ORR annual report on HS1 Ltd

1 April 2022 – 31 March 2023

31 July 2023

Contents

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 2022 – 31 March 2023, which was the third year of Control Period 3 (CP3). 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 DfT's periodic reviews of HS1 Ltd 2019 respectively (PR19s). More information on PR19 can be found on our website here. We published our approach and process for the next periodic review of HS1 Ltd, PR24, on 31 January 2023.

Over the last year HS1 Ltd has made significant improvement in its planning and delivery of route renewals, in response to concerns we raised in our last annual report. However, several new issues arose during the year, leading to HS1 Ltd missing a number of its targets. We saw evidence that HS1 Ltd has taken steps to resolve these issues, but at the end of the year further improvements were still needed. We are continuing to closely monitor these areas in accordance with our policies for holding HS1 Ltd to account in CP3 for the route and stations. The key issues over the last year were:

Health and Safety

The network missed its target for workplace injuries

The target for the 'fatalities and weighted injuries' metric was missed throughout the year. We note there were no fatalities, but there was an increase in minor injuries. As the relevant safety dutyholder, Network Rail (High Speed) has responded with discipline-specific safety plans which we are closely monitoring. We raised concerns that many of the incidents related to Network Rail (High Speed)'s management of subcontractors; we have observed improvements over the course of the reporting year but we expect to see further progress in the coming year.

Under its 'General Duty' in its Concession Agreement with the UK Government, we expect HS1 Ltd to take reasonable steps to manage its contractors in line with best practice, including health and safety risk management. We are satisfied that HS1 Ltd is challenging its main contractor appropriately to improve in this area, but we will hold them both to account to deliver improvements in the coming year.

Traffic volume and train service performance

HS1 missed its own target for train service performance

Traffic volume on the HS1 route increased by 13% in the period 1 April 2022 – 31 March 2023 compared to the previous year. However, services were still 20% below the number operated in the period April 2019 to March 2020, before the impact of COVID-19.

The number of services delayed by HS1 Ltd-attributable incidents during the year was 256 (0.44% of all services using the network), an increase on the previous year which saw 0.32% of services run delayed. This remains substantially better than the company's minimum requirement set out in its Concession Agreement (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 7.25 seconds per train (an increase of 81% on the year before), compared to a target of 5.44 seconds per train. This is the first time in four years where HS1 Ltd has failed to meet its self-imposed target.

Asset Management

HS1's delivery of renewals has improved, but it is failing to meet targets for the availability of lifts, escalators and travelators

This year the volume of route renewals delivered was three times the volume delivered in the previous two years combined, following improvements HS1 Ltd made since our last annual report. We support HS1 Ltd's improved use of asset data in its decision making; and the use of leading indicators to proactively manage risks to the renewals workbank.

However, there are challenges which need to be addressed, most notably:

- lift, escalator and travelator availability on stations is a concern. HS1 Ltd has consistently missed its target for availability of lifts and escalators in the last quarter of the reporting year. We have seen evidence that the same assets, some in critical locations to train operators, are failing repeatedly, even shortly after renewals. We are challenging the company to ensure that it is managing station assets in accordance with best practice, and taking all reasonable steps to mitigate impacts on passengers and train operators;

- trespass incidents and points failures were a significant cause of train delays. We continue to challenge HS1 Ltd to ensure it fully understands repeat failure of specific components or locations better, and is taking all reasonable steps to prevent or mitigate impacts through good asset management. We note that HS1 Ltd has commenced detailed reviews into these areas and we will monitor the outputs of that work closely over the coming year;

- while the volume of renewals increased significantly this year, it was still less than the plan set out in our PR19 determination. We have worked closely with HS1 Ltd to understand its decision-making, and we are currently satisfied that it is taking a reasonable approach to managing changes to its renewals plans. We will continue to monitor this closely in the coming year as the expected improvements unfold into its planning for our next periodic review (PR24). At PR24, we want to see that HS1 Ltd's renewals plans for the next 40 years are sustainable, efficient and deliverable, optimised based on good asset management and use of data.

Finance and efficiency

NR(HS) is meeting our PR19 efficiency challenge; HS1 Ltd costs have risen

Reduced traffic resulted in income from operating, maintenance and renewals (OMR) charges being £3.5m below the PR19 forecast. £6.3m lower recovery on international passenger train paths was partially offset by £2.4m higher recovery on domestic passenger services following volume reopeners; and £0.3m higher recovery costs for freight.

NR(HS) achieved efficiencies on costs additional to those that we determined at PR19: £3.5m against a target of £2.4m. This included £1.7m of staff related savings due to managing vacancy gaps and workforce reform benefits; and £1.1m from a provision of services agreement with NRIL resulting in a reduction in costs of national functions. NR(HS) therefore expects to meet (or exceed) the efficiency challenge that we set at PR19 for the control period.

However, HS1 Ltd's own costs were £2m higher than assumed at PR19. HS1 Ltd reported that these additional costs were due to a need to increase headcount to cope with additional work relating to COVID-19 including: volume reopeners; escrow management; increased use of spot bidding; and increased operator queries of invoicing. HS1 Ltd has absorbed these costs within the control period and has indicated that it does not intend to increase previously forecast costs at PR24 (in real terms). We will be working closely with HS1 Ltd through the PR24 process to ensure that its regulated costs are efficient.

Background

HS1 Ltd has a 30-year Concession Agreement from the Secretary of State for Transport to operate and manage the HS1 line, 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 Network Rail (High Speed) Ltd (NR(HS)) for all its assets, apart from Ashford International, which, currently, is subcontracted to Mitie Plc (Mitie). NR(HS) and Mitie 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 in order 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; and

- financial performance and efficiency.

Until 27 July 2022, the Department for Transport (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; and
- the delivery of efficiencies set out in its Life Cycle Report for each station.

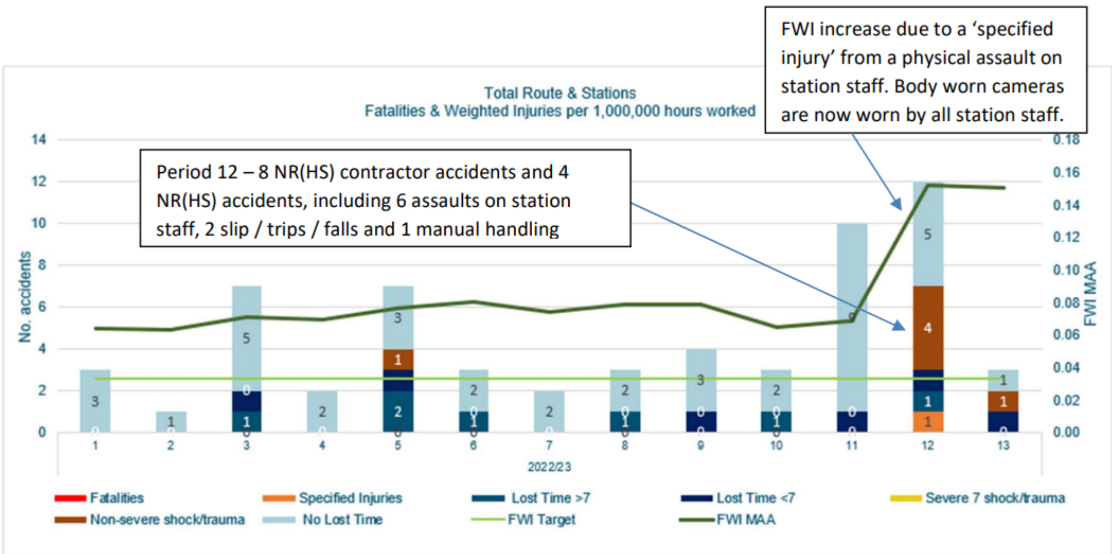
More information on our approach to monitoring and reporting on HS1 Ltd in CP3 can be found on our website.

1. Health and safety

1.1 Many of HS1 Ltd's operating, maintenance and renewal functions, that are governed by the Concession Agreement and leases, are contracted out to NR(HS) and Mitie. We therefore consider that all three of these organisations have health and safety obligations, but NR(HS) and Mitie are the infrastructure managers for the purposes of the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended). As such, NR(HS) and Mitie have duties to establish and maintain safety management systems as set out in those regulations. However, HS1 Ltd also has an important role as the asset steward and as the client for the works.

1.2 On 19 August 2022, HS1's Engineering Director wrote formally to NR(HS) following an adverse trend in the Key Performance Indicator (KPI) of Fatalities and Weighted Injuries (FWI). At the time the KPI for workforce FWI was 0.070 against a target of 0.035 (see Figure 1). In response, NR(HS) produced detailed multi-year safety improvement plans, which are owned within each railway discipline, with action owners and milestone deadline dates. The discipline-specific safety plans reflect the first phase of a three-phase programme of work and have shown demonstrable outputs at working level which we expect to be continually improved upon in the subsequent phases. Phase 2 will look at available data to inform a risk-based approach to accident prevention. Phase 3 will create an assurance regime and strategic safety plan.

Figure 1.1 Fatalities and weighted injuries per 1,000,000 hours worked (source: HS1 Ltd's Asset Management Annual Statement)



1.3 Since August 2022, we have been engaging closely with NR(HS) to monitor progress against these plans. It is acknowledged that NR(HS) is committed to the plans and is undertaking internal scrutiny. In the coming year, we will adjust our supervisory oversight of NR(HS) accordingly, particularly around the management of its contractors, which was an emerging theme in the reporting year. We observe that HS1 Ltd and NR(HS) have worked collaboratively to create an appropriate set of agreed FWI targets for 2023-24.

1.4 NR(HS) went through a reorganisation during 1 April 2022 – 31 March 2023, with health and safety posts being integrated within the operations and infrastructure teams to facilitate accountability within these areas. An internal post-implementation review is scheduled for September 2023.

1.5 We have seen an improvement in the control of contractors by NR(HS) front line station staff challenging contractors who arrive on site with incorrect documentation or protective clothing. There is also good practice in innovation, evidenced by NR(HS) implementing its electronic system for visitor and contractor access across all high-speed stations, for a consistent approach.

1.6 This reporting year we carried out the following key health & safety activities:

- monthly liaison meetings with NR(HS)'s Head of Safety. We introduced an action tracker to monitor progress. These meetings included a review of incidents, safety improvement plans and KPI data;
- quarterly liaison meetings with HS1 Ltd's Head of Assurance throughout the year to discuss safety performance and HS1 Ltd's safety assurance arrangements; and
- investigation of an accident involving a cleaner working on behalf of an NR(HS) contractor, on 25 July 2022. They suffered a severe back injury resulting in significant time off working following a fall of approximately 1.2 metres during refuse disposal. Our investigation highlighted weaknesses in the contractor's risk assessment and method statement process and we formally wrote to the contractor on 30 November 2022. This resulted in a time-bound action plan being produced by the contractor to address the issues identified.

1.7 In summary, an important health and safety target was missed this year and specific incidents have highlighted areas requiring improvement. We have seen evidence that HS1 Ltd is taking reasonable steps to address these issues, practical changes have been made and time-bound plans are in place to get back within targets. Our current position is that we will continue to monitor progress against these plans and we will escalate any unresolved issues.

1.8 Further information on health and safety performance on all of Britain's railways can be found in our health and safety annual report, and the Rail Safety and Standards Board (RSSB) Annual Safety Performance Report. Information on our approach to regulating health and safety risks is in the strategic risk priorities section of our website.

2. Traffic volume and train service performance

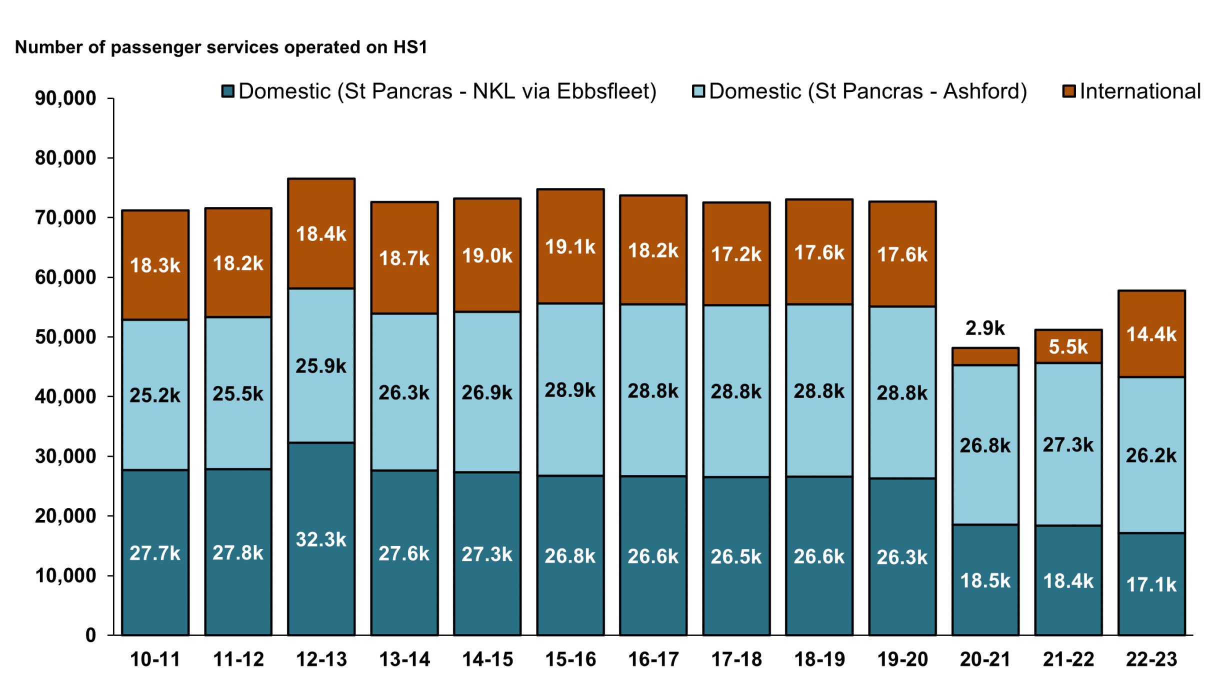
Traffic volume

2.1 The total number of trains timetabled for the period 1 April 2022 - 31 March 2023, was 58,000. This is a 13% increase compared to the 52,000 in the previous year, but a 20% decrease compared to the 73,000 run between 1 April 2019 and 31 March 2020 (the year before the COVID-19 pandemic).

2.2 International services increased by 161% in the latest year (to 14,400) compared to the previous year (5,500). However, they remain 18% below the number of services operated in the period 1 April 2019 - 31 March 2020. Similarly, the Southeastern North Kent Line (NKL) services in the latest year (17,100) were 35% below the number operated three years ago (26,200).

2.3 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.

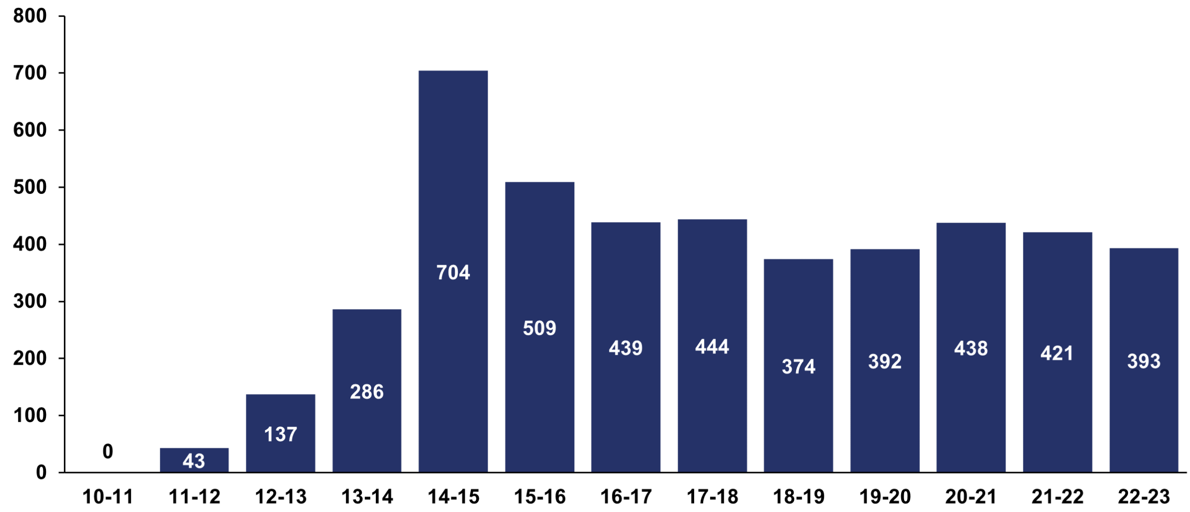
Figure 2.1 Number of passenger train services timetabled on HS1, 1 April 2010-31 March 2023



Source: HS1 Performance Floor Report

2.4 The number of freight services operated on HS1 fell by 7% compared to the previous year (down from 421 last year, to 393). This is the second successive year in which the number of freight services has decreased, but the current number is similar to the 392 freight trains in the period 1 April 2019 - 31 March 2020 (before COVID-19), a difference of less than one percent.

Figure 2.2 Number of freight train services timetabled on HS1, 1 April 2010 to 31 March 2023



Source: HS1 Performance Floor Report

Train service performance

2.5 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%.

2.6 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 NRHS agreed a more challenging target than the previous year, at 5.44 seconds delay per train, compared to 6.80 seconds delay per train for the period 1 April 2021 – 31 March 2022.

Performance against minimum threshold

2.7 Table 1 shows a breakdown of performance for the year ending 31 March 2023.

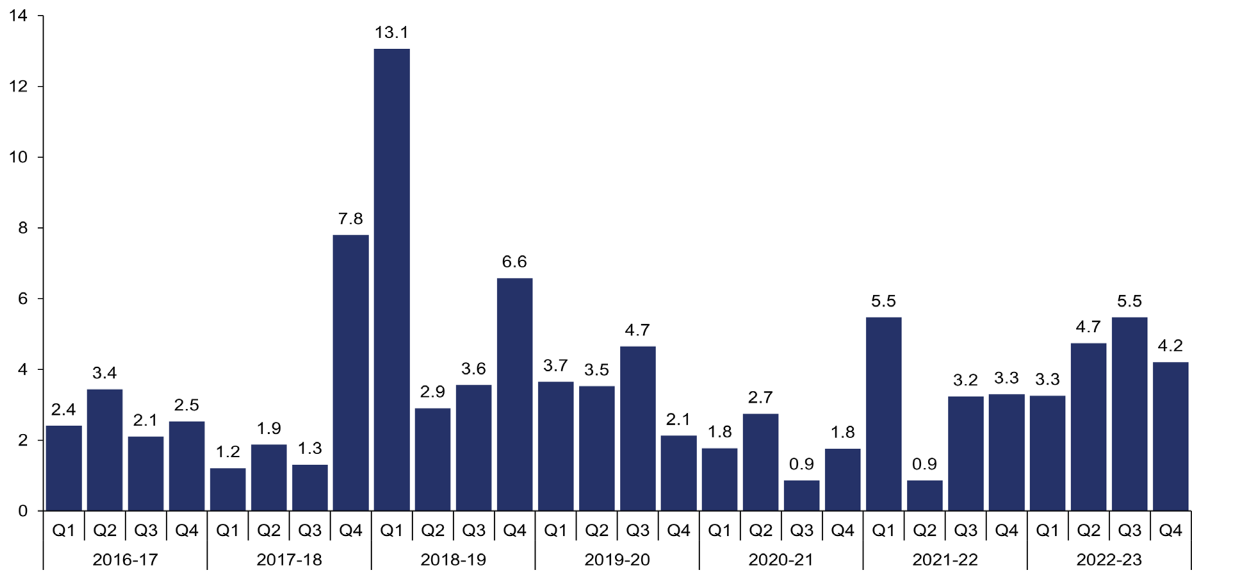
Table 2.1 HS1 Ltd train service performance: 1 April 2022 – 31 March 2023

	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 (St Pancras – North Kent Line via Ebbsfleet)	17,145	48	0.28%	4
Domestic (St Pancras – Ashford)	26,164	140	0.54%	13
International	14,438	64	0.44%	4
Freight	393	4	1.02%	0
Total	**58,140**	**256**	**0.44%**	**21**

Source: HS1 Performance Floor Report

2.8 The proportion of trains delayed by HS1 Ltd-attributable incidents in the latest year was well within the minimum standards set out in the Concession Agreement (13%), at 0.44%. The 256 delayed services attributable to HS1 in the latest year was a 54% increase on the 166 services delayed in the previous year. Additionally, the number of delayed trains for the latest year was a slight (3%) increase on the 249 services delayed three years ago (before COVID-19). The quarterly breakdown of these delays is shown in Figure 4.

Figure 2.3 Delayed train services per 1,000 trains operated attributed to HS1 Ltd by quarter, 1 April 2016 – 31 March 2023

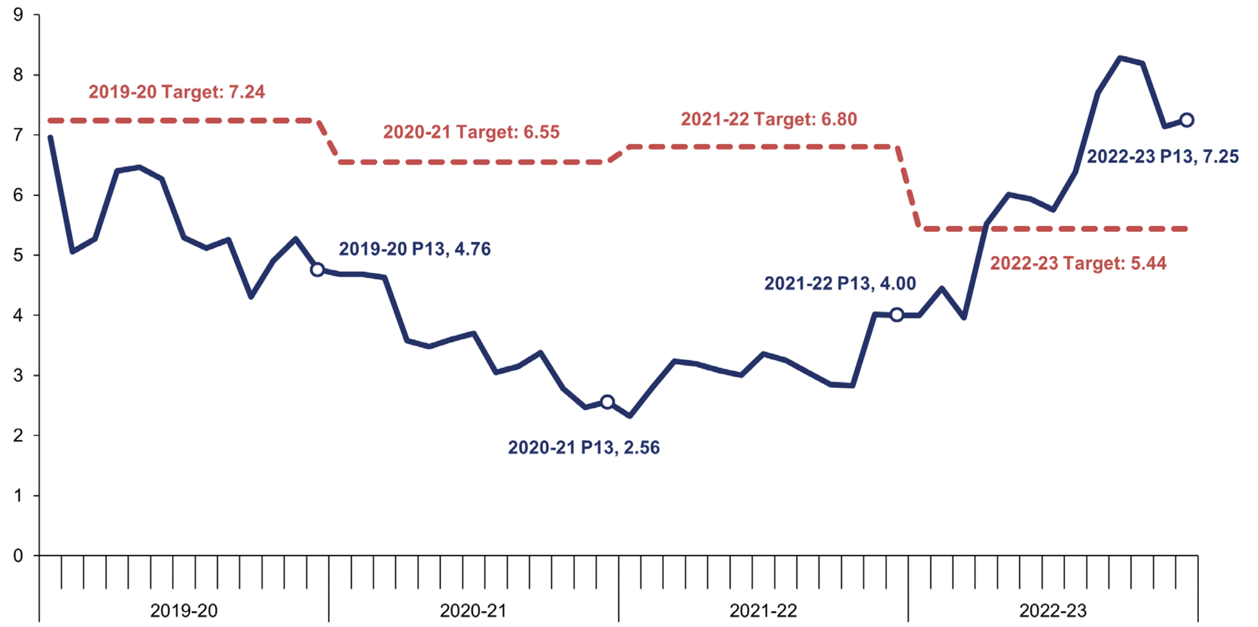


Source: HS1 Performance Floor Report

Performance against stretch target

2.9 In terms of its stretch target for the latest year (5.44 seconds delay per train), the average delay per train due to HS1 Ltd-attributable incidents was nearly two seconds worse than the target, at 7.25 seconds. The average delay in the latest year was more than three seconds longer than the previous year, where the average was 4.00 seconds. Figure 5 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 2023



Source: HS1 Ltd Asset Management Annual Statement (AMAS), 1 April 2022 – 31 March 2023.

2.10 In summary, there has been a trend of increasing delays 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.

3. Asset management

3.1 This chapter examines how HS1 Ltd has managed the 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 and planning;
- renewal planning and delivery;
- progress on research and development (R&D); and
- environmental sustainability.

Delivery of PR19 asset management recommendations

3.2 HS1 Ltd's response to commitments it made at PR19 are largely closed or underway, or we have agreed with HS1 Ltd that some commitments can be replaced with better alternatives.

3.3 This year, HS1 Ltd successfully closed out the following commitments:

- The review of route maintenance frequencies has been carried out to use actual historical failure rates to build future models. This data is now of sufficient volume and quality that it can be modelled to give insight into better models for intervention rather than predicted rates based on the date of asset installation. This has the potential for more accurate and less conservative intervals between intervention. This data has also been used to verify changes to the renewal plans for the remainder of the control period which will have the effect of reducing interventions and cost through to the end of the control period. It also forms the starting point for CP4. The effectiveness of this will be monitored through our attendance of the quarterly renewals board comprising HS1 Ltd, NR(HS), operators and DfT.
- A recommendation to review the station concession agreement and identify any levers to incentivise more efficient delivery of works via the contract with NR(HS). HS1 completed this review which yielded a useful summary of how

the agreement works but concluded there are no significant areas to be exploited. It is not considered that further work on this will deliver any benefit.

- HS1 published a stations enhancement framework in April 2022. It takes a “beneficiary pays” approach to the funding of enhancements on its stations, as agreed with stakeholders.

3.4 There are six recommendations still to be closed in the remaining years of the control period. Evidence reviewed shows all are on target and we are working with HS1 Ltd to ensure that the outputs of those commitments will effectively inform HS1 Ltd’s submissions for PR24.

3.5 We continue to monitor the progress of these recommendations via quarterly meetings with HS1 Ltd.

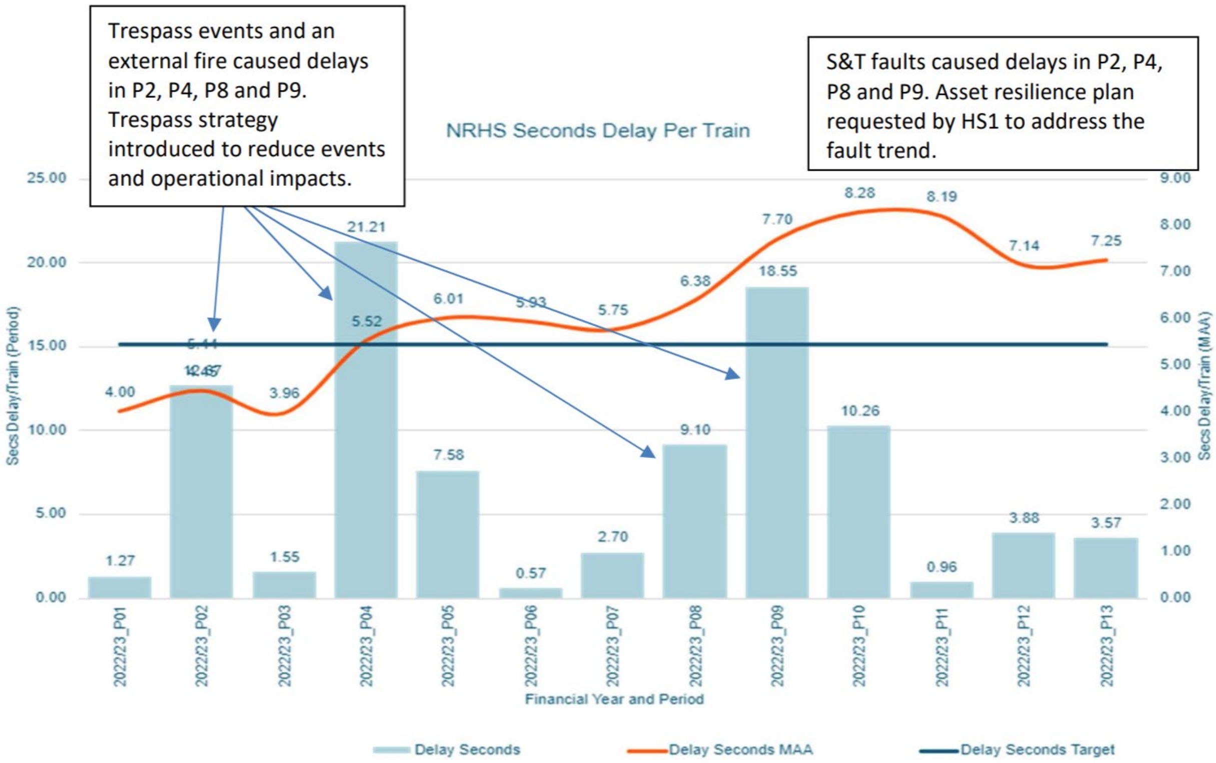
Asset performance, availability, condition and data

Asset Performance - Route

3.6 This year the route incurred 7,100 minutes delay due to asset issues, 29% worse than the target of 5,500 minutes.

3.7 This year there were ten major incidents (defined as those that led to more than 200 minutes delay), compared to five last year. Five of this reporting year’s incidents arose from points failures. Figure 6 shows that these occurred in periods 2,4,8 and 9. We have reviewed HS1 Ltd’s asset resilience plan, developed in response to the failures, and understand that it has been implemented with NR(HS) ensuring that measures are appropriate to the level of risk. This will be a specific area of interest to us in the year ahead with the development of a lead indicator required and updates to the specific asset strategy, a key deliverable for the PR24 process.

Figure 3.1 Seconds delay per train for all incidents on HS1 network (infrastructure and operational, orange line shows Moving Annual Average (MAA))



Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023

3.8 Asset performance improved in the last four periods of the reporting year and HS1 Ltd has attributed this to points resilience plans being implemented. We are continuing to challenge HS1 Ltd, to demonstrate that these plans are delivering a sustained improvement (i.e. that the reduction in faults over the last four months is not due to other factors, such as good weather).

3.9 Trespass and vandalism events reduced slightly compared to the previous year but are still having a significant impact on delays. We welcome the work undertaken on a new trespass management strategy. In the coming year, we will continue to monitor the practical implementation of this strategy, and our PR24 periodic review will look at how this strategy feeds into specific asset strategies.

3.10 The first de-wirement on HS1, since its opening, occurred in November 2022. It was caused by a train fault and led to the closure of one line for one day while the infrastructure was repaired. A post-incident review jointly commissioned by HS1 Ltd and NR(HS) concluded that restoration of infrastructure was well-executed but not without difficulty. Previous issues identified with command-and-control capability were highlighted in this event, in particular gaps in response between parties. We support a recommendation from HS1's independent incident review for a cross-industry programme of test events. The event left passengers stranded due to communication challenges, and evidence of changes to this need to be seen. We will monitor the outputs of these tests throughout the financial year 2023-24, to understand what actions are being taken to ensure that all parties work together effectively.

3.11 The dominant infrastructure fault was points failures. We have seen evidence that NR(HS) has undertaken a full review of all faults for this discipline, identifying bottom-up trends and generating actions. We have challenged HS1 Ltd to provide assurance that these actions are delivering benefits. We acknowledge that HS1 Ltd has improved its assurance processes over the last year. In the coming year, we will be seeking greater clarity from HS1 Ltd on how it is using failure trend data to plan its work-banks for future control periods, during PR24.

3.12 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

3.13 We took on our role of monitoring and reporting on HS1 stations on 27 July 2022, so this is the first time stations have been included in our Annual Report on HS1 Ltd. We are grateful to HS1 Ltd and its stakeholders for their co-operation, arranging site visits and meetings, and providing detailed information about the four stations. This has helped us familiarise ourselves with the asset base, the current challenges and the key risks and opportunities.

3.14 In the last year, the main area of concern at stations was the availability of lifts, escalators, and travelators at the three stations managed by NR(HS). We have held detailed discussions with operators, who highlighted the significant impact these asset faults were having on passenger experience; and the operators' ability to manage pedestrian flows around the stations.

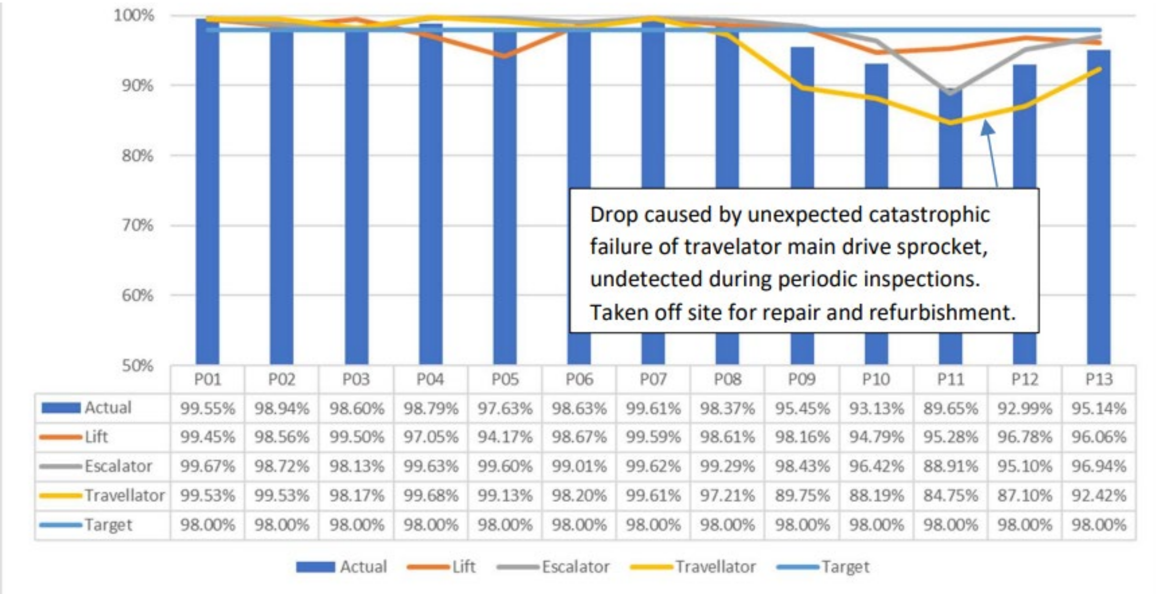
3.15 NR(HS) reports that these availability issues are caused by problems in the supply chain, such as slow contractual mechanisms for reactive maintenance and a global shortage of components. Asset data has shown that greater deterioration than forecast at PR19 is a significant factor and we deem that this is within NR(HS) and HS1 Ltd's control, to make better use of its asset data and to revise its maintenance and renewals activities. 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 ahead of the PR24 planning process.

3.16 We have seen evidence that HS1 Ltd is taking reasonable steps to seek urgent improvements from NR(HS) and suppliers, and has initiated work to ensure it understands the root cause of the issues.

3.17 We expect HS1 Ltd, working with its contractors and suppliers, to take all reasonable measures to meet the availability target in the coming year. We will be monitoring this closely and, if HS1 Ltd continues to miss its target, we will escalate as necessary, in accordance with our published [CP3 holding to account policy for HS1 stations](#).

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



	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13
Actual	99.55%	98.94%	98.60%	98.79%	97.63%	98.63%	99.61%	98.37%	95.45%	93.13%	89.65%	92.99%	95.14%
Lift	99.45%	98.56%	99.50%	97.05%	94.17%	98.67%	99.59%	98.61%	98.16%	94.79%	95.28%	96.78%	96.06%
Escalator	99.67%	98.72%	98.13%	99.63%	99.60%	99.01%	99.62%	99.29%	98.43%	96.42%	88.91%	95.10%	96.94%
Travellator	99.53%	99.53%	98.17%	99.68%	99.13%	98.20%	99.61%	97.21%	89.75%	88.19%	84.75%	87.10%	92.42%
Target	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%	98.00%

Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023.

Asset capability and condition

3.18 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 condition change.

3.19 For stations, work by HS1 Ltd is ongoing to understand water management around the transition roof at St Pancras. We understand that this work is being carried out effectively, with minimal disruption to stakeholders.

3.20 We recognise that the condition of lifts, escalators and travelators at all stations has degraded faster than HS1 Ltd forecast at PR19. This is reflected in increased need for refurbishment and reduced availability of these assets. As noted above, we expect to see deeper understanding of these assets as part of future planning in PR24. Asset management choices at PR24 should consider possible trade-offs and adjustments to metrics, targets, or management arrangements.

Asset management capability and planning

3.21 HS1 Ltd made good progress against asset management targets in the reporting year. While more remains to be done to support the PR24 process, good work on the track asset has been achieved. New data-driven models should allow efficiencies to be found, prioritising interventions without significant risk to the overall 40-year asset plan. We encourage HS1 Ltd to continue this work, with applicable learning being extended to other asset groups.

3.22 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), and the detailed analysis of deferred renewals, which was in response to deliverability concerns we raised in our last annual report. We understand that this work will take into account the relationship between asset management decisions, performance and long-term asset sustainability as part of planning for PR24.

3.23 HS1 Ltd’s ‘asset information strategy roadmap’ continues to hit its milestones. The coming year is a significant year for roll-out of solutions and systems to support effective decision-making. A new enterprise asset management system is due to be rolled out and we will be monitoring the impact of this on business-as-usual assurance and PR24 planning in the year ahead. 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 will be seeking clear evidence from both HS1 Ltd and NR(HS) during the PR24 process, to understand how these opportunities are being implemented.

Renewal planning and delivery

3.24 In our last annual report on HS1 Ltd, we raised concerns about its readiness to deliver a significant increase in renewals volumes over the coming years. HS1 Ltd has responded positively to our suggestions for improvements in this area. In particular, we have seen improvement in HS1 Ltd's assurance of changes to its renewals plan. A greater maturity of planning is reflected in HS1 Ltd's use of new performance measures and more focused leading indicators.

3.25 This year, the volume of renewals delivered was 73% of the volume planned at PR19. This is an improvement from previous years (delivery was 35% and 68% of plan in Years 1 and 2 respectively). We also note that the volume of work in the plan was much greater this year: 201 volumes were delivered in Year 3 of the control period, compared to 67 volumes in Years 1 and 2 combined.

3.26 We recognise that there were a number of complex factors affecting delivery this year. 27% of the plan was not delivered, of which HS1 Ltd attributed 7% to industrial action; and 20% to the availability of materials. We undertook a detailed review of these undelivered projects. We were satisfied, based on the evidence we found, that all of the undelivered projects were risk-assessed as having low impact on future performance, provided that they are replanned successfully. We will continue to monitor this, to ensure these projects are replanned efficiently and to ensure lessons learned are applied to planning for PR24.

3.27 In summary, we are supportive of the improvements HS1 Ltd has made since we raised concerns about the deliverability of route renewals in last year's annual report. Not all the planned renewals were delivered this year, but we recognise this was partially outside of HS1 Ltd's control, and we are satisfied that any deferrals were risk-assessed to mitigate impacts on the wider plans. Looking ahead, we expect to see continued improvements in delivery, as HS1 Ltd's use of new assurance and data tools become embedded (as discussed below).

3.28 We also note that HS1 Ltd spent £2.11m of its forecast £2.87m on stations renewals in the reporting year. This reflected 88% of those renewals being delivered by volume. This is the first year that HS1 Ltd has reported these renewals in this way so we cannot compare its performance to previous years. However, the company has informed us of its intention to develop a method of weighting renewals of different asset types to reflect the complexity of works to enable more meaningful reporting against this measure in future years.

Review of Workbank Planning

3.29 In response to the concern in our previous annual report about the deliverability of the CP3 workbank, HS1 Ltd and NR(HS) have this year undertaken a review of the effectiveness and necessity of the portfolio. We have seen sufficient evidence to assure us that works were being deferred efficiently, achieving spend reductions in-year, with minimal impact to either asset sustainability or asset performance. We support this work and its emerging outcomes, but the work is ongoing, and we will continue to monitor changes closely, to ensure decisions are resulting in efficient and deliverable plans.

3.30 The main cost variance resulting from HS1 Ltd's review is the deferral of ballast renewal into CP4, to allow a more effective delivery strategy to be developed. We concluded that this was an appropriate decision.

3.31 There are three projects not being delivered in CP3 which carry higher performance risk from being deferred, and these are subject to a risk and deferral management process. We have seen reasonable mitigation plans for these deferrals, but we are continuing to engage with HS1 Ltd going into PR24, to understand the impacts of these changes on the wider asset management plans; to ensure an optimal spend profile on future renewals.

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

3.32 We welcome HS1 Ltd's introduction of an improved assurance regime in the reporting year to address concerns that we and other stakeholders had raised on its reliance on lagging indicators to report progress. An initial set of leading indicators for renewals planning has been used in the quarterly renewals board meeting with stakeholders in order to enable dialogue prior to issues arising with the plan, and therefore allowing mitigations to be developed. These indicators are still relatively new, and we will continue to challenge HS1 Ltd to make the best use of assurance information to enable more stable, transparent delivery of the plan.

Research and development

3.33 At PR19, we encouraged HS1 Ltd to implement a research and development fund. Good governance of research and development funding is essential to ensure that investment is delivering real benefits, or that it is stopped if schemes are not viable. We note continued use of research and development funding this year, which has delivered benefits - notably around analysis of track data. However, in the coming year we expect to see greater clarity from HS1 Ltd on the forecast timeframes for benefits from different schemes.

3.34 For example, HS1 Ltd is currently evaluating a business case for taking forward a technological solution for tunnel and bridge monitoring. It is our understanding that HS1 Ltd sees long-term benefits from these projects but needs to assess if the outputs of these solutions will be compatible with the new enterprise asset management system.

Environmental sustainability

3.35 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.

3.36 For each priority area, HS1 Ltd has set targets to 2030 and plans to deliver on these targets. We note good progress this year on climate change resilience and plans to reduce energy use in line with best practice, along with compliance with water pollution consents and requirements. HS1 Ltd publishes annual detailed Environmental, Social, Governance (ESG) updates, and we will review those reports alongside updates to its sustainability strategy, to ensure that the company remains in line with asset management best practice in the area.

4. Finance and efficiency

4.1 HS1 Ltd’s financial reporting for this year is summarised in Figure 8. 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 2022 – 31 March 2023

£m, 2022-23 prices	Actual	PR19 forecast	Difference better / (worse)	2021-22*
Income				
OMR charge	58.3	61.8	(3.5)	47.7
Pass-through income	21.2	21.7	(0.5)	21.3
Total income	**79.5**	**83.5**	**(4.0)**	**69.0**
Controlled track costs				
Network Rail (High Speed) Ltd	47.2	47.2	0.0	49.4
HS1 Ltd	12.3	10.4	(2.0)	10.8
Network Rail Infrastructure Ltd	1.6	1.8	0.2	3.8
Other	1.8	2.6	0.6	0.0
Total controlled track costs	**63.0**	**61.9**	**(1.0)**	**63.9**
Pass through costs				
Rates	8.7	9.7	1.0	9.6
UK Power Network fees and renewals	6.4	6.5	0.1	6.6
Insurance	3.6	3.5	(0.1)	3.5
Power-non traction	2.6	2.1	(0.5)	1.4
Total pass through costs	**21.3**	**21.7**	**0.4**	**21.3**
Freight costs				
Network Rail (High Speed) Ltd	0.1	0.1	0.0	0.1
Network Rail Infrastructure Ltd	0.2	0.2	0.0	0.2
HS1 Ltd	0.1	0.1	0.0	0.1
Total freight costs	**0.4**	**0.4**	**0.0**	**0.3**
Total OMR costs	**84.6**	**84.0**	**(0.6)**	**85.5**
Performance related payments	**0.0**	**0.0**	**0.0**	**0.0**
Total costs	**84.6**	**84.0**	**(0.6)**	**85.5**
Net Income / (Expenditure)	**(5.1)**	**(0.5)**	**(4.6)**	**(16.5)**

Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023

**2021-22 actuals adjusted using November 2022 Consumer Prices Index*

Income

Table 4.2 Summary of HS1 Ltd's regulated income: 1 April 2022 – 31 March 2023

	£m, Feb 2022 prices	Actual	PR19	Difference better / (worse)
International	OMR charges	15.5	21.8	(6.3)
	Pass-through charges	3.7	6.3	(2.7)
	Total	19.2	28.1	(9.0)
Domestic	OMR charges	42.3	39.8	2.4
	Pass-through charges	17.6	15.4	2.2
	Total	59.8	55.2	4.6
Freight	OMR charges	0.5	0.2	0.3
	Pass-through charges	0.0	0.0	0.0
	Total	0.5	0.2	0.3
Total regulated income		79.5	83.5	(4.0)

Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023

4.2 HS1 Ltd received £79.5m of regulated income this reporting year, £4m lower than assumed in the CP3 forecast. Regulated income relates to all operations, maintenance and renewals (OMR) charges that HS1 receives from train operators in order to run the network, and also pass-through income which it receives from train operating companies to recover certain costs of using the network.

Pass-through income

4.3 £21.2m of HS1 Ltd's regulated income was from pass-through income from train operators, recovering costs that are largely uncontrollable by the company. These include non-traction electricity, electrical infrastructure costs, insurance and business rates.

4.4 Pass-through income was £0.5m below the CP3 forecast, largely due to lower costs, driven by savings on non-traction electricity. HS1 Ltd noted that pass-through income is forecast to increase in the later years of the control period when the recent increases in electricity and business rates will affect its contracts with suppliers.

Income from OMR charges

4.5 £58.3m 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 £3.5m below the CP3 forecast due to £6.3m lower recovery on Eurostar train paths, which was partially offset by £2.4m higher recovery on Southeastern services following volume reopener, plus £0.3m higher recovery costs for freight.

4.6 A component of 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 escrow payment holiday for 16 periods during the financial year of 2020-21 and 2021-22. This offer was accepted by Eurostar who deferred around £15.7m of payments into the escrow which it must repay with interest within the control period.

4.7 The impact of COVID-19 on HS1 Ltd’s regulated income was somewhat reduced by the protections embedded within HS1 Ltd’s concession structure. While Southeastern reduced its offer of paths for the First Working Timetable, adversely impacting HS1 Ltd’s track access income, many paths were already locked in through the previous First Working Timetable, delaying the financial impact on HS1 Ltd. In addition, HS1 Ltd benefits from protection afforded by the Domestic Underpin agreement, which guarantees a minimum number of domestic services with the balance paid for by Government.

4.8 The impact of COVID-19 on HS1 Ltd’s regulated income was also reduced by a reopener provision based on train volumes. Subject to an annual RPI-linked adjustment, the expectation would ordinarily be that OMR charges agreed with operators would remain relatively stable until the end of the control period. However, HS1 Ltd’s access terms also contain a provision whereby OMR charges can be reopened where the forecast volume varies from the relevant baseline – in the case of passenger trains, by more than ±4%. The reopener sets revised OMR charges, based on updated expected train minutes, enabling regulated OMR charges to be spread over a lower number of train paths and minutes. This attempts to ensure HS1 Ltd recovers sufficient charges to cover its costs.

4.9 HS1 Ltd agreed to hold annual reopeners until the end of CP3 regardless of volume variances. It executed the third reopener for December 2022 to recover the shortfall of around £3.5m that was identified in the first two reopeners as a result of domestic services within the modelling used not aligning with the split of services set by the Domestic Underpin Agreement.

4.10 Despite the revision of OMR charges to recover fixed costs by the volume reopener, income in the reporting year was lower due to reductions in train services from both Eurostar and Southeastern.

Expenditure

Controlled track costs

4.11 The majority of HS1 Ltd's regulated route costs (£47.2m of a total of £84.6m) were incurred in operating and maintaining its network. This work is undertaken through a long-term, fixed price contract with NR(HS), uplifted by RPI + 1.1% each fiscal year. Figure 10 provides a breakdown of NR(HS)'s costs.

4.12 The Operator Agreement between HS1 Ltd and NR(HS) requires the former to pay train operators if the latter 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) outperformed by £1.6m and therefore payments are required to be shared with train operators. This outperformance was made up of £1.4m lower operating costs and £0.2m less contract risk costs.

Table 4.3 Network Rail (High Speed) costs: 1 April 2022 – 31 March 2023

£m, Feb 2022 prices	Actual	PR19	Difference better / (worse)	2021-22 *(actuals adjusted using November 2022 Consumer Prices Index)*
Staff costs	21.2	22.0	0.8	21.3
Plant & materials	6.1	6.3	0.2	5.6
Overheads	3.7	3.7	0.1	3.7
Corporate functions & Network Rail Infrastructure Ltd	3.5	4.1	0.6	
Sub-contractors	2.3	2.7	0.4	2.7
Consultancy costs	1.8	0.5	(1.3)	1.3
Security of infrastructure	1.6	2.1	0.5	2.0
Insurance	0.6	0.7	0.1	0.4
Operating costs	**40.7**	**42.1**	**1.4**	**40.7**
Management fee	3.4	3.4	0.0	3.5
Risk premium	1.6	1.8	0.2	1.1
Total NR(HS) costs	**45.7**	**47.3**	**1.6**	**52.3**

Source: NR(HS) Outturn statement, 1 April 2022 – 31 March 2023.

4.13 HS1 Ltd's internal costs are shown in Figure 11. These were £12.3m this reporting year, £2m higher than forecast at PR19. This included:

- £1m of increased consultancy costs, comprising £0.3m finance, procurement and information technology consultants to cover interim staffing gaps, £0.3m specialist legal support, £0.1m of business rates advice, and £0.1m on a modeller to address COVID-19 spend uncertainty;
- £1m of increased staff costs: HS1 Ltd increased its headcount to manage additional work from COVID-19 including spot-bidding for timetable paths, volume reopeners and escrow account management; and from strike billing;
- offsetting the above, R&D costs were £0.3m lower than assumed due to timing variances for the development and implementation of some schemes during the control period.

Table 4.4 Figure 11 - HS1 Ltd's internal costs: 1 April 2022 – 31 March 2023

£m, 2022-23 prices	Actual	PR19 forecast	Difference better / (worse)	2021-22*
Staff costs	6.2	5.2	(1.0)	5.3
Technical support / consultants	2.6	1.6	(1.0)	2.1
Office running costs	1.4	1.3	(0.1)	1.0
R&D	0.1	0.5	0.3	0.4
Other costs	1.9	1.8	(0.2)	1.9
Total HS1 Ltd Costs	**12.3**	**10.4**	**(2.0)**	**10.8**

Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023.
**2021-22 actuals adjusted using November 2022 Consumer Prices Index*

Pass-through costs

4.14 Some of HS1 Ltd's costs are passed straight through to train operators with offsetting pass-through income. These costs are largely uncontrollable by HS1 Ltd and include traction electricity costs, rates and insurance. Pass-through costs were £21.3m this reporting year, which represented outperformance of £0.4m against PR19 assumptions. Most of this saving derived from a £1.0m saving on business rates where there was no increase in the reporting year. However, this was partially offset by electricity prices being £0.5m higher than forecast at PR19.

Freight costs

4.15 HS1 Ltd incurs costs relating to freight traffic, including maintaining freight-specific infrastructure. Although few freight services ran during the period, HS1 Ltd is still obliged under the Concession Agreement to maintain these assets and incur associated costs. Freight costs were £0.4m, which was in line with the PR19 forecast.

Efficiency

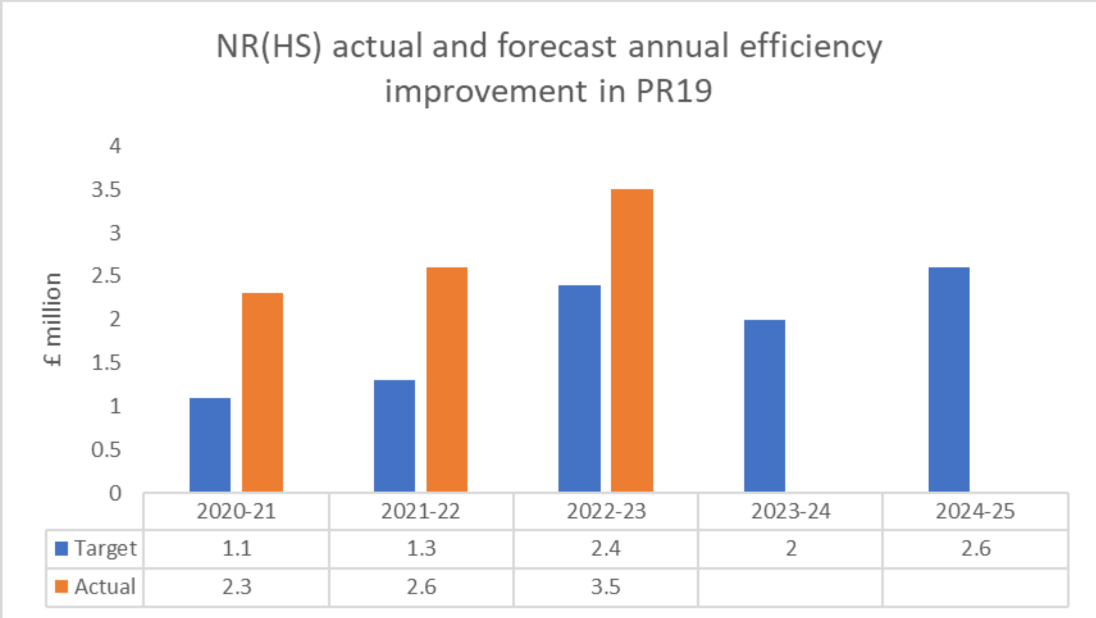
4.16 As part of PR19, we determined an efficient level of cost for the operations, maintenance and renewal of the route infrastructure.

4.17 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 £2.4m.

4.18 NR(HS) has reported efficiencies additional to those planned: £3.5m against a target of £2.4m. This included £1.7m of staff related savings due to managing vacancy gaps and workforce reform benefits and £1.1m relating to NR(HS) provision of services agreement with NRIL which negotiated a reduction in national functions for the remainder of the control period.

4.19 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 COVID-19), 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 breakdown with HS1 Ltd due to commercial sensitivities, but we welcome the company's offer to outline these savings for stakeholders in preparation for sharing its PR24 plans.

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



Source: HS1 Ltd AMAS, 1 April 2022 – 31 March 2023

Stations operations and maintenance costs

4.20 We do not regulate HS1 Ltd's operations and maintenance spend for stations, which is agreed annually between HS1 Ltd and operators. We understand that HS1 Ltd spent around £32.95m on these costs, against a budget of £33m.

Route escrow account

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

4.22 The balance on the route escrow account at 31 March 2023, was £27.1m. The escrow balance increased by £10.2m in the year due to:

- £34.3m of payments into the escrow account. This is an increase of £5.3m against the PR19 forecast.
- £9.4m was withdrawn to pay for renewals delivery, £8m less than forecast at PR19 due to less renewal work being undertaken than planned (see Chapter 3 for details).
- £0.4m of interest earned in the year.

4.23 Funds invested as at year end for the route are £100m with maturity dates at regular intervals up until March 2025.

Stations escrow accounts

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

4.25 The balance across all the stations escrow accounts at 31 March 2023, was £8.7m, £0.5m less than at 31 March 2022. The escrow balances comprise:

- £11.8m income into the escrow account through long term charges for each station;
- £4.5m withdrawn to pay for renewals delivery; and
- £0.1m of interest earned in the year.

4.26 Funds invested as at year end for the stations are £53m. The stations escrow funds have been invested on the same basis as route.

Overview of statutory financial statements

4.27 HS1 Ltd made a profit after tax of £36.8m this reporting year (up from £30.1m the previous year) with earnings before interest, tax, depreciation and amortisation (EBITDA) of £65.8m (£20.5m the previous year). Its net assets increased to £157.1m from the £88.8m of the previous year, primarily due to the reported profit. These matters are explained in HS1's published statutory financial statements. No dividend payments were paid in the year.

4.28 During the year the company stabilised itself following COVID-19, and established recovery in a period of ongoing challenges to the rail industry from the wider economy.

4.29 The ratio of cash available to service the annual debt interest and principal payments (DSCR) for 1 April 2022 – 31 March 2023 was 1.46x, up from 1.24x the previous year.

4.30 HS1 Ltd remains 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.

4.31 The default level is that at which cashflows are not sufficient to support the current level of debt. At this level a restructuring should be considered and normally it would also give the lenders the right to take direct enforcement action. HS1 Ltd considers that it has material headroom over its default level of 1.05.

4.32 While there is still uncertainty in the wider economy and rail industry, HS1's auditors have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements has been appropriate.

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