8	-0.17
Pension costs	-63.5	-0.14
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-60.6**	**-0.13**

5.2.3 Regulatory result (RR)









Focus on regulatory result

LGS net gain on activity in the Latvia en route charging zone in the year 2023

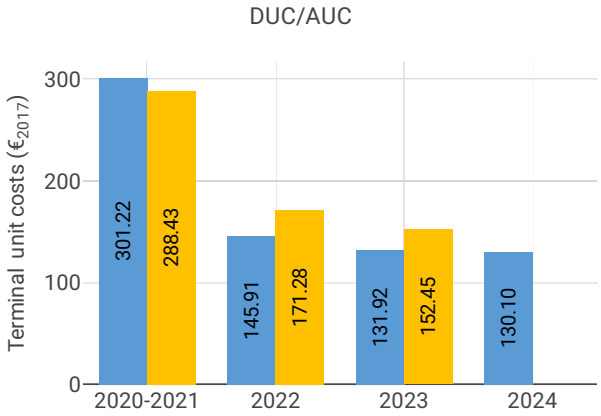
LGS reported a net gain of +1.2 M€, as a combination of a gain of +2.1 M€ arising from the cost sharing mechanism, with a loss of -0.8 M€ arising from the traffic risk sharing mechanism.

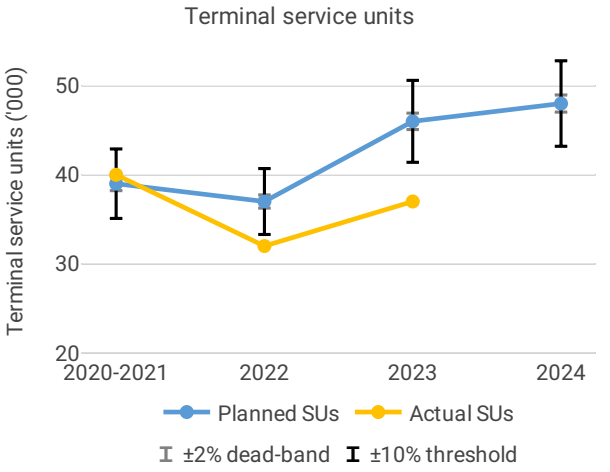
LGS overall regulatory results (RR) for the en route activity

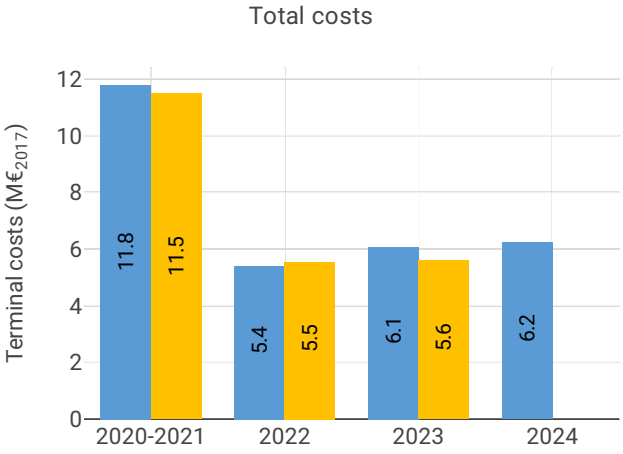
Ex-post, the overall RR taking into account the net gain from the en route activity mentioned above (+1.2 M€) and the actual RoE (+1.0 M€) amounts to +2.3 M€ (10.7% of the en route revenues). The resulting ex-post rate of return on equity is 10.9%, which is higher than the 5.0% planned in the PP.

5.3 Terminal charging zone

5.3.1 Unit cost (KPI#1)

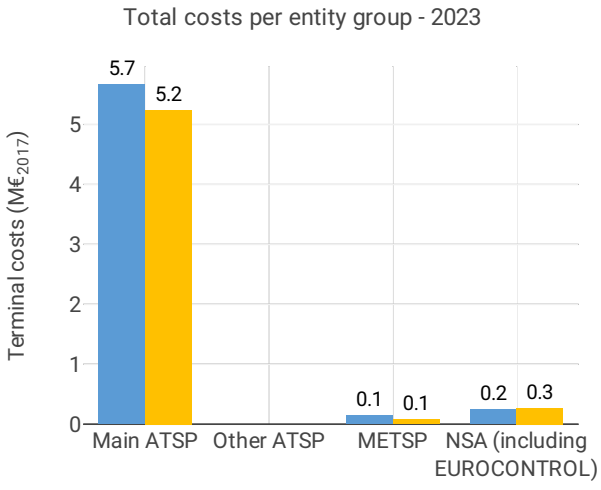


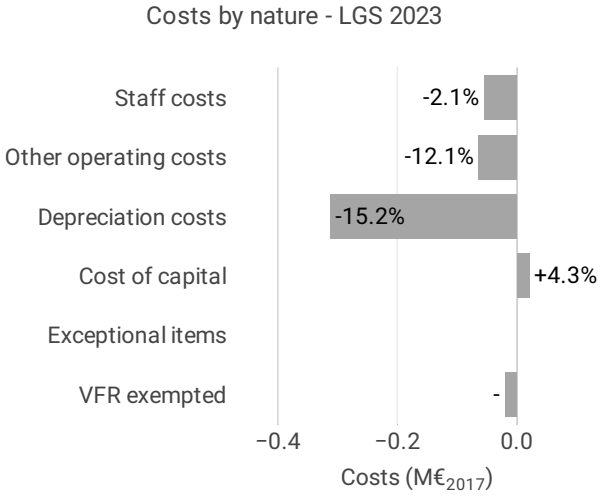




Actual and determined data

Total costs - nominal (M€)	2020-2021	2022	2023	2024
Actual costs	12	6	7	NA
Determined costs	12	6	7	7
Difference costs	0	0	0	NA
Inflation assumptions	**2020-2021**	**2022**	**2023**	**2024**
Determined inflation rate	NA	10.0%	3.9%	3.1%
Determined inflation index	NA	119.7	124.3	128.1
Actual inflation rate	NA	17.2%	9.1%	NA
Actual inflation index	NA	127.5	139.2	NA
Difference inflation index (p.p.)	NA	+7.8	+14.8	NA





Focus on unit cost

AUC vs. DUC

In 2023, the terminal AUC was +15.6% (or +20.53 €2017) higher than the planned DUC. This results from the combination of significantly lower than planned TNSUs (-20.3%) and significantly lower than planned terminal costs in real terms (-7.9%, or -0.5 M€2017). It should be noted that actual inflation index in 2023 was +14.8 p.p. higher than planned.

Terminal service units

The difference between actual and planned TNSUs (-20.3%) 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 .

Terminal costs by entity

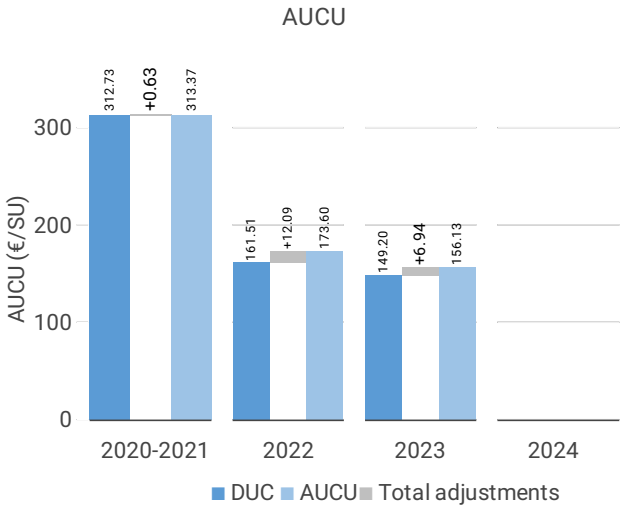
Actual real terminal costs are -7.9% (-0.5 M€2017) lower than planned. This is the result of lower costs for the main ANSP, LGS (-7.6%, or -0.4 M€2017) and the MET service provider (-50.1%, or -0.1 M€2017) and higher costs for the NSA (+10.3%, or +0.03 M€2017).

Terminal costs for the main ANSP at charging zone level

Significantly lower than planned terminal costs in real terms for LGS in 2023 (-7.6%, or -0.4 M€2017) result from:

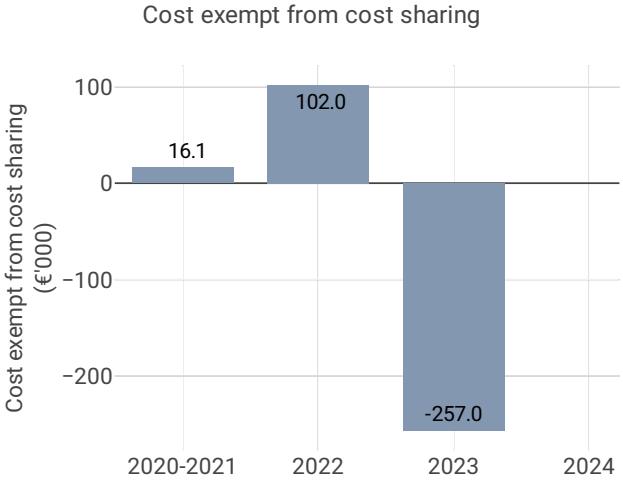
- Lower staff costs (-2.1%) in real terms, reflecting primarily the impact of the inflation index (+14.8 p.p.) since, in nominal terms, staff costs are significantly higher than planned (+9.6%), which is explained by increase in "*salaries for Air Traffic Control Officers (ATCOs) and other staff categories*".
- Significantly lower other operating costs (-12.1%), reflecting primarily the impact of the inflation index since, in nominal terms, costs were only slightly below planned (-1.6%).
- Significantly lower depreciation (-15.2%), explained by "*commissioning of investments for terminal with longer depreciation schedules*".
- Higher cost of capital (+4.3%), which, since LGS is entirely financed through equity, reflects higher actual asset base used to calculate the cost of capital.

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



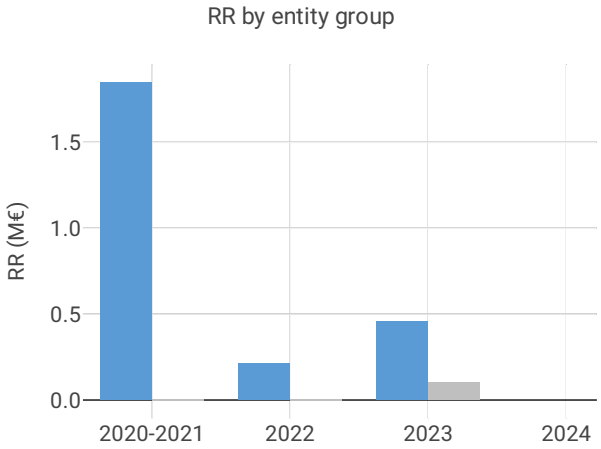
AUCU components (€/SU) – 2023

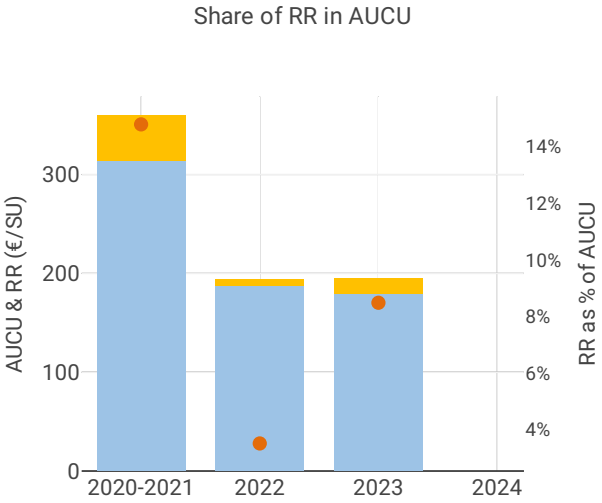
Components of the AUCU in 2023	€/SU
DUC	**149.20**
Inflation adjustment	13.22
Cost exempt from cost-sharing	-7.01
Traffic risk sharing adjustment	26.30
Traffic adj. (costs not TRS)	4.52
Finantial incentives	0.00
Modulation of charges	0.00
Cross-financing	0.00
Other revenues	-23.54
Application of lower unit rate	-6.54
Total adjustments	6.94
AUCU	**156.13**
AUCU vs. DUC	**+4.6%**

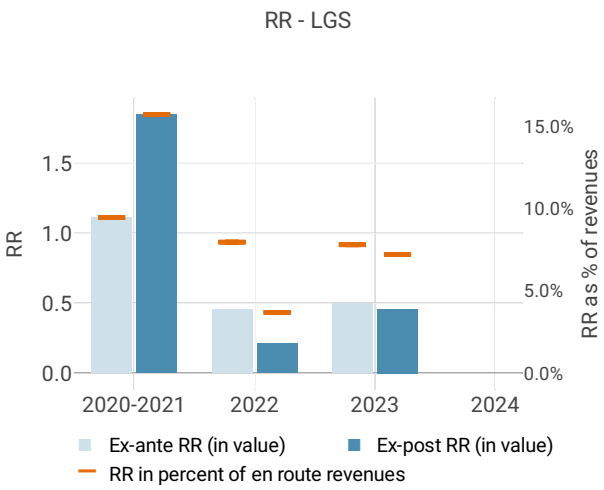


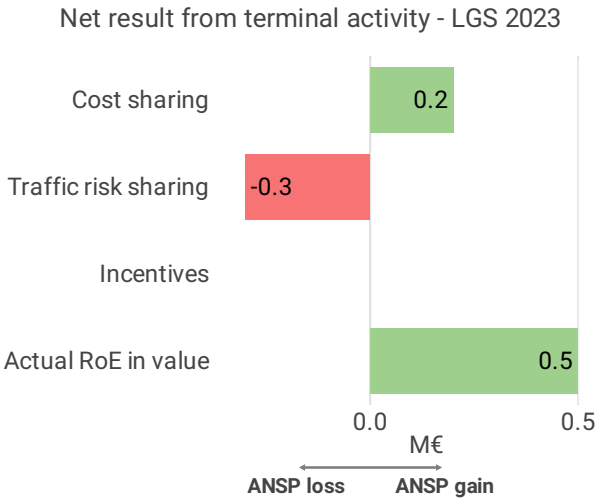
Cost exempt from cost sharing by item - 2023	€'000	€/SU
New and existing investments	-282.5	-7.71
Competent authorities and qualified entities costs	25.5	0.69
Eurocontrol costs	0.0	0.00
Pension costs	0.0	0.00
Interest on loans	0.0	0.00
Changes in law	0.0	0.00
Total cost exempt from cost risk sharing	**-257.0**	**-7.01**

5.3.3 Regulatory result (RR)









Focus on regulatory result

LGS net gain on activity in the Latvia terminal charging zone in the year 2023

LGS reported a net loss of -0.1 M€, as a combination of a gain of +0.2 M€ arising from the cost sharing mechanism, with a loss of -0.3 M€ arising from the traffic risk sharing mechanism.

LGS 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 (-0.1 M€) and the actual RoE (+0.5 M€) amounts to +0.5 M€ (7.2% of the terminal revenues). The resulting ex-post rate of return on equity is 4.4%, which is lower than the 5.0% planned in the PP.