# Annual report on HS1 Ltd 2023 to 2024


## Executive summary

This report sets out our assessment of the regulated aspects of HS1 Ltd's operational and financial performance for the financial year 1 April 2023 to 31 March 2024, which was the fourth year of Control Period 3 (CP3, which runs from 1 April 2020 to 31 March 2025).

More information on our regulation of HS1 Ltd, including previous years' reports, can be accessed on our website.

We report here on our assessment of the company's delivery against the final determination and decisions of our and the Department for Transport's (DfT's) periodic reviews of HS1 Ltd 2019 respectively (PR19s), in accordance with our policies for holding HS1 Ltd to account in CP3 for the route and stations.

More information on PR19 can be found on our website. We published our approach and process for the next periodic review of HS1 Ltd, PR24, on 31 January 2023.

The key issues over the last year were:

## Health and Safety

In the previous year, the key performance indicator for workforce safety fell outside the threshold value of 0.060 fatalities and weighted injuries per million hours worked.

This year we were pleased to see improvements and this indicator has now returned to within the threshold. As the asset life cycle progresses (moving from new assets, into the first full cycle of renewals), incidents this year highlighted the importance of HS1 Ltd and its contractors having appropriate arrangements in place to manage current and future risks.

In particular, we note the work that HS1 Ltd has started in the reporting year alongside train operators and other infrastructure managers to develop and improve arrangements for the recovery of stranded trains on its own and neighbouring infrastructure, and will be closely monitoring how these parties work together to ensure better management of future potential incidents.

## Traffic volume and train service performance

Traffic volume on the HS1 route increased by 3% in the period 1 April 2023 to 31 March 2024 compared to the previous year. However, services were still 18% below the number operated in the period April 2019 to March 2020, before the impact of the coronavirus (COVID-19) pandemic.

The number of services delayed by HS1 Ltd-attributable incidents during the year was 458 (0.76% of all services using the network), an increase on the previous year which saw 256 (0.44%) of services run delayed. This remains substantially better than the company's requirement set out in its Concession Agreement for operation of the HS1 route (not to exceed 13%).

Recognising that passengers and freight users demand a level of train performance considerably higher than the minimum contractual requirement, HS1 Ltd sets itself a stretching target for train performance. This is based on the average number of seconds each train was delayed, by incidents attributed to HS1 Ltd.

This year the average delay was 11.83 seconds per train (an increase of 65% on the year before), compared to a target of 6.85 seconds per train. This is the second year in a row where HS1 Ltd has failed to meet its self-imposed target.

## Asset Management

Last year, we reported our concern that the availability of lift and escalators at stations were below the targets set by HS1 Ltd to meet train operators' needs and expectations.

Over the last year, their availability improved and returned to above the target by the middle of the year. However there have continued to be issues with these assets and availability has fallen below the target several times towards the end of the year.

HS1 Ltd proposed improvement plans which relied heavily on improving contractor performance, and we have seen evidence of this delivering results in the short term. However, for the longer term HS1 Ltd needs to improve its understanding of these assets' performance through improved condition data, and better remote monitoring that will allow investment to be more effectively targeted. We are scrutinising these long-term plans through the PR24 process.

The reporting year also saw the continued implementation of improvements to the planning of renewals delivery. The resulting route and stations renewals portfolios significantly reduced planned volumes this year, with the intention of greater certainty in the remaining two years of the control period.

At stations, HS1 Ltd actually delivered 248% of its planned renewals, which gave rise to a large number of change control papers and challenges to estimated costs. This amount of change is indicative of immature asset management and estimating.

There is still work to be done to increase certainty in stations plans, which we will address in PR24. In contrast, the more moderate over-delivery (120%) of route renewals has been because of better possessions planning around multiple assets.

Through PR24, we are seeking to understand how this approach will be expanded to enable the forecast step-up in the level of renewals at the next control period.

## Finance and efficiency

HS1 Ltd received £105.7m of regulated income this reporting year, £10.6m higher than assumed in our PR19 forecast. This included £4.2m higher recovery on international services, £6.3m higher recovery on domestic passenger services following charging reopeners to reflect actual traffic volumes; and £0.2m of higher recovery costs for freight services.

HS1 Ltd's own costs were £0.9m higher than assumed at PR19, which the company has attributed to additional work following the pandemic.

These costs have been absorbed by HS1 Ltd and it has stated that it is implementing structural changes to reduce internal costs in line with its regulatory budget by the end of CP3. HS1 Ltd has also indicated that it is not seeking to increase previously forecasted costs for the following control period, CP4 (1 April 2025 to 31 March 2030).

We are currently assessing HS1 Ltd's proposed costs for CP4 through PR24.

Network Rail (High Speed) Ltd (NR(HS)) is HS1 Ltd's primary supplier, managing most of the physical rail infrastructure on the network. NR(HS) reported £3.8m of efficiencies for the year, ahead of its £2.9m target.

These savings included £2.4m of lower staff costs due to improved managing of vacancy gaps and workforce reform benefits; and £1.2m of savings from a revised provision of support services agreement with Network Rail Infrastructure Ltd. NR(HS) currently expects to meet our PR19 efficiency challenge for CP3.

# Background

HS1 Ltd has a 30-year Concession Agreement from the Secretary of State for Transport to operate and manage the HS1 route, and concurrent leases for the four stations on the network.

HS1 Ltd is responsible for the overall management and operation of the HS1 network. However, it subcontracts delivery of operations, maintenance and renewals to NR(HS) for all its assets, apart from Ashford International station which was subcontracted to Mitie Plc (Mitie).

However, during the last year, this subcontract ended and a new subcontract established with ABM Technical Solutions (ABM). NR(HS) and ABM are therefore the safety dutyholders for the HS1 network, responsible for compliance with regulatory requirements relating to the management of safety on the HS1 network.

We are the health and safety regulator for the HS1 network under the conventional suite of legislation. HS1 Ltd has economic regulation responsibilities through the terms of the Concession Agreement and the Railways Infrastructure (Access and Management) Regulations 2016 ("the Regulations"), as amended in 2020.

Under the terms of the Concession Agreement and leases, we have a role in ensuring the long-term sustainability of the assets, while making sure that HS1 Ltd is incentivised to ensure infrastructure costs and access charges are efficient.

The Concession Agreement requires HS1 Ltd to secure the operation, maintenance, renewal, replacement, planning and carrying out of upgrades in accordance with best practice and in a timely, efficient and economical manner, to the greatest extent reasonably practicable, having regard to all circumstances.

The station leases require that HS1 Ltd acts in accordance with industry good practice and undertakes such works of renewals and replacement which, in its reasonable opinion, are necessary for each station to be in good and substantial repair until 1 April 2061.

We undertook our latest periodic review of HS1 Ltd in 2019, assessing HS1 Ltd's Five- Year Asset Management Statement for this control period (CP3, 1 April 2020 – 31 March 2025). Further to our final determination, we monitor performance annually through data provided by HS1 Ltd against key metrics in the following areas:

- health and safety
- train service performance
- asset management
- financial performance and efficiency

Until 27 July 2022, the DfT was responsible for the periodic review of HS1 stations and associated monitoring of HS1 Ltd's management of those station assets. We then took on those duties for stations and published an interim policy for holding HS1 Ltd to account against DfT's PR19 decision from that date, setting out our focus on the following areas:

- station asset information
- financial reporting, including the calculation of efficiency
- use of risk and contingency provisions
- the delivery of efficiencies set out in its Life Cycle Report for each station

More information on our approach to monitoring and reporting on HS1 Ltd in CP3 can be found on our website.

## Health and safety

HS1 Ltd contracts much of its operating, maintenance and renewal functions to NR(HS) and ABM. We consider that all these organisations have obligations under health and safety legislation.

Both NR(HS) and ABM hold safety authorisations as infrastructure managers under the Railways and Other Guided Transport Systems (Safety) Regulations. NR(HS) is responsible for the operation of HS1 railway infrastructure from London St. Pancras to the Channel Tunnel, as well as London St Pancras International, Stratford International and Ebbsfleet International stations.

During the reporting year, responsibility for the fourth station on the network, Ashford International, was passed from Mitie to ABM. As the new station facility owner, we issued ABM with a five-year safety authorisation to act as an infrastructure manager on 1 October 2023.

HS1 Ltd retains its own health and safety responsibilities, having an important role as both the asset steward and client for works on its network, stations and associated infrastructure.

The HS1 network has historically seen relatively low levels of incidents and accidents involving members of the public and the workforce. However, the previous reporting year saw a number of incidents of injuries to NR(HS) and other contractors' employees.

This year, HS1 Ltd has worked collaboratively with NR(HS) and other contractors to implement arrangements to bring about the necessary improvements in health and safety risk control.

In the previous year, the key performance indicator for workforce safety performance (fatalities and weighted injuries (FWI) per million hours worked) fell outside the target set by HS1 Ltd, of 0.060. This year we were pleased to see the FWI score return to below the threshold of 0.060, with an aggregate figure of 0.055 FWI across the year.

There has been a slight reduction in the number of incidents involving contractors' staff compared with the previous reporting year, with most incidents resulting from assaults to front-line staff. While this trend is unfortunately replicated across much of the railway industry and wider society, HS1 Ltd; its contractors; and key industry stakeholders have taken action to address this issue across its operations.

Actions taken included the roll-out of body-worn cameras to customer-facing staff and intelligence-led deployment of British Transport Police resources.

There were two incidents of note during the reporting year which, under slightly different circumstances, could have had potentially serious outcomes:

On 16 November 2023, two on-track machines operated by a contractor collided at low speed while working in an engineering possession of the railway tracks/network. A member of the contractor's staff was struck by one of the machines and lost consciousness. Fortunately, they made a prompt recovery, suffering no long-term effects because of the incident. The matter remains under investigation by the Rail Accident Investigation Branch.

On 30 November 2023, an incident took place at the HS1–Eurotunnel network boundary that resulted in the dewirement of the overhead line equipment and the stranding of a Eurostar train service travelling from London St. Pancras International to Amsterdam Central station.

While there were no injuries, it took around eight hours for the train to be recovered, during which time the conditions for the approximately 800 passengers and crew onboard deteriorated considerably. We note that subsequently HS1 Ltd has started work with train operators and infrastructure managers to develop and improve the arrangements for the recovery of stranded trains on its own and neighbouring infrastructure.

We will continue to monitor how HS1 Ltd works with these other parties to ensure better management of future potential incidents.

We also note a flooding incident that occurred in the Thames Tunnel in December 2023, resulting in the suspension of domestic and international services to and from London St. Pancras International. Although there were no safety incidents directly related to the flooding, it was necessary for the station staff to implement crowd management arrangements at London St. Pancras International.

This reporting year we carried out the following health and safety regulatory activities:

- **supervision**, including monthly liaison meetings with NR(HS)'s safety leadership team, and quarterly liaison meetings with HS1 Ltd's Head of Assurance, to discuss safety performance, improvement plans and incidents
- **permissioning**: the assessment and acceptance of ABM's application for a safety authorisation in respect of its role as the infrastructure manager and station facility

operator for Ashford International station

While HS1 Ltd and its contractors continue to manage the health and safety risks associated with high-speed operations, recent incidents have shown the potential risks to both staff and customers.

Combined with the progression of the HS1 asset life cycle (moving from 'new' assets into the first full cycle of renewals), it is important that HS1 Ltd and its contractors have appropriate arrangements in place to manage current and future risks.

Further information on health and safety performance on all of Britain's railways can be found in our annual health and safety report, and the Rail Safety and Standards Board (RSSB) Annual Safety Performance Report.

Information on our approach to regulating health and safety risks can be found in the strategic risk priorities section of our website.

# Traffic volume and train service performance

## Traffic volume

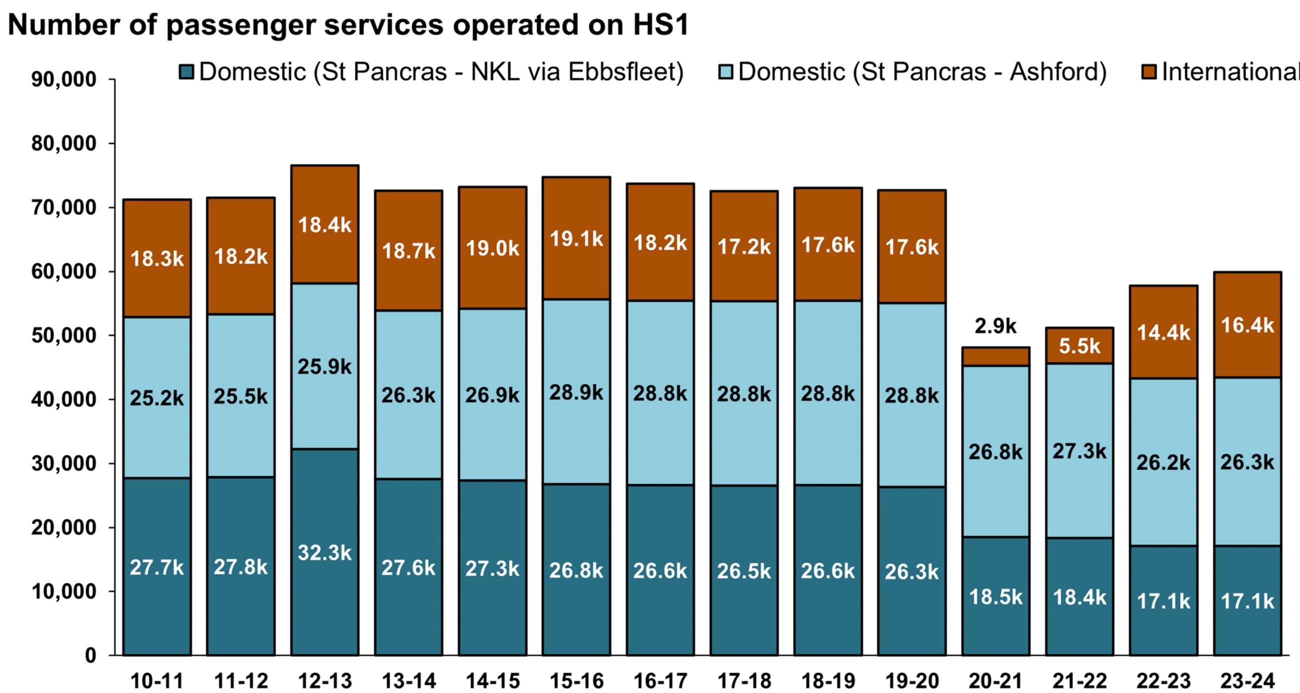
The total number of trains timetabled from 1 April 2022 to 31 March 2023 was 60,134. This is a 3% increase compared to the 58,140 in the previous year, but an 18% decrease compared to the 73,076 in April 2019 to March 2020 (the year before the pandemic).

International services increased by 14% in the latest year (to 16,442) compared to the previous year (14,438), remaining 7% below the number of services operated before the pandemic.

However, the domestic Southeastern North Kent Line (NKL) services in the latest year (17,142) were 35% below the number operated three years ago (26,324).

Please note that some of the figures included in this chapter are subject to revision due to various factors including the re-classification of some delay incidents.

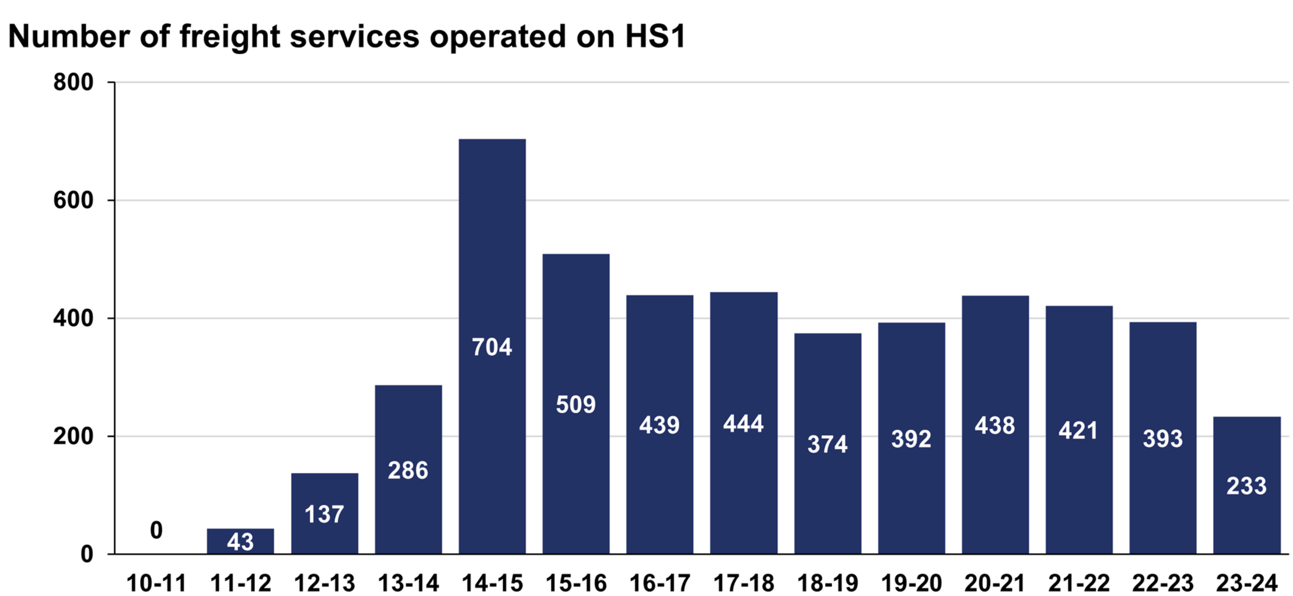
**Figure 2.1 Number of passenger train services timetabled on HS1, 1 April 2010 to 31 March 2024**




*Source: HS1 Ltd Performance Floor Report*

The number of freight train services operated on HS1 fell by 41% compared to the previous year (down from 393 last year, to 233). This is the third successive year in which the number of freight train services has decreased. The current number is 41% lower than the 392 freight trains in April 2019 to March 2020 (before the pandemic).

Figure 2.2 Number of freight train services timetabled on HS1, 1 April 2010 to 31 March 2024



*Source: HS1 Performance Floor Report*

# Train service performance

We monitor two measures of train service performance. Firstly, HS1 Ltd submits to us quarterly and annual performance floor reports demonstrating its operational performance against minimum thresholds set out in its Concession Agreement. These state that the proportion of services delayed by HS1 Ltd in a quarter should not exceed 15%, and in a year must not exceed 13%.

However, both HS1 Ltd and its users expect much higher levels of performance than this. As a result, HS1 Ltd set itself – and its subcontractor NR(HS) – a separate, more stretching, target, which we also monitor.

For this year HS1 Ltd and NR(HS) agreed a less challenging target, at 6.85 seconds delay per train, than the 5.44 seconds target delay per train it had set itself in the previous reporting year.

## Performance against minimum threshold

Table 2.2 shows a breakdown of performance for the year ending 31 March 2024.

**Table 2.2 HS1 Ltd train service performance: 1 April 2023 – 31 March 2024**

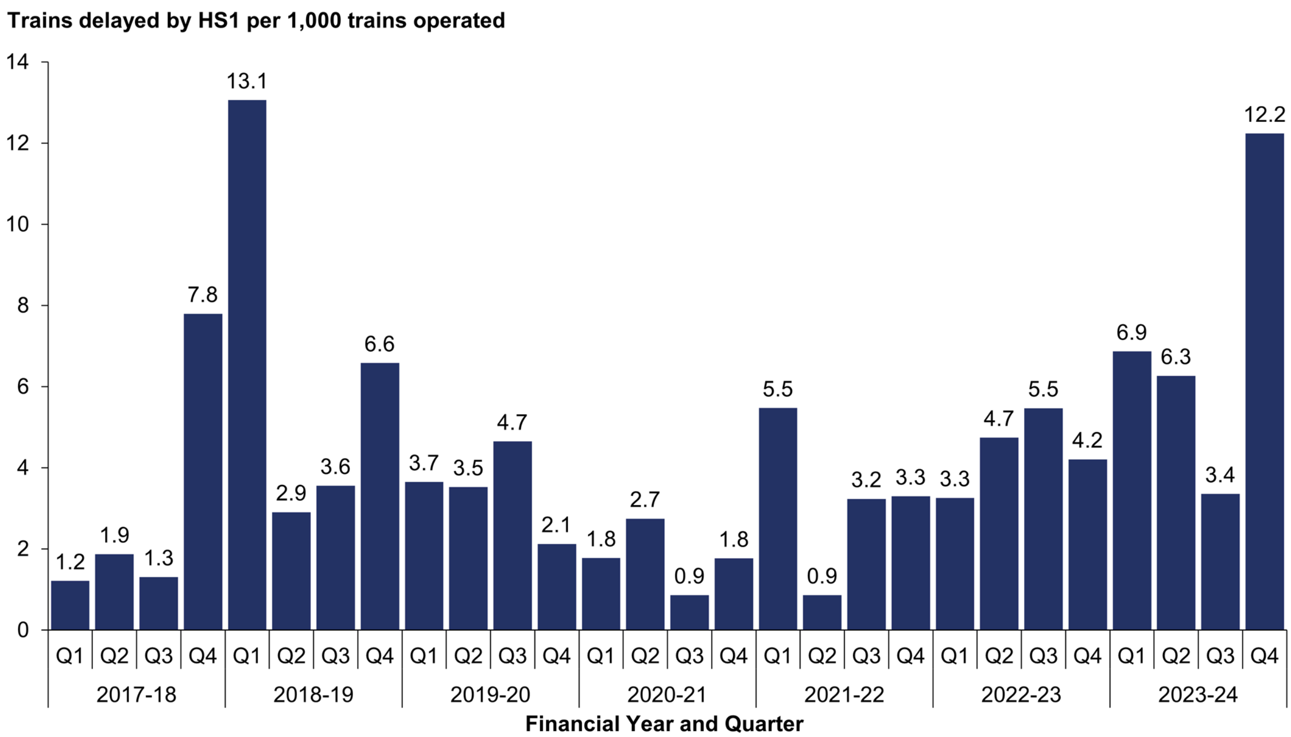
| | Total number of trains timetabled | Total number of delayed trains (attributed to HS1) | Delayed trains (attributed to HS1) as a percentage of timetabled trains | Total number of delayed trains (unknown cause) |
|---|---|---|---|---|
| Domestic (London St. Pancras – North Kent Line via | 17,142 | 113 | 0.66% | 1 |

| | Total number of trains timetabled | Total number of delayed trains (attributed to HS1) | Delayed trains (attributed to HS1) as a percentage of timetabled trains | Total number of delayed trains (unknown cause) |
|---|---|---|---|---|
| Ebbsfleet International) | | | | |
| Domestic (London St Pancras – Ashford International) | 26,317 | 221 | 0.84% | 13 |
| International | 16,442 | 124 | 0.75% | 2 |
| Freight | 233 | 0 | 0.00% | 0 |
| Total | **60,134** | **458** | **0.76%** | **16** |

*Source: HS1 Performance Floor Report*

The proportion of trains delayed by HS1 Ltd-attributable incidents in the latest year was well within the allowable standards set out in the Concession Agreement (13%), at 0.76%. However, the 458 delayed services attributable to HS1 Ltd in the latest year was a 79% increase on the 256 services delayed in the previous year. Additionally, the number of delayed trains for the latest year increased by 84% compared with the 249 services delayed four years ago before the pandemic. The quarterly breakdown of these delays is shown in Figure 2.3.

Figure 2.3 Delayed train services per 1,000 trains operated attributed to HS1 Ltd by quarter, 1 April 2017 to 31 March 2024



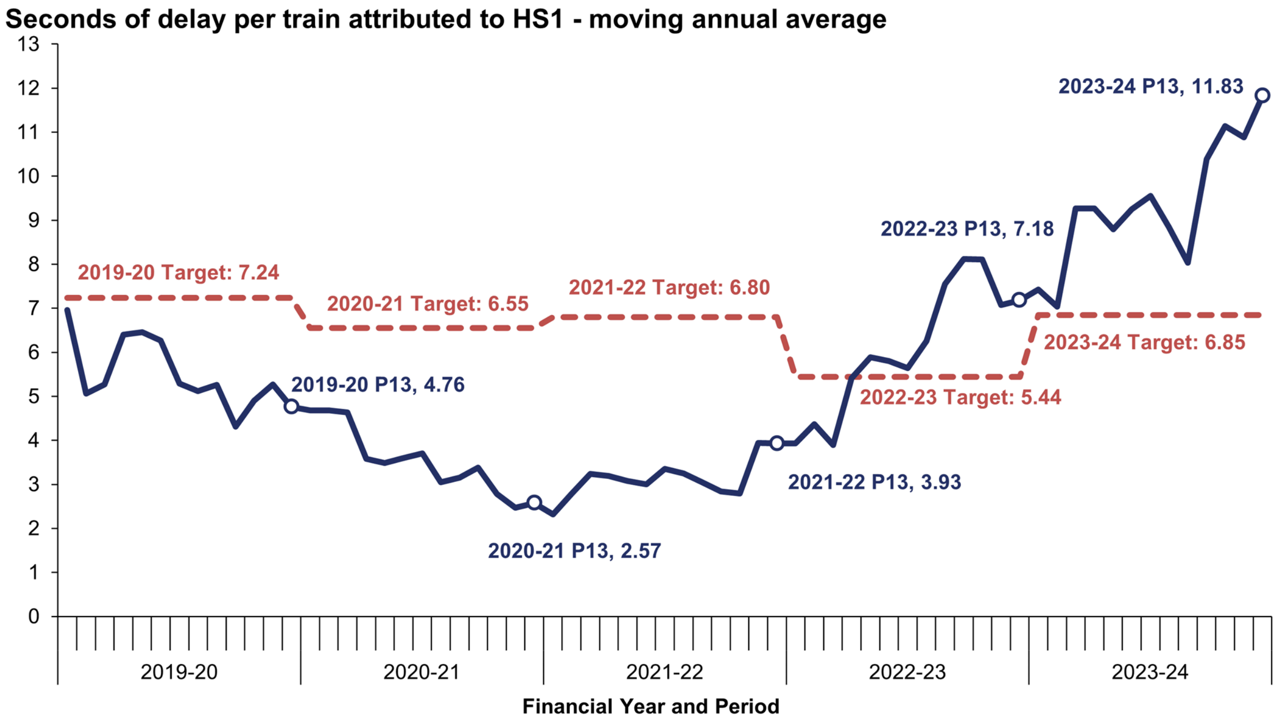

*Source: HS1 Performance Floor Report*

## Performance against stretch target

In terms of its stretch target for the latest year (6.85 seconds delay per train), the average delay per train due to HS1 Ltd-attributable incidents was nearly five seconds worse than the target, at 11.83 seconds.

The average delay in the latest year was more than four seconds longer than the previous year, where the average was 7.25 seconds. Figure 2.4 shows the year-on-year average delay per train service attributed to HS1 Ltd so far this control period.

Figure 2.4 Moving annual average delay per train service attributed to HS1 Ltd by period, 1 April 2019 – 31 March 2024




*Source: HS1 Ltd Asset Management Annual Statement (AMAS), 1 April 2023 to 31 March 2024.*

In summary, there has been a trend of increasing delays over this year and HS1 Ltd did not achieve its stretch target.

We have seen HS1 Ltd focus on returning to the level of train service provision agreed with operators, and we will continue to challenge HS1 Ltd and NR(HS) to ensure that they are minimising delays through best practice asset management, as discussed in the following chapter.

# Asset management

This chapter examines how HS1 Ltd has managed its network's assets. We have focused our review on the following aspects:

- progress on addressing our and DfT's PR19 recommendations
- asset performance, availability, condition and data
- asset management capability
- renewal planning and delivery
- progress on research and development (R&D)
- environmental sustainability

# Delivery of PR19 asset management recommendations

HS1 Ltd's commitments made at PR19 were either completed or are on track for completion by the end of the control period in March 2025. There were 28 commitments set by us for route management of assets and a further 11 set by DfT for the HS1 network's stations. There are now 3 remaining commitments yet to be completed.

This year, HS1 Ltd successfully closed out 3 commitments:

- accreditation to the ISO55001 international standard, for route asset management. For its stations this was not a direct PR19 objective, but was also achieved;
- improvements to Life Cycle Cost modelling. This has been incorporated into HS1 Ltd's PR24 planning, enabling a clearer line of sight from asset information to investment; and
- development of asset strategies with standardised asset hierarchies and risk and contingency forecasting. This has informed PR24 planning.

During the reporting year, progress on one key commitment was delayed: the requirement by the end of year 4 of the control period to be able to set the minimum data requirements for the assets; and to report on data quality in HS1 Ltd's Asset Management Annual Statement.

This has not been achieved, however an audit completed by HS1 Ltd showed no recorded non-conformances and condition data recorded against 99.5% of assets.

HS1 Ltd has committed to closing out this action and reporting on data quality in its next Asset Management Annual Statement (AMAS) and has plans to undertake data improvements to support its proposed replacement asset data system in CP4.

Data is critical to mature asset management - it is discussed below and it will be considered in detail in PR24.

There are three recommendations still to be closed in the last year of the control period. We continue to monitor the progress of these recommendations via quarterly meetings with HS1 Ltd.

Current evidence reviewed shows all are on target and we are working with HS1 Ltd to ensure that learning from the work to date has been incorporated into its submissions for PR24.

# Asset performance, availability, condition and data

## Asset Performance - Route

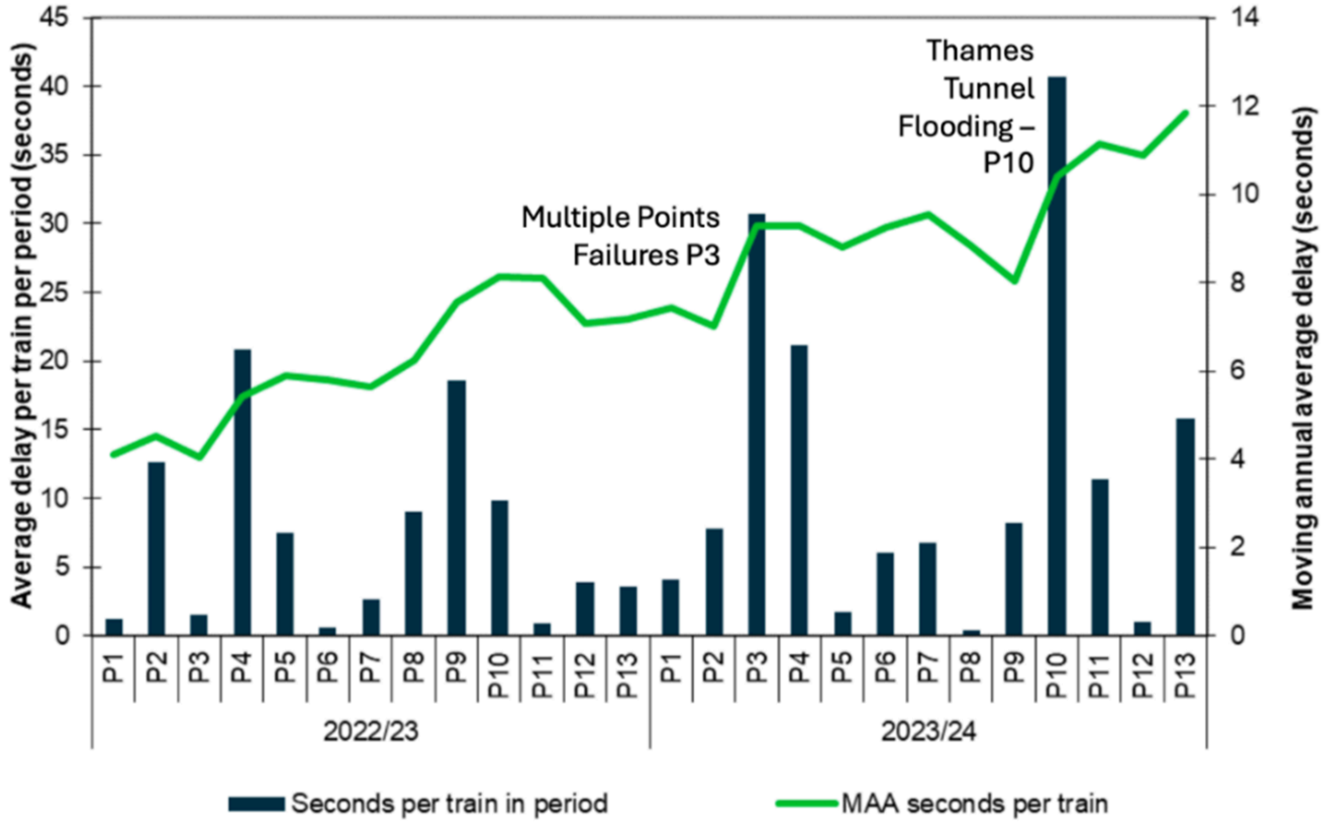
This year the route incurred approximately 8,500 minutes delay due to asset issues. This is up from 7,100 delay minutes last year.

The increase is primarily driven by a number of significant incidents: there were 13 major incidents, (defined as those that led to more than 200 minutes delay), compared to 10 in the previous year and five the year before.

The most consistent causes of delay in the year were trespass onto the HS1 network and points failures, which is similar to previous years. HS1 Ltd recognises that it needs to do more to address these types of asset issues and has put in place plans to reduce them.

We think that HS1 Ltd needs to take a greater system leadership role in implementing better predict-and-prevent measures. As part of our current periodic review of HS1 Ltd (PR24), we are working with the company to understand its plans for efficient investment in controls to predict-and-prevent such issues, including the use of innovative technologies.

**Figure 3.1 Delay per train and moving annual average by period, from April 2022 to March 2024, annotated by HS1 Ltd with causes for highest delay periods**




*Source: HS1 Ltd AMAS, 1 April 2023 to 31 March 2024.*

Figure 3.1 shows that delays are not spread evenly over the year and are characterised by a small number of high-impact events.

This year there were two significant periods with delays: one in period 3 due to multiple points failures, and the other in period10 when the flooding of the Thames Tunnel caused severe disruption. Both these periods were worse than any in the previous year.

HS1 Ltd developed an asset resilience plan to address points failures at the end of the last reporting year, but this remains an area of focus for HS1 Ltd. The plan involved analysing critical assets; adjusting maintenance regimes; and upskilling those responsible for maintenance of the network.

We understand that the eight milestones of this plan have been met, and that additional work is planned to install additional targeted monitoring to help predict and prevent failure.

We have challenged HS1 Ltd to provide assurance to us that these actions are delivering benefits. We acknowledge that HS1 Ltd has improved its assurance processes for these assets over the last year.

As part of PR24 we have begun reviewing HS1 Ltd's CP4 plan for evidence of lessons learned from failure trends, and plans to intervene on critical assets in future control periods.

The failure of both sump pumps at the Thames Tunnel between Christmas and New Year led to closure of both HS1 lines for 24 hours, and closure of one line for a further 24 hours.

This caused significant disruption to passengers. A technical investigation revealed that processes to alert that water levels were increasing were inadequate. The volume of water that entered the tunnel required a redesign of the overall system for managing drainage.

We think that if early warning systems had functioned more effectively then actions could have been taken earlier to mitigate this significant issue.

While additional ingress of water could not have been prevented by HS1 Ltd, it is entirely within HS1 Ltd's asset management remit to ensure there is effective monitoring of water build-up at such a critical location – and robust operational procedures to deal with the build-up of water and its impacts.

This raises questions about the maturity of HS1 Ltd's management of its drainage assets. We have begun scrutinising drainage asset strategies as part of the PR24 process, looking for evidence that this significant asset group is being managed in line with best practice.

The incident also raises wider questions about predict-and-prevent monitoring, and training of those responsible for maintenance and management of the asset.

Plans to address lessons learned and meet independent recommendations are underway by HS1 Ltd and we will seek assurances that those plans have been implemented in the coming year.

For trespass onto the network, the number of incidents was fewer than last year. A trespass strategy was introduced in June 2023 and a number of key initiatives implemented, but work is ongoing. London St. Pancras International station remained a target for trespass and further security improvements are planned for the coming year, including the use of close circuit television analytics to understand and mitigate trespass incidents.

In the coming year, we will continue to monitor progress of this strategy and our PR24 periodic review will look at how this feeds into specific asset strategies going forwards.

There were three dewirements in the reporting year which affected the HS1 network but were not within HS1's infrastructure. Two of these had limited impact but one at the Eurotunnel boundary with the HS1 network in November 2023 left around 800 international passengers stranded for more than eight hours.

An independent report into this showed similar management challenges as with the November 2022 incident, mostly around ineffective system communication needed to resolve operations quickly. HS1 Ltd is working with operators and neighbouring infrastructure managers on a system response, including assurance of test exercises in the coming year to check for the implementation of independent recommendations.

We understand that R&D projects currently being undertaken by HS1 Ltd have shown evidence of the potential ability to detect overhead wire faults or train faults using onboard camera technology to avoid future incidents. In the coming year, we will be seeking clarity on the recommendations and the assurance plan, including how R&D solutions are being implemented.

In January 2024 there was a dewirement within HS1's infrastructure at Singlewell, which caused a domestic HS1 service to be evacuated and passengers taken by bus to Ebbsfleet International station. This was the second dewirement within HS1's infrastructure in the last two years (the first having occurred in November 2022 at Rainham, Kent).

The post-incident management of the latest incident suggested that some learnings from the previous incident had been implemented, however challenges remain around recovery and identifying the root cause. The root cause of the January 2024 incident has still not been determined.

For route asset availability, we look at two areas: power availability, and operational availability – with the latter defined as the percentage of time that a specific asset group is available for operational use, excluding planned maintenance. HS1 Ltd has met its targets for asset availability in these areas and we have no significant concerns.

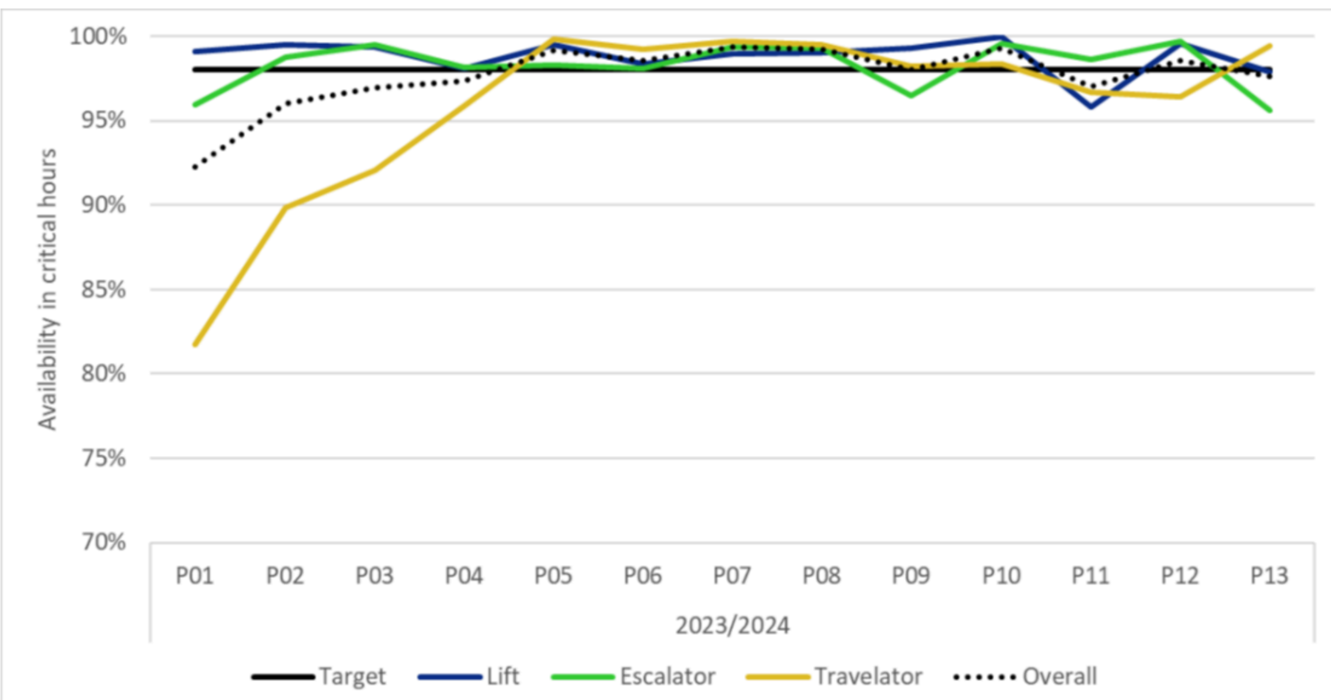
## Asset Performance - Stations

This year the main area of concern for the performance of assets at stations were lifts, escalators, and travelators (LETs) at the three stations managed by NR(HS). Availability against these targets is shown in Figure 3.2. Train operators continue to highlight to us that this has had a significant impact on their ability to manage pedestrian flows around the stations, and consequently on their passengers' experience. While we recognise that availability this year has increased compared to the previous year, more needs to be done by HS1 to ensure the availability targets agreed with its operators are met consistently.

Since the previous year, NR(HS) has put in place a performance improvement plan with its LETs supplier which is showing signs of delivering better performance. In the coming year, we expect to see more initiatives to improve the supplier performance and better understand the data needed to predict and prevent failure. Over the next year we will be seeking clarity on HS1 Ltd's plans to improve asset performance through improved data and evidence-based prediction as well as improvements in the management of obsolescence in this asset group.

The available asset data continues to show that greater deterioration than forecast at PR19 is a factor in the management of these assets. We consider that it is within HS1 Ltd's control to make better use of its asset data and to revise its maintenance and renewals activities accordingly. We have seen evidence that HS1 Ltd and NR(HS) are drawing up plans to reflect this new asset knowledge. We will continue to monitor this in the coming year and we expect to see lessons learned reflected through the PR24 process.

**Figure 3.2 Availability of lifts, escalators and travelators at the three NR(HS)-managed stations**




*Source: HS1 Ltd AMAS, 1 April 2023 to 31 March 2024.*

# Asset capability and condition

Route asset capability remained constant in the reporting period and is in line with expected degradation. The major incidents affecting HS1 infrastructure in the last year were not related to a change to the asset condition.

For its stations, HS1 Ltd will undertake asset condition inspections of all its stations in the coming year. As noted for lifts, escalator and travelator performance above, the available data continues to show that deterioration was greater than forecast at PR19. This rate of degradation is reflected in increased need for refurbishment and reduced availability of assets.

As noted above, we consider that it is within HS1 Ltd's control to make better use of its asset data to update its maintenance and renewals activities and we will review this in PR24.

# Asset management capability

We commend HS1 for achieving ISO55001 accreditation for asset management during this year. Better understanding of assets is crucial to reducing system costs and delivering asset availability more efficiently.

HS1 Ltd made good progress against its asset management targets in the reporting year. While more remains to be done to support the PR24 process, good work on understanding the track asset has been achieved and this is now best in class for asset management maturity, among the HS1 asset groups.

We will be commenting on asset management maturity further through the PR24 process, as each asset area has a different level of maturity, reflecting different technical challenges and different points in their lifecycles on HS1. It is good to see the overall management of assets has progressed since PR19 with new data-driven models now informing workbank planning for the 40-year asset plan.

We continue to encourage HS1 Ltd to develop this work across all of its asset base, sharing lessons and technology between assets groups.

The structure of asset management documentation continues to be in line with best practice. Updates in the reporting year moved HS1 Ltd closer towards being a data-driven risk and insight organisation.

We are supportive of the new assurance processes between HS1 Ltd and NR(HS). We understand that this work has been considered to establish the relationship between asset management decisions, performance and long-term asset sustainability for PR24.

We acknowledge good progress in the management of asset obsolescence with a full summary of parts and components now part of the annual report. Categorising the obsolescence risk in this way represents a step forward and enables more robust planning and prediction of future risk.

HS1 Ltd's asset information strategy roadmap has encountered some delays this year prior to rolling out solutions and systems to support effective decision-making. A new enterprise asset management system is due to be rolled out in CP4 and we will be monitoring the impact of this on assurance activities.

We note that NR(HS) wishes to be a global leader in asset management by 2035, and an independent audit of its unified information strategy this reporting year showed no major non-conformances and three strong points, but also four opportunities for improvement. We are seeking clear evidence from both HS1 Ltd and NR(HS) during the PR24 process to understand how these opportunities will be realised.

## Renewal planning and delivery

In our previous annual report, we acknowledged an improvement in HS1 Ltd's assurance of changes to its renewals plan.

This reporting year, early modelling for PR24 was used to prioritise deliverable renewal work for the final years of CP3, with a view to more integrated ways of working to be tested (which will be essential for CP4, when the renewal volumes are significantly higher).

The volume of route renewals delivered was 120% of the volume planned at PR19. This is a total volume, combining different work across different asset types. We have reviewed this in detail, to ensure that higher total volume represents a benefit, in terms of better asset condition and lower whole life cost (as opposed to delivering a larger volume of 'easier' work types, with no benefit).

Similarly, over-delivery of volumes might not be 'better' than the plan, if the extra volume is due to assets degrading faster than planned and needing additional work. We are satisfied that the 120% volume delivery reflects a positive outcome, reflecting effective delivery on site and recovering some under-delivery in previous years.

This is an improvement from previous years (delivery was 35%, 68% and 73% of plan in Years 1, 2 and 3 respectively). It should be noted that the plan was adjusted to defer significant track volumes into CP4 following a deliverability review.

HS1 Ltd was able to accelerate other works into the plan making use of strike opportunities and better integrated maintenance and renewals planning. Further work is needed to report the efficiency of the change process, and we support a review of reporting to the quarterly stakeholder renewals board.

For HS1's stations the volume of renewal delivered was 248% of the baseline plan for 48% of baseline cost. The number of changes to the plan and to individual schemes during the year is indicative of immature plans and estimates, rather than clear evidence of efficient delivery.

During the PR24 process we are seeking to ensure HS1 Ltd is achieving better asset management planning for station assets, to allow for more stable delivery plans in future control periods.

### Line of sight between data-driven activity and asset renewal planning

We welcomed the introduction of an improved assurance regime in the reporting year to address concerns that we and other stakeholders had raised, about its reliance on lagging indicators to report progress.

After a year of using this new approach, leading indicators have allowed the start of better integrated asset management and renewal delivery conversations.

These indicators need to be continuously reviewed to ensure fitness for purpose going into CP4. We will continue to challenge HS1 Ltd to make the best use of assurance information to enable more stable, transparent delivery of its plans.

## Research and development

At PR19, we encouraged HS1 Ltd to implement a research and development fund. Good governance of R&D funding is essential to ensure that investment is delivering real benefits; and that projects are stopped quickly if they are no longer viable. We note continued good control of research and development funding this year with HS1 Ltd meeting its planned milestones.

In the coming year, the last of the control period, we expect to see greater evidence of turning past R&D into innovation and delivery of benefits.

Where there are opportunities for wider system benefits, e.g. camera images from devices monitoring the contact wire interface with the train, we expect HS1 Ltd to take on a significant role in unlocking the system benefits.

## Environmental sustainability

HS1 Ltd launched its sustainability strategy in 2020, setting out six priority areas: transparency; climate change & adaptation; energy use; resource use & waste impacts; biodiversity; and social impacts.

For each priority area, HS1 Ltd has set targets to 2030 and plans to deliver on these targets. It publishes annual detailed Environmental, Social, Governance (ESG) updates each June.

As part of PR24 we are reviewing its latest report alongside updates to its sustainability strategy, to ensure they are consistent with best practice – and that the pragmatic decisions made in operations, maintenance and renewals are consistent with the bold ambitions set out in HS1 Ltd's high level strategy.

## Finance and efficiency

HS1 Ltd's income and expenditure for the year is summarised in Table 4.1. Please note that some figures in this chapter may not sum due to rounding.

**Table 4.1 Summary of HS1 Ltd's regulated income and expenditure 1 April 2023 to 31 March 2024, compared to PR19 forecast and previous reporting year**

| £m, 2023 to 2024 prices | Actual | PR19 forecast | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Income | - | - | - | - |
| Operations, Maintenance, and Renewals (OMR) charge | 79.8 | 70.4 | 9.4 | 61.6 |
| Pass-through income | 25.9 | 24.7 | 1.2 | 22.4 |
| **Total income** | **105.7** | **95.1** | **10.6** | **84.0** |
| **Controlled track costs** | - | - | - | - |
| Network Rail (High Speed) | 53.3 | 53.5 | 0.1 | 49.9 |
| HS1 | 12.6 | 11.7 | (0.9) | 13.0 |
| Network Rail Infrastructure Ltd | 1.8 | 2.0 | 0.2 | 1.7 |
| Other | 2 | 2.9 | 0.9 | 1.9 |

| £m, 2023 to 2024 prices | Actual | PR19 forecast | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| **Total controlled track costs** | **69.8** | **70.1** | **0.3** | **66.6** |
| **Pass through costs** | - | - | - | - |
| Rates | 10.9 | 11.1 | 0.2 | 9.2 |
| UK Power Network fees and renewals | 7.1 | 7.4 | 0.3 | 6.8 |
| Insurance | 3.7 | 3.9 | 0.3 | 3.8 |
| Power-non traction | 4.4 | 2.3 | (2.0) | 2.7 |
| **Total pass through costs** | **25.9** | **24.7** | **(1.2)** | **22.5** |
| **Freight costs** | - | - | - | - |
| Network Rail (High Speed) | 0.1 | 0.1 | 0.0 | 0.1 |
| Network Rail Infrastructure | 0.2 | 0.2 | 0.0 | 0.2 |

| £m, 2023 to 2024 prices | Actual | PR19 forecast | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Ltd | | | | |
| HS1 | 0.1 | 0.1 | 0.0 | 0.1 |
| Total freight costs | 0.4 | 0.4 | 0.0 | 0.4 |
| Total OMR costs | 96.1 | 95.2 | (0.9) | 89.4 |
| Performance related payments | 0.0 | 0.0 | 0.0 | 0.0 |
| Total costs | 96.1 | 95.2 | (0.9) | 84.6 |
| Net income / (expenditure) | 9.6 | (0.1) | 9.8 | (5.4) |

*Source: HS1 Ltd AMAS, 1 April 2023 to 31 March 2024 and 1 April 2022 to 31 March 2023.*

## Income

HS1 Ltd received £105.7m of regulated income this reporting year, £10.6m higher than assumed in our PR19 forecast.

Regulated income relates to all the OMR charges that HS1 Ltd receives from train operators to run the network, and pass-through income which it receives from train operating companies to recover certain costs such as for the use of traction electricity.

Table 4.2 Summary of HS1 Ltd's regulated income 1 April 2023 to 31 March 2024

| - | £m, Feb 2023 prices | Actual | PR19 | Difference better/(worse) |
|---|---|---|---|---|
| International | OMR charges | 29.4 | 24.8 | 4.6 |
| International | Pass-through charges | 6.8 | 7.2 | (0.4) |
| International | Total | 36.2 | 32.0 | 4.2 |
| Domestic | OMR charges | 50.0 | 45.4 | 4.6 |
| Domestic | Pass-through charges | 19.2 | 17.5 | 1.7 |
| Domestic | Total | 69.2 | 62.9 | 6.3 |
| Freight | OMR charges | 0.4 | 0.2 | 0.2 |
| Freight | Pass-through charges | 0.0 | 0.0 | 0.0 |

| - | £m, Feb 2023 prices | Actual | PR19 | Difference better/(worse) |
|---|---|---|---|---|
| Freight | Total | 0.4 | 0.2 | 0.2 |
| Total regulated income | 105.7 | 95.1 | 10.6 | |

*Source: HS1 Ltd AMAS, 1 April 2023 to 31 March 2024.*

### Income from OMR charges

£79.8m of HS1 Ltd's regulated income was from charges to train operators for operating, maintaining and renewing its network. There are agreed chargeable journey times for each service group at a rate per minute or per km per train.

These charges, together with train numbers, drive the revenue. Overall, income from OMR charges was £9.4m above the CP3 forecast due to £4.6m higher recovery on Eurostar train service paths and £4.6m higher recovery on Southeastern's train services following charging reopeners to reflect actual train volumes, plus £0.2m higher recovery costs for freight.

An element of route OMR charges is designed to build up a fund to pay for future renewals resulting from today's wear and tear of the network. This is deposited in an escrow account which is then permitted to be invested, within parameters set out in the Concession Agreement. Both passenger train operators on the network were offered a temporary route escrow payment holiday from Period 1 2020/21 to Period 3 2021/22.

This offer was accepted by Eurostar who deferred around £15.7m of payments into the escrow account which it must repay with interest within CP3.

The immediate impact of the pandemic on HS1 Ltd's regulated income was somewhat reduced by the protections embedded within the concession structure. However, income in the first three years of CP3 was overall much lower than budget; the reduced number of services in the First

Working Timetable from both Eurostar and Southeastern resulted in unrecovered fixed costs on trains not run.

HS1 Ltd also identified a shortfall during the third annual reopener (£3.0m in February 2018 prices) due to the percentage split of domestic services in its charging model did not align with the split of services set out in the Domestic Underpinning Agreement that it holds with the UK Government.

The volume reopener model was built to ensure full recovery of fixed costs over the course of the entire control period, including allowing HS1 Ltd to recover the shortfall, and this meant that OMR charges income from passenger train operators in the reporting period was above control period budget levels.

# Expenditure

## Controlled track costs

The majority of HS1 Ltd's regulated route costs (£53.3m of a total of £96.1m) were incurred in operating and maintaining its network. This work is undertaken through a long-term, fixed price contract with NR(HS). Table 4.3 provides a breakdown of NR(HS)'s costs.

The Operator Agreement between HS1 Ltd and NR(HS) requires the former to pay train operators if NR(HS) outperforms our PR19 financial assumptions in years 3, 4 and 5 of a control period.

The formula requires NR(HS) to make significant savings before having to share the outperformance, so a material outperformance share with train operators requires substantial savings.

In this reporting year NR(HS) underperformed by £2.5m and therefore no payments are required to be shared with train operators.

**Table 4.3 Network Rail (High Speed) costs 1 April 2023 to 31 March 2024, compared to PR19 forecast and previous reporting year**

| £m, Feb 2023 prices | Actual | PR19 | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Staff costs | 24.2 | 24.8 | 0.6 | 22.4 |
| Plant & materials | 6.1 | 6.9 | 0.8 | 6.4 |
| Overheads | 6.0 | 4.2 | (1.8) | 3.9 |
| Corporate functions & Network Rail Infrastructure Ltd | 3.8 | 4.7 | 0.9 | 3.7 |
| Sub-contractors | 3.3 | 3.0 | (0.3) | 2.4 |
| Consultancy costs | 1.5 | 0.7 | (0.8) | 1.9 |
| Security of infrastructure | 1.8 | 2.4 | 0.6 | 1.7 |
| Insurance | 0.6 | 0.8 | 0.2 | 0.6 |
| Operating costs | 47.2 | 47.6 | 0.4 | 43.0 |
| Management fee | 3.8 | 3.8 | 0.0 | 3.6 |

| £m, Feb 2023 prices | Actual | PR19 | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Risk premium | 4.9 | 2.1 | (2.9) | 1.7 |
| Over/under Performance | (2.5) | 0.0 | 2.5 | 0.0 |
| **Total NR(HS) costs** | **53.5** | **53.5** | **0.0** | **48.3** |

*Source: NR(HS) Outturn statements, 1 April 2023 to 31 March 2024 and 1 April 2022 to 31 March 2023.*

HS1 Ltd's internal costs are shown in Table 4.4. This was £12.6m for the reporting year, £0.9m higher than forecast at PR19. HS1 Ltd has incurred £0.9m of costs associated with an organisational restructure.

This has increased staff and technical support costs in the short term but is expected to result in around £1.1m per year of savings in future years.

Table 4.4 HS1's internal costs 1 April 2023 to 31 March 2024, compared to PR19 forecast and previous reporting year

| £m, 2023 to 2024 prices | Actual | PR19 forecast | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Staff costs | 6.7 | 6.0 | (0.7) | 6.6 |

| £m, 2023 to 2024 prices | Actual | PR19 forecast | Difference better/(worse) | 2022 to 2023 |
|---|---|---|---|---|
| Technical support / consultants | 2.2 | 1.5 | (0.7) | 2.7 |
| Office running costs | 1.6 | 1.6 | 0.1 | 1.5 |
| R&D | 0.3 | 0.5 | 0.2 | 0.1 |
| Other costs | 1.9 | 2.1 | 0.2 | 2.0 |
| **Total HS1 costs** | **12.6** | **11.7** | **(0.9)** | **13.0** |

*Source: HS1 AMAS, 1 April 2023 to 31 March 2024 and 1 April 2022 to 31 March 2023.*

### Pass-through costs

Some of HS1 Ltd's costs are passed straight through to train operators by offsetting pass-through income. These costs are largely uncontrollable by HS1 and include traction electricity costs, business rates and insurance.

Pass-through costs were £25.9m this reporting year, which represented underperformance of £1.2m against PR19 assumptions. Most of the overspend derived from a £2.0m overspend on non-traction power due to increased electricity costs.

### Freight costs

HS1 Ltd incurs costs relating to freight traffic, including maintaining freight-specific infrastructure, which it passes through to operators through OMR charges.

Freight costs were £0.4m, which was in line with the PR19 forecast.

# Efficiency

As part of PR19, we determined an efficient level of cost for the operations, maintenance and renewal of the route infrastructure.

The largest element of HS1 Ltd's costs is its contract with NR(HS). At PR19, we accepted NR(HS)'s plan to increase efficiency by £8.6m (6.7%) across the five years of CP3.

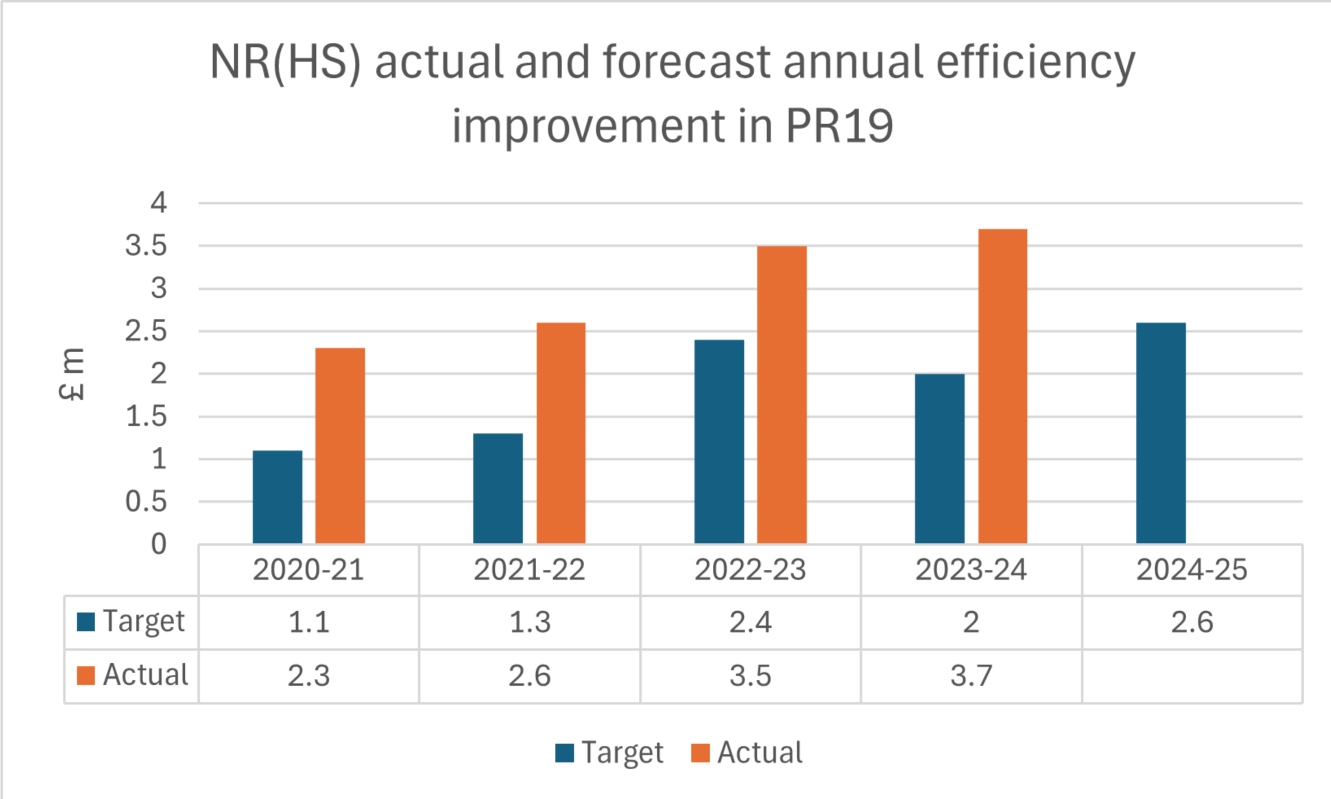
This means that to deliver the same level of output, we expected NR(HS)'s costs in the final year of CP3 to be 6.7% lower than in the final year of CP2. For this reporting year, the expected efficiency was £2.9m.

NR(HS) has reported efficiencies additional to those planned: £3.7m against the target of £2.0m. This included £2.4m of staff-related savings due to managing vacancy gaps and workforce reform benefits, and £1.2m after negotiating a reduction in national functions paid for through a provision of services agreement with Network Rail Infrastructure Ltd for the remainder of the control period.

NR(HS) therefore expects to meet the efficiency challenge that we set at PR19. To demonstrate its progress, NR(HS) reports to us using a "fishbone" analysis which includes efficiencies, headwinds (unplanned cost increases due to external factors such as the pandemic, tailwinds (unplanned cost decreases due to external factors), scope changes (planned changes to levels of work undertaken) and input prices (inflationary effects from increases or decreases in costs above general CPI inflation).

NR(HS) does not share this detailed annual breakdown with HS1 Ltd due to commercial sensitivities, but we expect the company to outline the magnitude of these savings to stakeholders in support of its CP4 plans.

**Figure 4.1 NR(HS) actual and forecast annual efficiency improvement in PR19**




*Source: NR(HS) 1 April 2023 to 31 March 2024 O&M Efficiency Report.*

# Stations operations and maintenance costs

We do not regulate HS1 Ltd's operations and maintenance spend for stations, which is agreed annually between the infrastructure manager and station operators.

We understand that HS1 Ltd spent around £37.4m on these costs in the reporting year, against a budget of £39.9m.

## Route escrow account

Some of HS1 Ltd's access charges are paid into an escrow account to fund current and future renewals of the route.

This fulfils a similar function to the Regulatory Asset Base in other regulated utilities by spreading these costs over the long term to ensure that users of the railway pay their fair share.

The balance on the route escrow account (excluding investments) at 31 March 2024 was £74.0m. The escrow balance increased by £46.9m in the year due to:

- £43.1m of payments into the escrow account. This is an increase of £14.2m against the PR19 forecast. Some of this over-recovery relates to the 'payment holiday' following the pandemic, which is to be repaid within CP3. These funds are part of the OMR charges paid by operators and are designed to finance future renewals of the HS1 route. The collected amounts are deposited into the escrow account each quarter (similarly the stations long term charges (LTCs) are deposited into ring-fenced escrow accounts for each station each quarter)
- £13.0m was withdrawn to pay for renewals delivery, £4.4m less than forecast at PR19 due to less renewal work being undertaken than planned (see asset management section for more details)
- £2.7m of interest earned in the year

Funds invested as at year end for the route were £86m, maturing within the next 12 months.

## Stations escrow accounts

Operator charges are paid into an escrow account to fund current and future renewals for each of the four stations: London St. Pancras International, Stratford International, Ebbsfleet international and Ashford International.

The balance across all the stations escrow accounts (excluding investments) at 31 March 2024 was £33.7m, £25.0m higher than at 31 March 2023.

The escrow balances comprise:

- £15.0m income into the escrow accounts through long term charges for each station
- £2.7m withdrawn to pay for renewals delivery
- £0.9m of interest earned in the year

Funds invested as at year end for the stations are £41.0m. The stations escrow funds have been invested on the same basis as route.

We understand that HS1 Ltd has been seeking to maximise interest earned on the escrow accounts, over retaining cashflow availability for renewals, since December 2021.

In the reporting year HS1 Ltd worked with DfT to identify opportunities to help narrow the gap between interest earned and inflation through changes to the Concession Agreement requirements on authorised investments.

We understand from operators' responses to HS1 Ltd's draft plans that operators support this work progressing as soon as possible but DfT and HS1 Ltd consider that amendments are unlikely to be made in time for the benefits to be taken into account in our PR24 determinations.

# Overview of HS1's statutory financial statements

HS1 made a profit after tax of £101.6m this reporting year (up from £36.8m the previous year) with earnings before interest, tax, depreciation and amortisation of £101.0m (£65.8m the previous year).

Its net assets increased to £289.1m from the £157.1m of the previous year, primarily due to reported profit.

The ratio of cash available to service the annual debt interest and principal payments (DSCR) for 1 April 2023 – 31 March 2024 was 1.51x (noting that this was 1.46x in the previous reporting year).

HS1 remained above its debt-service cover ratio (DSCR) covenant lock-up level of 1.20.

The lock-up level is a restriction of distributions. Until DSCR recovers to above the lock-up threshold, any cash generated in the period that was planned to be paid out to shareholders, must instead be set aside for debt service.

We note that no dividend payments were paid in the reporting year.