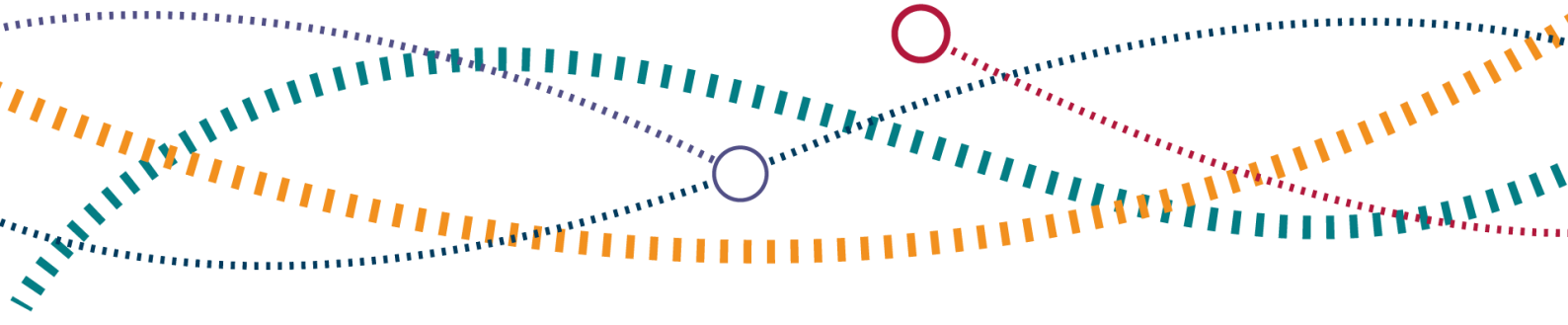
ORR annual report on HS1 Ltd

2019-20

31 July 2020



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Executive Summary

This report sets out ORR's assessment of HS1 Ltd's operational and financial performance for the financial year 2019-20. As this was the final year of the control period it also reports performance across the whole period. Previous years' reports are available on our website. Alongside our regular monitoring, this year we published the final determination of our periodic review of HS1 Ltd 2019 (PR19), assessing its plans for 1 April 2020 – 31 March 2025 (Control Period 3, CP3). More information on PR19 can be found on our website here.

In managing its assets HS1 Ltd must engage extensively with its stakeholders. We have seen the company do this well during the periodic review, as well as in our day-to-day monitoring, and expect this to continue in the new control period.

HS1 Ltd's delivery for its users remains significantly better than the minimum standard set out in its concession and overall it has maintained a high level of train service reliability throughout the period. To provide more insight on how well it is doing we are also reporting on the company's train service and asset performance against that of previous years and also against the stretching targets it set itself for the year, where it measures its impact on passengers in seconds.

For financial performance we examine the regulated aspects and have assessed HS1 Ltd's actual income and expenditure against that which was originally assumed at the start of the second control period (CP2, 1 April 2015 – 31 March 2020).

Train service performance

The company's performance improved during 2019-20. The number of services delayed by HS1 Ltd-attributable incidents in 2019-20 was 249 (0.34% of all services using the network). This was down from 478 (0.65%) in 2018-19. A substantial fall in the number of services delayed by track faults was the reason for this improvement. HS1 Ltd also achieved its stretch target for the average number of seconds each train was delayed by incidents attributed to HS1 Ltd.

Asset management

Underlying asset reliability was generally good this year, when compared to the average standard applied for the control period. There were seven incidents recording greater than 200 minutes of delay totalling 3,237 minutes – two of which were not asset-related

and were the result of trespassers which accounted for 456 minutes.

There has been a significant reduction in both the total number of faults and the number of those faults which affected services by the end of CP2 compared to the final year of the previous control period.

The infrastructure's capability has continued to remain as originally designed as does the maximum line speed of 300km/h. The condition of the assets has also remained good overall, with asset degradation in line with expectations. However, as noted in our PR19 determination, the assets are ageing and will require increased levels of renewals in future control periods.

HS1 Ltd expects renewals spend for the whole of CP2 to be approximately £27.6m, including costs of project management. This would be £1.5 more than our PR14 determination, which expected an RPI-adjusted total of £26.1m, but we understand that some of this represents allowance for risk which may not be required to be spent.

£3.3 million of CP3 renewals were brought forward and delivered in CP2, while £8.7 million of CP2-scoped works were pushed back into CP3. Undertaking some work early to ensure a smooth transition between control periods is a reasonable approach, as is replanning some works according to when they can be undertaken most efficiently, regardless of control period.

We agree with HS1 Ltd's assessment in its Asset Management Annual Statement (AMAS) that the current asset management capability of the company, and its strategic partners, are of a level of maturity for the safe and economic operation, maintenance and renewal of its asset portfolio.

Financial performance

HS1 Ltd's regulated costs exceeded its regulated income by £0.1m in 2019-20.

Our PR14 determination had expected income to be £2.4m more than expenditure, therefore the company has underperformed by £2.5m: it received £75.8m of regulated income, £2.6m higher than assumed in PR14 but spent £75.9m operating, maintaining and renewing its rail infrastructure in the year, £5.1m higher than assumed in PR14.
Over the whole control period (1 April 2015 – 31 March 2020), we note that (adjusted for inflation) overall expenditure has decreased by 16.1%: Network Rail (High Speed) Ltd's costs have decreased by 21.4% but HS1's costs have increased by 12.2% from 2014-15.

Health and safety

There was good progress in safety performance this year, with the Fatalities and Weighted Injuries (FWI) index down to 0.027 per 1m hours worked, down from to 0.034 in March 2019.

Over CP2 we have seen evidence that HS1 Ltd has improved its understanding of the importance of its role as an “intelligent client” and in its organisation to deliver this. We have noted improvements in Network Rail (High Speed) Ltd’s organisational structure to maintain the asset as it ages. HS1 Ltd’s governance structure has been developed to provide more collaborative working with, and constructive challenge to, Network Rail (High Speed) Ltd decisions.

HS1 Ltd and Network Rail (High Speed) Ltd have made good progress in use of our risk management maturity model (RM3), and we note that HS1 Ltd intends to make use of the results of its own and its suppliers’ self-assessments to deliver continuous improvement.

COVID-19

We wrote to HS1 Ltd earlier this year to thank it and Network Rail (High Speed) Ltd for their work during the ongoing pandemic. While the period covered in this report does not reflect the full impact of this unprecedented event, we note that it had a significant effect on how HS1 Ltd operated and managed risk in the final four-week period of 2019-20: Control measures were implemented, while maintaining the safety of the workforce, passengers and members of the public.

Background

HS1 Ltd has a 30-year Concession Agreement from the Secretary of State for Transport to operate and manage the HS1 network. This agreement is between those two parties only and ORR had no role in devising its terms.

HS1 Ltd is responsible for the overall management and operation of the HS1 network, and subcontracts delivery of operations, maintenance and renewals to Network Rail (High Speed) Ltd (NR(HS)). NR(HS) is also the safety dutyholder for the HS1 network and therefore responsible for compliance with regulatory requirements relating to the management of safety on the HS1 network.

ORR is the health and safety regulator for the HS1 network under the conventional suite of legislation. It 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 2019.

Under the terms of the Concession Agreement, ORR's role has been defined as ensuring the long-term sustainability of the asset, while also making sure that HS1 Ltd is provided with incentives to reduce the costs of provision of infrastructure and access charges.

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.

We monitor train service performance through data provided by HS1 Ltd against key performance metrics. Asset management is monitored through delivery of HS1 Ltd's Asset Management Strategy. The Asset Management Annual Statement, along with asset stewardship key performance indicators, is used to assess HS1 Ltd's performance in maintaining its assets.

1. Train service performance and traffic volume

Overview

HS1 Ltd's train service performance improved during 2019-20. The number of services delayed by HS1-attributable incidents[1] in 2019-20 was 249 (0.34% of all services using HS1). This was down from 478 (0.65%) in 2018-19. A substantial fall in the number of services delayed by track faults was the reason for this improvement. HS1 Ltd also achieved its stretch target for the average number of seconds each train was delayed by HS1-attributable incidents.

1.1 In terms of HS1 Ltd's obligations in its Concession Agreement we monitor operational performance against minimum thresholds set out in that 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 sets itself – and its subcontractor NR(HS) – a separate, more challenging target of 7.24 average seconds delay per train[2].

1.2 Figure 1 shows a breakdown of performance for the year ending 31 March 2020.

Figure 1 – HS1 Ltd train service performance in 2019-20[3]

	Total number of trains timetabled	Total number of delayed trains	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)	26,324	2,306	64	0.24%	3
Domestic (St Pancras – Ashford)	28,766	3,461	105	0.37%	7
International	17,594	3,318	77	0.44%	2

[1] Incidents for which HS1 Ltd is wholly or mainly responsible.

[2] The target in 2017-18 and 2018-19 was 5.00 seconds delay per train.

[3] Some of the figures included in this chapter are subject to revision due to various factors including the re-classification of some delay incidents.

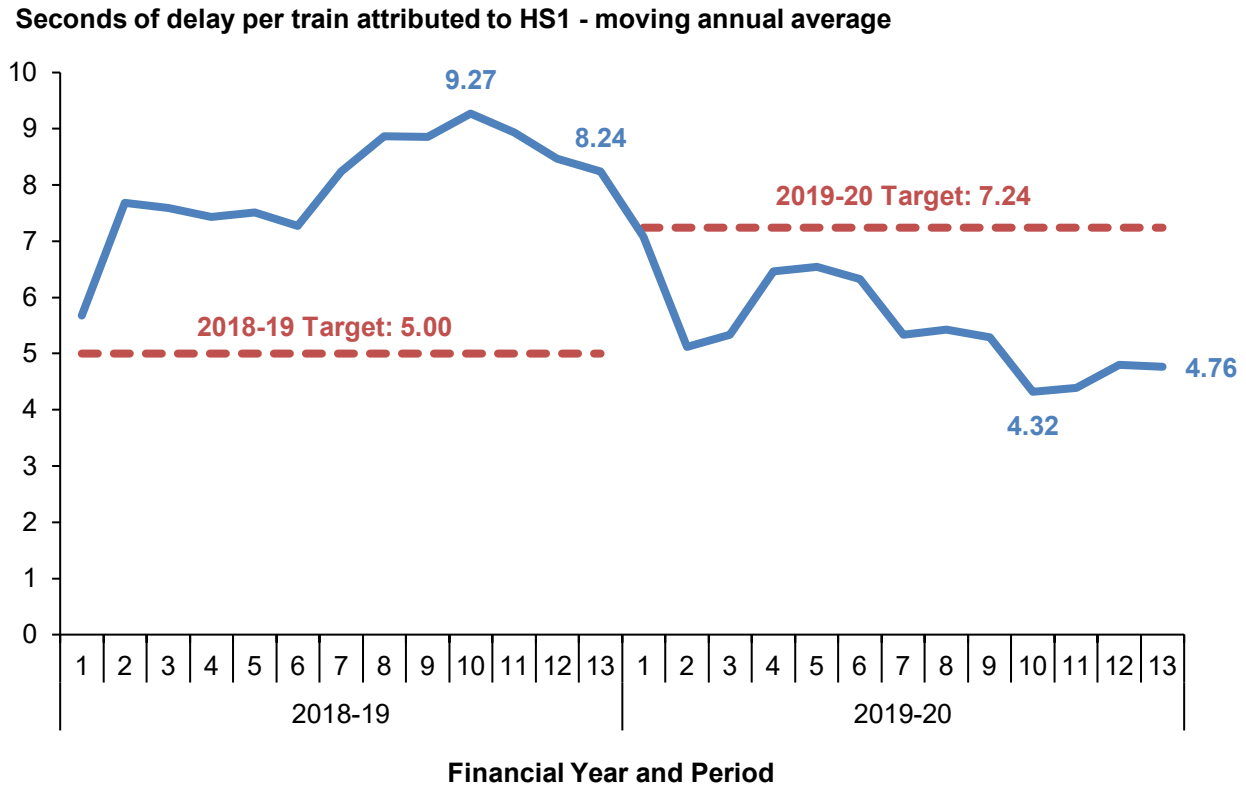
	Total number of trains timetabled	Total number of delayed trains	Total number of delayed trains (attributed to HS1)	Delayed trains (attributed to HS1) as a percentage of timetabled trains	Total number of delayed trains (unknown cause)
Freight	392	61	3	0.77%	0
Total	**73,076**	**9,146**	**249**	**0.34%**	**12**

1.3 The proportion of trains delayed by HS1 Ltd-attributable incidents in 2019-20 was 0.34%. This was well within the minimum standard set out in the Concession Agreement of 13%. As shown in Figure 3, the 249 delayed services in 2019-20 was around half of the trains delayed in 2018-19. However, 2018-19 was a relatively poor year for performance, with last year more consistent with 2017-18 performance. There was a significant improvement in track faults, with 42 services delayed in 2019-20 compared with 288 a year earlier.

1.4 In CP1 (2010-11 to 2014-15), 0.36% of services run on HS1 were delayed due to HS1 Ltd-attributable incidents. This increased to 0.41% in CP2 (2015-16 to 2019-20). This level of performance was achieved at the same time that non-HS1 Ltd delays were increasing. In CP1, 29,960 services (8.2% of all services using HS1) were delayed due to other factors such as train faults and delay imported on to HS1 from the wider rail network. In CP2 this increased to 47,738 (12.9%).

1.5 As can be seen in Figure 2, the average delay per train due to HS1-attributable incidents in 2019-20 was 4.76 seconds. This was less (that is, better) than HS1 Ltd's 2019-20 stretch target of 7.24 seconds.

Figure 2 – Delay per train service attributed to HS1 Ltd by period, 2018-19 to 2019-20



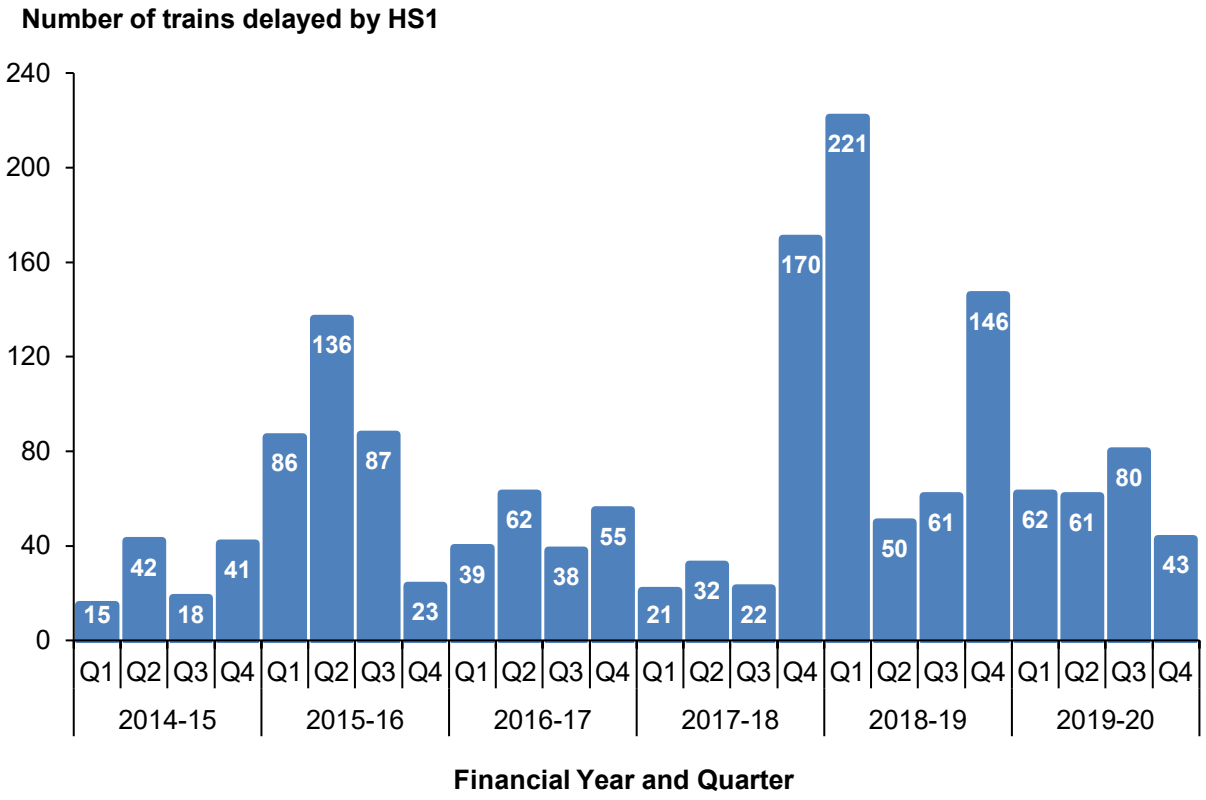
1.6 Figure 3 shows the number of trains delayed by an incident wholly or mainly attributable to HS1 Ltd, displayed by cause.

Figure 3 – Delayed train services attributed to HS1 Ltd by delay category and incident description, 2014-15 to 2019-20

Category	Incident description	Delayed trains attributed to HS1 Ltd					
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Track	TSRs due to condition of track	0	0	0	0	0	0
	Track faults including Broken Rails	0	0	0	11	288	42
	Reactionary delay to P-coded TSRs	0	0	1	0	0	0
	Track (total)	**0**	**0**	**1**	**11**	**288**	**42**
Non-track assets	Points failures	25	95	70	104	14	26
	OLE/Third Rail faults	5	52	2	40	43	4
	Signal Failures	0	14	9	1	0	16
	Track Circuit Failures	27	41	41	16	46	4
	Signalling System & Power Supply Failures	4	35	14	3	10	24
	Other Signal Equipment Failures	3	15	5	0	1	0
	Telecoms failures	0	1	4	3	1	27
	Non-track assets (total)	**64**	**253**	**145**	**167**	**115**	**101**
Network management	Problems with trackside signs including TSR boards	0	0	0	0	0	0
	Other infrastructure	6	3	0	5	13	0
	Track Patrols & related possessions	0	0	1	0	3	0
	Possession overrun & related faults	3	5	8	2	6	7
	Other possession related delay	0	0	8	0	0	7
	Mishap - infrastructure causes	0	0	0	0	0	3
	Network Rail Infrastructure Limited (NRIL) Operations – signalling	32	36	20	26	19	27
	NRIL Operations – control	0	18	1	4	2	0
	NRIL Operations – other	5	11	1	14	5	6
	Timetable planning	6	6	7	11	7	5
	NRIL commercial takeback/other	0	0	0	0	0	0
	Uninvestigated delay	0	0	0	0	0	0
	Network management (total)	**52**	**79**	**46**	**62**	**55**	**55**
Weather and structures	Civil engineering structures, earthworks & buildings	0	0	1	4	17	46
	Wheel slip due to leaf fall	0	0	1	0	0	2
	Other weather	0	0	0	1	0	3
	Weather and structures (total)	**0**	**0**	**2**	**5**	**17**	**51**
External fires	External fires	0	0	0	0	0	0
	Fires starting on NRIL					3	0
	External (total)	**0**	**0**	**0**	**0**	**3**	**0**
All	**Grand total**	**116**	**332**	**194**	**245**	**478**	**249**

1.7 The year saw no improvement in delays due to network management. However, the only category of delay to record an increase in delayed services in 2019-20 compared with 2018-19 was weather and structures: a total of 51 services were delayed this year (up from 17 in 2018-19) with one structural fault resulting in 46 delay services in July 2019.

Figure 4 - Delayed train services attributed to HS1 Ltd by quarter, 2014-15 Q1 to 2019-20 Q4

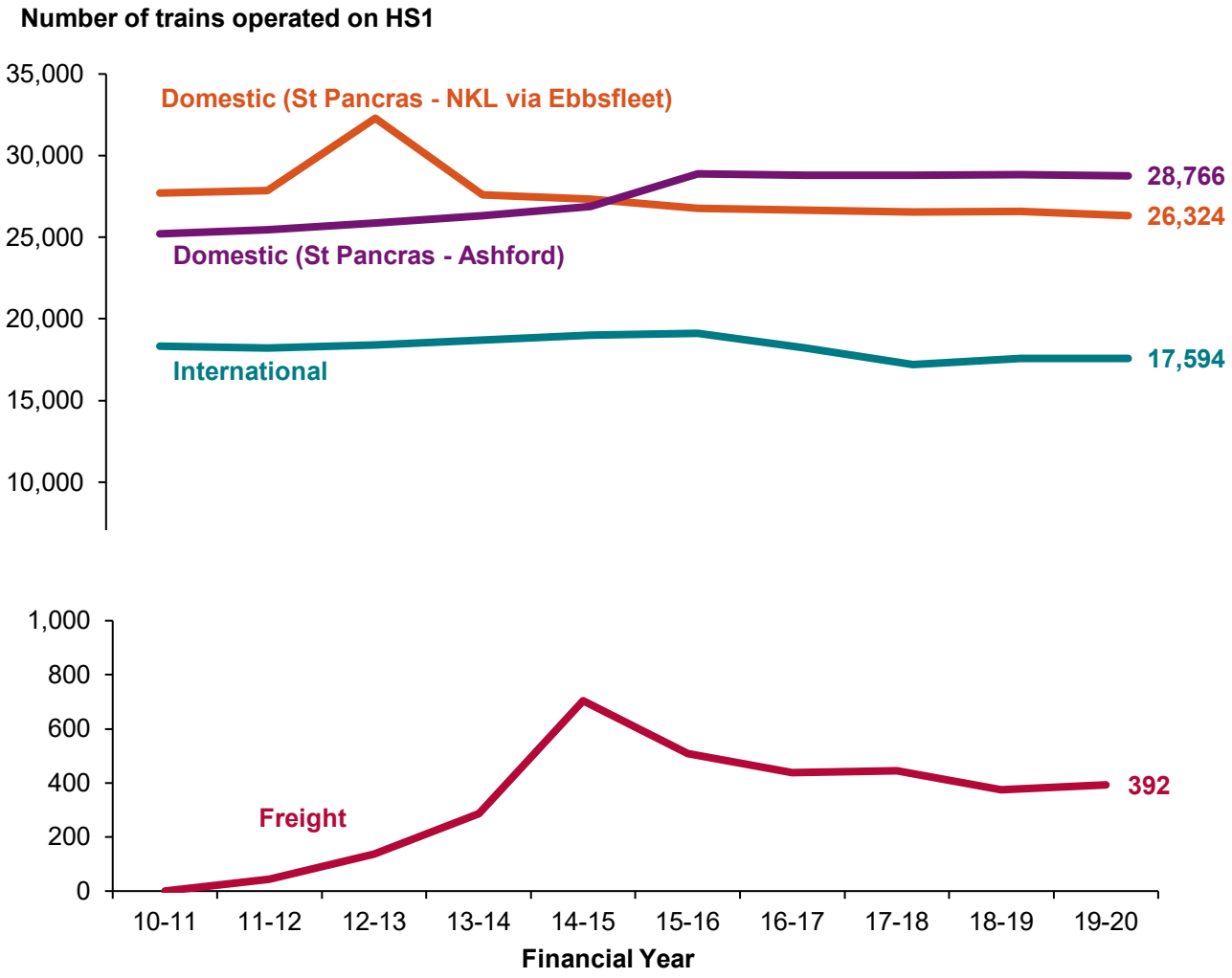


1.8 Figure 4 shows the number of delayed train services attributed to HS1 Ltd by quarter. Overall performance improved during 2019-20. The 43 delayed services in 2019-20 Q4 was the lowest number recorded in any quarter for over two years. Nevertheless, this is still higher than performance at the end of CP1.

Traffic volume

1.9 The total number of trains timetabled to run on the HS1 network decreased by 0.4% compared to 2018-19. This is mostly attributed to a decrease in the number of timetabled North Kent via Ebbsfleet services (down 275) compared with 2018-19.

Figure 5 – Number of train services operated on HS1, 2010-11 to 2019-20



2. Asset management

Overview

Underlying asset reliability was generally good when compared to the average standard applied for the control period. Seven incidents recorded greater than 200 minutes of delay totalling 3,237 minutes. This compares to nine incidents totalling 7,366 minutes in 2018-19. Two of the 2019-20 incidents were not asset-related and were the result of trespassers which accounted for 456 minutes.

Of the five non-trespass incidents, the single largest contributor to delay was a failure of a grout plug[4] in the lining of London Tunnel which resulted in 1,034 minutes delays. The remaining four were due signalling, train radio, transformer and track points failures, totalling 1,747 minutes.

There has been a significant reduction in both the total number of faults and number of service-affecting faults at the end of CP2 compared to the final year of CP1. The severity level of faults that have occurred in 2019-20 is comparable with last year and overall there has been a reduction in the more serious type of faults over the control period.

The infrastructure's capability remain as originally designed as does the maximum line speed of 300km/h and axel-loading of 22.5 tonnes. The condition of the assets continues to remain good overall, with asset degradation in line with expectations. However, as noted in our CP3 determination the assets are ageing and the level of renewals does need to be increased in CP3 and beyond.

It is likely that the overall cost of the renewals work delivered in CP2 will be close to the 2014 budget figure of £23.0m. The final position for CP2 saw £3.3m of CP3 scope and budget being delivered and spent in CP2, with £8.7m of CP2 scope and budget still to be delivered and spent in CP3.

We agree with HS1 Ltd's assessment in its AMAS that its current asset management capability of HS1 Ltd, and its strategic partners are of a level of maturity for the safe and economic operation, maintenance and renewal of the HS1 asset portfolio.

[4] The root cause of the failure was concluded by HS1 Ltd as either being as a result of poor installation of the plug in the tunnel section or the total absence of a plug during installation. Remedial works will be required in CP3 to address the problem.

Asset performance and condition

Asset Performance

2.1 This section builds upon our explanation of train service performance and examines the underlying asset reliability in more detail.

2.2 The HS1 assets performed well and have achieved a moving annual average of 2.02 seconds delay per train due to infrastructure failures, which is the second best in-year performance for CP2 (see Figure 6).

2.3 Underpinning 2019-20 HS1 Ltd's objective for an average of 7.24[5] second delay per train (MAA for all incidents) are targets for delay per train by type of infrastructure. Figure 6 reports outturn for the asset types: Overhead Catenary System (OCS), Mechanical & Engineering (M&E), Signalling & Telecoms (S&T), Civils & Environment and Track. Whilst overall infrastructures failures were below (that is, better than) target in 2019-20, there were two areas which exceeded target – M&E and Civils and Environment. This is an improvement on the previous year where only OCS was below target and overall the target was missed.

2.4 Over the control period as a whole it can be seen that the targets for individual asset groups were achieved approximately 50% of the time[6]. Overall the level of delays due to infrastructure failures has been at a relatively low levels over the control period varying between 1.64 and 5.40 seconds with an overall average of 2.79 seconds per train.

Figure 6 – Moving annual average of seconds delay per train caused by infrastructure failures CP2

		2015-16	2016-17	2017-18	2018-19	2019-20	CP2 Average
Infrastructure Failures	Target	2.14	2.15	1.76	1.76	3.49	2.26
	Actual	2.70	1.64	2.19	5.40	2.02	2.79
	Var	**0.56**	**-0.51**	**0.43**	**3.64**	**-1.47**	**0.53**
OCS	Target	0.64	0.64	0.07	0.07	0.10	0.30
	Actual	0.20	0.00	0.10	0.01	0.01	0.06
	Var	**-0.44**	**-0.64**	**0.03**	**-0.06**	**-0.09**	**-0.24**
M&E	Target	0.43	0.43	0.11	0.11	0.28	0.27
	Actual	0.61	0.00	0.13	0.33	0.35	0.28

[5] The target was 5.50 seconds in 2015-16 and 2016-17. It was 5.00 in 2017-18 and 2018-19 measured as seconds delay/train (MAA).

[6] It should be noted that these internally set targets have been adjusted over the control period by HS1 Ltd, which needs to be taken into consideration when making year or year comparisons.

	Var	**0.18**	**-0.43**	**0.02**	**0.22**	**0.07**	**0.01**
S&T	Target	0.75	0.86	0.96	0.96	1.39	0.98
	Actual	1.90	1.51	0.92	1.10	0.62	1.21
	Var	**1.15**	**0.65**	**-0.04**	**0.14**	**-0.77**	**0.23**
Civils & Environment	Target	0.11	0.11	0.01	0.01	0.26	0.10
	Actual	0.00	0.05	0.06	0.14	0.93	0.24
	Var	**-0.11**	**-0.06**	**0.05**	**0.13**	**0.67**	**0.14**
Track	Target	0.21	0.11	0.61	0.61	1.46	0.60
	Actual	0.00	0.08	0.98	3.82	0.11	1.00
	Var	**-0.21**	**-0.03**	**0.37**	**3.21**	**-1.35**	**0.40**
Delay minutes (13 periods)			2023	2448	6039	2258	3192
NOTE: Values are rounded to 2 decimal places; consequently a summed actual may differ by +/- 0.01 to the stated aggregated NR(HS) actual							
Targets shown are not regulatory, but agreed between HS1 Ltd and NR(HS)							

Source: HS1 Ltd AMAS 2019-20

2.5 In looking across the whole control period (Figure 7), the average standard HS1 Ltd set itself for number of services affecting faults have all been met with the exception of civils and track in 2019-20. This is a similar position to last year, although in the case of track there has been a reduction in both the number of faults, and those which are services affecting.

2.6 Over the whole control period the number of faults and service-affecting faults has generally been below the target HS1 Ltd set. In the case of signalling and M&E faults, which were the two highest fault areas at the start of the control period, there has been a noticeable improvement over the five year period. The two areas that have been the most problematic over the control period have been service-affecting failures of track and civils assets, although the actual number of incidents has been low.

2.7 Overall there has been a reduction in both the total number of faults and number of those faults which are service-affecting at the end of CP2 compared to the final year of CP1. It should be noted that there is not a direct correlation between the number of services delayed and the average number of service affecting incidents per period, as the number of services affected by an incident varies greatly depending upon a wide range of factors, including the time and location of the fault.

Figure 7 – Asset group performance against HS1 Ltd's internal CP2 targets (avgerage per period and avgerage for control period)

Asset group		2014-15[7] Actual Ave / Period	CP2 Standard Ave / Period	2015-16 Actual Ave / Period	2016-17 Actual Ave / Period	2017-18 Actual Ave / Period	2018-19 Actual Ave / Period	2019-20 Actual Avg / period	CP2 Avg/ year
Signalling	Number of faults	9.00	18.00	12.31	12.46	10.23	4.89	3.40	8.66
	Services affecting	4.00	1.00	10.77	1.46	1.54	0.77	0.85	3.08
Telecoms	Number of faults	0.92	4.00	1.15	0.92	0.54	0.08	0.00	0.54
	Services affecting	0.85	1.00	1.08	0.00	0.00	0.08	0.00	0.23
M&E	Number of faults	5.92	9.00	4.46	2.31	1.77	0.69	0.23	1.89
	Services affecting	5.92	1.00	4.38	0.00	0.08	0.15	0.08	0.94
OCS	Number of faults	0.38	2.00	0.31	0.00	0.00	0.46	0.54	0.26
	Services affecting	0.08	1.00	0.00	0.00	0.00	0.38	0.00	0.08
Track	Number of faults	0.00	0.20	0.00	0.08	1.23	3.11	0.15	0.91
	Services affecting	0.00	0.10	0.00	0.00	0.08	0.54	0.15	0.15
Civil	Number of faults	0.00	2.00	0.00	0.23	1.30	0.31	0.46	0.46
	Services affecting	0.00	0.00	0.00	0.08	0.08	0.08	0.15	0.08
Totals	Number of faults	16.22	35.20	18.23	16.00	15.07	9.54	4.78	12.72
Totals	Services affecting	10.85	4.10	16.23	1.54	1.78	2.00	1.23	4.56
Targets shown are not regulatory, but agreed between HS1 Ltd and NR(HS)									

2.8 In 2019/20 there were seven significant incidents on the route (resulting in over 200 minutes delay). This representing a reduction of two over 2018-19:

- Signalling failure at Crismill Crossover on 01/04/2019 which caused 388 delay minutes;
- Trespass incident between Nashenden Crossover and Crismill Crossover on 02/05/2019 which caused 225 delay minutes;
- Trespass incident near Ebbsfleet International on 08/07/2019 which caused 231 delay minutes;

[7] Final year of Control Period 1

- Failed grout plug in the lining of London Tunnel 2 (LT2) on 18/07/2019, which caused 1,034 delay minutes;
- GSM-R Failure at Ashford Control Centre on 28/10/2019 causing 374 delay minutes;
- Transformer failure between Lenham Crossover and Crismill Crossover on 07/11/2019 causing 577 delay minutes.
- Points failure at Crismill crossover on 14/02/2020 resulting in 408 delay minutes.

2.9 UK Power Networks Services (UKPNS)[8] continued to perform well and exceeded the availability target of 99.9885% in 2019-20. There was one event that caused a train service impact of 23 minutes in May 2019. This was due to a cable strike by a 3rd party contractor working on the Barking Riverside Development which caused a loss of supply to HS1.

Impact of COVID-19

2.10 The emergence of the COVID-19 pandemic had a significant effect on how HS1 Ltd operated and managed risk in the final period (13) of 2019-20. Following guidance from Public Health England and industry guidance, control measures were implemented, whilst making sure the safety of the workforce, passengers and members of the public was maintained.

Asset Availability Measures

2.11 Three new asset availability measures that were developed in 2017-18 by HS1 Ltd have now been fully implemented. These are:

- **Operational Availability:** defined as the percentage of time that a specific asset group or system is available for operational use, excluding planned maintenance. The network availability in 2019-20 was 98.9%, which is an increase of almost one percentage point compared to the previous year (97.8%).
- **Engineering Access Statement Availability:** defined as the number of nights per week that the level in the engineering access statement is achieved. Specifically, to provide a single line route for at least 160km/h

[8] UKNPS was commissioned to design, construct, operate and maintain the electrical infrastructure of HS1.

running to be available between St Pancras International and the Channel Tunnel Rail Link (CTRL)/Eurotunnel Boundary on Monday to Friday nights. During 2019-20 there were a total of 237 week nights and the Engineering Statement condition was not met 118 times. This means that the Engineering Access Statement Availability was 50%. However, HS1 Ltd have reported that not meeting the conditions did not have any impact nor caused any conflict with any of the TOC's or FOC's. Engineering access was not reported in 2018-19.

- **Plan/Attainment:** defined as the percentage of work completed in the week. This measure is used to measure the effectiveness of NR(HS) works planning capability. At the end of the 2019-2020 financial year it was reported that 97.8% Planned Maintenance was achieved against a stretch target of 95%. Plan/attainment was not reported in 2018-19.

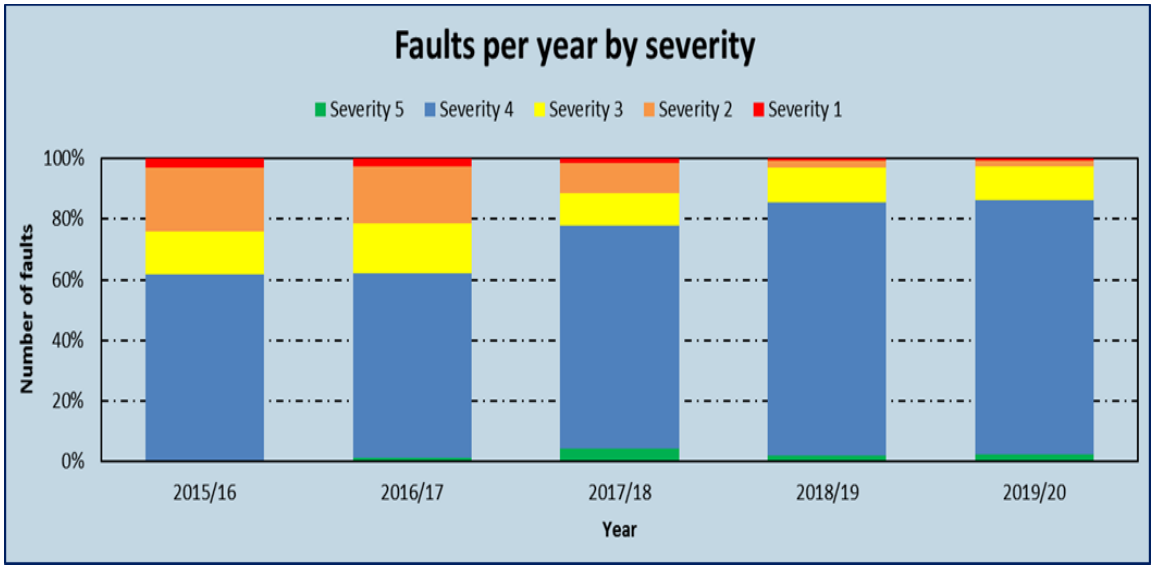
Asset faults

2.12 HS1 Ltd categorises faults in five groups of severity:

- **Severity 1** asset fault causes operational delay;
- **Severity 2** asset fault with potential to cause operational delay;
- **Severity 3/4** asset fault identified and rectified prior to potential to cause operational delay; and
- **Severity 5** asset fault identified through remote condition monitoring and rectified prior to potential to cause operational.

2.13 In 2019-20 the severity of faults was comparable with 2018-19 (Figure 8). Overall there has been a positive improvement, when measured against the start of CP2 position. Going forward, greater use of remote monitoring will enable faults to be rectified prior to potential to cause operational disruption.

Figure 8 – Faults per year by severity during CP2[9]



(Source: HS1 Ltd)

Route Asset condition

2.14 The HS1 route asset portfolio is in a generally good condition overall, with asset degradation in line with expectations. The current condition profile for the core asset groups is shown in Figure 9, assets being scored against a 1-5 criteria. 1 being as new and 5 being functional failure. Figure 9 also compares the current profile against the condition profile established for the start of CP2.

2.15 Over the control period the percentage of each asset type asset condition has remained as expected broadly stable, in line with the relatively low levels of renewals required reflecting the age of HS1 infrastructure. The most noticeable change in 2019-20 has been in the condition rating of track with a gradual ageing of the asset resulting in a noticeable movement from band 2 into band 3 and from band 3 into band 4.

2.16 HS1 Ltd have reported that overall nearly 75% of the assets in the infrastructure are in functional condition (condition 3) and over 20% are in high reliability condition (condition 2). Furthermore, 1.5% of the assets are classed as “as new” (condition 1) and only 2.3% are in near service limit condition (condition 4).

[9] There were 16 service effecting faults in 2019-20 (see Figure 7)

2.17 The asset area with the highest percentage of near service life remains telecoms, which by their nature have one of the shorter useful asset life, when compared to more traditional rail infrastructure type assets, such as track and civils.

2.18 None of the assets are in the lowest band, 5. However, as we move in to CP3 and beyond the rate of renewals required will increased as more assets reach the end of their service life. This was recognised in our determination for CP3[10] resulting in a significant increase in renewals expenditure for CP3 over CP2.

Figure 9 –Assessment of asset condition relative to that at the start of the CP2

	Condition Band	Comparison to CP2 5YAMS	CIVILS	M&E	OCS	SIGNALLING	TELECOMS	TRACK
Percentage of assets in each condition band	1 As New	CP2 5YAMS	0.00%	0.00%	0.00%	0.00%	0.00%	12.80%
		2016-17	0.16%	0.09%	0.00%	0.00%	1.64%	14.02%
		2017-18	0.22%	0.09%	0.00%	0.00%	1.62%	14.16%
		2018-19	0.22%	0.09%	0.00%	0.00%	1.48%	12.68%
		2019-20	2.42%	1.00%	0.49%	0.93%	2.01%	8.53%
	2 High Reliability	CP2 5YAMS	40.68%	0.00%	0.00%	96.85%	7.87%	78.49%
		2016-17	40.56%	0.00%	0.00%	97.28%	8.46%	76.14%
		2017-18	40.58%	0.03%	0.00%	97.21%	10.79%	75.97%
		2018-19	40.59%	0.14%	0.00%	35.68%	9.58%	78.61%
		2019-20	38.31%	0.75%	5.47%	40.82%	12.35%	49.31%
	3 Functions	CP2 5YAMS	59.30%	100.00%	100.00%	1.20%	62.62%	8.71%
		2016-17	59.25%	99.91%	100.00%	0.77%	58.74%	9.74%
		2017-18	59.17%	99.91%	100.00%	0.80%	57.72%	9.77%
		2018-19	59.16%	99.77%	100.00%	62.32%	61.78%	8.63%
		2019-20	59.24%	98.22%	93.98%	56.65%	57.70%	40.52%
	4 Near Service Limit	CP2 5YAMS	0.02%	0.00%	0.00%	1.95%	29.51%	0.00%
		2016-17	0.03%	0.00%	0.00%	1.94%	31.16%	0.10%
		2017-18	0.03%	0.00%	0.00%	2.00%	29.87%	0.10%
		2018-19	0.03%	0.00%	0.00%	2.01%	27.16%	0.09%
		2019-20	0.02%	0.03%	0.06%	1.60%	27.94%	1.64%
	5 Function Failure	CP2 5YAMS	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		2016-17	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		2017-18	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		2018-19	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
		2019-20	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

[10] PR19 final determination

Source: HS1 Ltd

Route asset capability

2.19 The route asset capability, as summarised below, has remained consistent over CP2:

- maximum line speed at 300 km/h;
- route availability at 22.5 axle loading, with a maximum gauge of 4.5m; and
- theoretical maximum number of achievable train paths that the signalling system can deliver of 20 trains per hour, based on three-minute signalling headways for all of CP2.

2.20 The current demand forecasts (pre-COVID 19) for HS1 indicate that existing capacity will be enough until 2046. In practice, the limiting factors for the number of train paths are running of mixed traffic, turnaround times required at St Pancras and the pattern of services being run.

Asset data

2.21 Accurate asset information is fundamental to providing best-in-class infrastructure stewardship. During CP2 HS1 Ltd did not have a mechanism to measure the accuracy of the asset data that underpins planning decisions. Whilst the assets were relatively new this was not necessarily a priority, but as assets age it becomes more critical. In our CP3 determination we highlighted the need for HS1 Ltd to set out the minimum data requirements and then report on these annually.

2.22 HS1 Ltd now recognises the importance of data and the whole data management cycle on improving asset management decision making. This includes data capture and collection all the way through to data analysis and processing to generate knowledge and insights from that information. Therefore, they have invested in improving its asset condition collection, prioritising higher criticality assets. Currently they have digital forms to capture the condition of assets such as point operating equipment or cross passage doors and the aim is to roll out similar forms for all high criticality assets over CP3.

Asset planning

Asset management capability improvement

2.23 Continuous improvement of any asset management capability is essential for demonstrating compliance with ISO55001 requirements. To support this development HS1 Ltd is developing an Asset Management Improvement Plan to address continuous development requirements. This plan is to be aligned to the Institute of Asset Management's (IAM) 6 box-model to provide an industry recognised framework.

2.24 We continue to encourage HS1 to undertake a further ISO55000 assessment in CP3 which will provide insight into the asset management capability and maturity and identify possible areas for improvement. We are continuing to discuss with HS1 Ltd the best approach to benchmarking and the application of best practice in high speed rail.

Sustainability and Environment

2.25 In recognition of the increased importance of sustainability and the environment, HS1 Ltd in 2019-20 started to develop a ten-year sustainability strategy that includes supply chain, train operators and other stakeholders. The strategy will be launched in 2020 and focuses on the following areas:

- Climate impacts (GHG emissions)
- Energy use
- Resource use & waste impacts
- Social impacts
- Biodiversity
- Transparency

2.26 HS1 Ltd employed an Energy Manager to build upon the HS1 Energy Strategy produced in January 2019 who will support implementation of the HS1 Sustainability Strategy. Up to now, the Energy Manager has been focused on taking forward potential energy reduction and sustainability opportunities through HS1 Ltd

investment governance process. During 2020 HS1 Ltd is planning to engage with HS1 Ltd, Eurostar and UKPN Services, to support Eurostar's sustainability strategy.

2.27 HS1 Ltd is looking to introduce regenerative braking on HS1. This will deliver both a reduction in energy usage and carbon savings. An infrastructure plan is being developed with the initial focus on the class 395 rolling stock which, based on initial studies, should not require physical infrastructure changes. This will be developed in line with the London Southeastern Railway (LSER) franchise agreement that has provided an allowance for regenerative braking. They expect the plan to be agreed by September 2020.

Biodiversity and Woodland management

2.28 The HS1 landscaping is managed as a physical asset and during the design and construction of the route, the landscaping was 'designed' to provide environmental mitigation, with plots and species of plants selected to provide varying environmental benefits, including habitat creation. The asset has now reached a level of maturity that woodland management procedures are required to firstly manage the safety of the operational railway, but also to promote biodiversity and encourage the development of the plot to meet the required environmental objectives, which includes the requirement to protect and promote nature and ecology conservation. The objectives were originally set out in the planning consent under the CTRL Act 1996.

2.29 During 2019-20, a winter woodland management plan was developed and implemented. The works involved undertaking woodland practices such as coppicing and thinning to a selected number of planted plots. In addition a joint site survey was undertaken with the Kent Wildlife Trust, to develop a management plan for each specific site, before the physical works were undertaken. This work resulted in the continued safe operation of the railway, with any trees which could pose a risk to the railway reduced in height, whilst promoting a better habitat to encourage biodiversity which has a positive impact on the environment.

2.30 In addition to this, HS1 Ltd has recently provided funding to engage Kent Wildlife Trust to draft a Biodiversity Management Plan. The Plan will include a vision statement, HS1 Ltd sustainability strategy principles, biodiversity objectives, biodiversity KPIs (as suggested in the Varley Report), condition assessment schedule and management recommendations. This will enable the development of an overarching biodiversity management plan for HS1 and for specific sites which will be measurable.

Progress with CP2 key outputs & initiatives

2.31 The status of the key changes and initiatives made in the Control Period 2 Five Year Asset Management Statement is summarised in Figure 10.

Figure 10 – Progress against key initiatives identified in HS1 Ltd's CP2 submission

Asset Group	Completed / on schedule	Behind schedule / at risk	Cancelled
Track	3	1	1
Signal Control & Communications	3	0	0
Electrical & Plant (E&P)	4	1	0
Civils	2	1	0

Source: HS1 Ltd

2.32 The four items that were not completed as planned in CP2 were:

- **E&P – Pantograph-mounted CCTV to help with OCS inspection.** HS1 Ltd is proposing the instrumentation of LSER trains including with cameras. This would achieve the OCS inspection requirements and supersede the pantograph-mounted CCTV initiative. Currently HS1 Ltd are discussing this with Eversholt Rail and LSER to install the system on one of their in-service trains and carry out a trial.

- **Track – Introduction of IRIS320 high speed measurement train at full line speed.** Following a feasibility study the project has been cancelled. To introduce the required parameter changes would be excessively costly; and logistically complicated as a train needs to come from France and through Eurotunnel, which drastically increases costs when compared to hire of a track recording vehicle from Network Rail Infrastructure Limited.

- **Track - Plain line pattern-recognition software to reduce resources and improve information.** Whilst this technology is already in use on the traditional UK network it is not directly transferable onto HS1. Currently under development is a software algorithm to recognise the components used at HS1 and the different failure modes due its higher speed. Trials are ongoing.

- **Civils - Verify move to decreased inspection frequencies for earthworks.** HS1 Ltd had an intention to move to a reduced inspection frequency for Earthworks through the adoption of a revised standard for inspection. However, through safety validation, it was demonstrated that the condition assessment and algorithm, that drives the inspection frequency, is not sufficiently accurate for the HS1 infrastructure. Therefore, HS1 Ltd is currently developing a new approach to earthworks management, based on hazard identification. This is due for completion by March 2021.

2.33 Research & Development projects to be carried out during CP2 were budgeted in the CP2 5YAMS at £1.24m. Spend over CP2 has been £1.3m, exceeding the budget by approximately £60k (less than 5% of the original estimate).

2.34 Good asset management demands innovation, however the R&D undertaken in CP2 has so far only demonstrated limited benefits. In the CP3 determination we explained why we considered that best practice asset management requires innovation and that any R&D programme requires an improvement in governance.

2.35 HS1 Ltd has undertaken that improvements will be made through alignment to the HS1 Asset Management Objectives and by use of a Research, Development and Innovation Panel being developed for use in CP3. The Panel, chaired by HS1 Ltd, will provide governance on the output and finance of research, development and innovation projects. HS1 Ltd has formally engaged with Transport Systems Catapult (TSC)[11] who will be supporting the new CP3 innovation project process. There is some work to start imminently on 'Horizon Scanning' which aims to build a more detailed plan for the future vision for the railway.

[11] Catapult is part of an elite network of not-for-profit technology and innovation centres established and overseen by the UK's innovation agency, Innovate UK

Route Renewals programme in CP2

Project costs

2.36 The total cost of CP2 and advanced CP3 renewals delivered before the end of March 2020 was £20.05 million (2020 prices). Spend on planned CP2 work at the end of the control period was £18.2 million (2020 prices). The renewals programme for CP2 in the 2014 5YAMS was £22.954m.

2.37 The overall cost of the CP2 renewals is forecasted at £26.9m[12] against the RPI adjusted CP2 budget of £26.1m. Representing an £0.8m overspend, to which must be added residual PMO costs £672k totalling a £1.47m or 6% of the RPI corrected PR14 determination figure. The final position for CP2 saw £3.28 million of CP3 scope and budget being delivered and spent in CP2, with £8.7 million of CP2 scope and budget still to be delivered and spent in CP3.

Summary of 2019-20 renewals

2.38 Eighteen renewals projects were in progress in the final year of CP2. Of these, nine projects have been completed with the remainder due for completion in CP3.

2.39 Fourteen projects originally planned for CP3 were advanced by HS1 Ltd and delivery was started in 2019-20. HS1 Ltd advanced these projects due to prioritisation or the fact that there was capability to bring them forward,

2.40 HS1 Ltd also undertook three railway enhancement projects as additional service projects (these are non-Escrow funded and not paid for by the train operators), funded by third parties.

Renewals preparation for CP3

2.41 HS1 Ltd is planning an increased number of renewals across the route in CP3. There are plans to commence delivery for an additional 23 renewals projects in the first year of CP3.

[12] £22.954m + £3.154m RPI = £26.109m

2.42 As a result of continuous review and condition assessment process, there may be some changes to the schemes planned over the course of CP3. Depending on condition and asset deterioration rates this may result in bringing forward some projects, as well as possibly deferring others. Any changes will need to follow a change control process.

2.43 The overall aim is to keep expenditure on the renewals required such that HS1 Ltd meet their asset stewardship obligations, within the agreed CP3 determination. Spend on each project must be as economic and efficient as possible, and if there are any changes to the overall amount of portfolio funding required, this will require further agreement.

2.44 Changes in railway use as a result of the impact of the COVID-19 virus on travel and the restriction required on undertaking certain activities may mean that some renewals will be undertaken later than originally planned in the new control period.

3. Finance and efficiency

Overview

HS1 Ltd's regulated costs exceeded its regulated income by £0.1m in 2019-20, the final year of CP2[13]. This represented £2.5m of financial underperformance relative to our PR14 determination. It received £75.8m of regulated income, £2.6m higher than assumed in PR14. It spent £75.9m operating, maintaining and renewing its rail infrastructure in the year, £5.1m higher than assumed in PR14. These variances are examined below.

Figure 11 - Summary of HS1 Ltd's regulated income and expenditure in 2019-20

£m, 2019-20 prices	Actual	PR14	Difference better / (worse)	2018-19
Income				
OMR charge	57.1	56.7	0.4	57.3
Pass-through income	18.6	16.5	2.1	19.0
Performance regime	0.1	0.0	0.1	0.1
Total income	**75.8**	**73.2**	**2.6**	**76.4**
Controlled track costs				
NR(HS)	42.1	42.1	0.0	42.5
HS1 Ltd	11.3	9.8	(1.4)	11.8
Network Rail Infrastructure Limited	1.6	1.7	0.1	1.5
Total controlled track costs	**55.0**	**53.6**	**(1.4)**	**55.8**
Pass-through costs				
Rates	8.6	5.3	(3.3)	8.7
Electrical infrastructure (traction)	5.5	5.4	(0.1)	5.5
Insurance	2.9	3.8	0.9	3.3
Power-non traction	1.6	1.4	(0.2)	1.6
Total pass-through costs	**18.6**	**16.0**	**(2.6)**	**19.1**
Freight costs				
NR(HS)	0.3	0.3	0.0	0.3
Network Rail Infrastructure Limited	0.2	0.2	0.0	0.2
HS1 Ltd	0.1	0.1	0.0	0.1
Total freight costs	**0.6**	**0.6**	**0.0**	**0.6**
Opex-funded upgrades	0.5	0.6	0.1	0.5
Total OMRC Costs	**74.7**	**70.8**	**(3.9)**	**76.0**
Performance related payments	1.2	0.0	(1.2)	0.6
Total costs	**75.9**	**70.8**	**(5.1)**	**76.7**
Net Income / (Expenditure)	**(0.1)**	**2.4**	**(2.5)**	**(0.3)**

[13] Our analysis excludes unregulated income and expenditure. Unregulated income includes the 'Investment Recovery Charge' (IRC) and income from commercial property. Unregulated expenditure includes financing costs. HS1 Ltd's statutory financial statements provide more information about these items. Some figures in this section may not sum due to rounding.

Source: HS1 Ltd AMAS 2019-20

Income

3.1 HS1 Ltd received £75.8m of regulated income in 2019-20, £2.6m higher than assumed in PR14. The majority of HS1 Ltd's regulated income (£57.1m) was from charges to train operators for operating, maintaining and renewing its network. HS1 Ltd also received pass-through income (£18.6m) from train operators to recover costs that are largely uncontrollable by HS1 Ltd. These include non-traction electricity, electrical infrastructure costs, insurance and business rates.

3.2 Income was higher than assumed in PR14 largely due to increased use of the network by LSER's domestic passenger services, partly offset by lower than assumed use by Eurostar. Pass-through income also increased largely due to an increase in the charge to recover the cost of higher business rates since the rates revaluation in April 2017.

Costs

Operating, maintenance and renewals costs

3.3 HS1 Ltd incurred £74.7m of regulated costs in 2019-20, £3.9m higher than assumed in PR14. The majority of HS1 Ltd's regulated costs (£42.1m) were incurred in operating, maintaining and renewing the network. This work is undertaken through a fixed-price contract with NR(HS)[14]: as NR(HS)'s costs were £0.8m lower than forecasted in PR14, that amount was paid by HS1 Ltd to NR(HS) as outperformance. Figure 12 provides a breakdown of NR(HS)'s costs.

3.4 HS1 Ltd's internal costs are shown in Figure 13. HS1 Ltd's own costs were £11.3m, £1.4m higher than assumed in PR14. This included £0.5m of increased consultancy costs related to preparations for PR19 and £0.6m of higher regulatory costs and safety levy. Staff costs were also £0.3m higher and HS1 Ltd has attributed this to an increase in staffing to manage increased renewals and maintenance.

3.5 In accordance with the Operator Agreement between the two companies, HS1 Ltd is required to pay train operators if NR(HS) outperforms our PR14 financial assumptions. NR(HS) has stated that it achieved £0.8m of gross outperformance in Year 5.

[14] NR(HS) is a wholly owned subsidiary of Network Rail Infrastructure Ltd.

3.6 In accordance with the Operator Agreement, NR(HS) applies a mark-up allowance to determine the share of outperformance with HS1 Ltd. Under this agreement, NR(HS) has calculated £2k of net outperformance which is shared equally with HS1 Ltd. A proportion of the amount received by HS1 Ltd from NR(HS) is shared with train operators. We understand from HS1 Ltd that the final outperformance sum due to operators will not be determined until resolution, not expected until late 2020, of a contractual claim between HS1 Ltd and NR(HS) on CP2 costs.

Figure 12 – NR(HS) costs 2019-20

£m, 2019-20 prices	Actual	PR14	Difference better / (worse)	2018-19
Staff costs	20.5	17.4	(3.2)	19.8
Agency costs	0.4	0.1	(0.3)	0.0
Consultancy costs	0.4	0.3	(0.1)	1.4
Corporate functions & Network Rail Infrastructure Ltd Services	3.0	4.5	1.5	5.6
Plant & Materials	5.0	5.8	0.7	5.1
Sub-Contractors	5.2	6.7	1.5	5.9
Research & Development	0.0	0.2	0.2	0.1
Overheads	2.8	2.6	(0.2)	1.5
Operating costs	**37.4**	**37.5**	**0.1**	**39.4**
Management fee	3.0	3.0	0.0	3.4
Contract risk	1.3	1.9	0.6	1.9
Outperformance	0.8	0.0	(0.8)	-0.3
Total NR(HS) costs	**42.4**	**42.4**	**0.0**	**44.4**

Source: NR(HS) outturn statement

Figure 13 - HS1 Ltd's internal costs in 2019-20

£m, 2019-20 prices	Actual	PR14	Difference better / (worse)	2018-19
Staff costs	4.4	4.1	(0.3)	4.6
Technical support / Consultants	2.0	1.5	(0.5)	2.2
Office running costs	1.2	1.1	(0.1)	1.1
Regulatory costs and Safety levy	1.1	0.5	(0.6)	0.3
Other costs	2.6	2.6	0.0	3.5
Total HS1 Ltd Costs	**11.3**	**9.8**	**(1.5)**	**11.7**

Source: HS1 Ltd AMAS 2019-20

Pass-through costs

3.7 Some of HS1 Ltd's costs are passed straight through to train operators with equal and offsetting pass-through income. These costs are largely uncontrollable by HS1 Ltd and include traction electricity costs, business rates and insurance. Pass-through costs were £18.6m in 2019-20, which was £2.6m higher than assumed in PR14, largely due to increased business rates, partially offset by lower insurance premiums. HS1 Ltd spent £0.9m less on insurance following a competitive tender during the control period.

Freight costs

3.8 HS1 Ltd incurs costs relating to freight traffic, including maintaining freight-specific infrastructure. Freight costs were £0.6m, which was in line with PR14. This is because the costs of freight assets operated and maintained by HS1 Ltd are largely fixed even though the number of freight trains using the network was lower than assumed in PR14.

Upgrades to the network

3.9 In addition to the day-to-day operation of its rail network, HS1 Ltd makes upgrades to ensure that its network continues to meet the needs of customers. HS1 Ltd spent £0.5m on opex-funded upgrades in 2019-20, which was £0.1m lower than assumed in PR14.

Efficiency

3.10 HS1 Ltd does not currently report on how its efficiency changes over time. However, it is important that we understand how it is performing compared to the efficiency challenge that we set in our 2014 periodic review and to inform our next review of its charges. This is changing for CP3, as we have agreed with HS1 Ltd that it will improve its reporting of efficiency.

3.11 In this report, we assess HS1 Ltd's efficiency by comparing its own costs and those of NR(HS) to those incurred in 2014-15 (adjusted for inflation), the final year of CP1. We exclude pass-through costs as HS1 Ltd has less control over these.

Figure 14 - Cost comparison 2019-20 vs. 2014-15

£m, 2019-20 prices	2019-20	2014-15	Variance (£m)	Variance (%)
HS1 Ltd own costs	11.3	10.1	(1.2)	(11.9%)
NR(HS) costs	42.4	53.5	11.4	21.3%
Total	**53.4**	**63.6**	**10.2**	**16.0%**

Source: HS1 AMAS 2019-20

3.12 Adjusted for inflation, NR(HS)'s costs have decreased by 21.3% and HS1 Ltd's costs have increased by 11.9% from 2014-15. Overall expenditure has decreased by 16%. See the expenditure sections above for details.

Income and expenditure in CP2 compared to PR14

3.13 HS1 Ltd's regulated costs exceeded its regulated income by £0.1m over the course of CP2[15]. This represented £0.5m of financial outperformance relative to our PR14 determination. It received £379.6m of regulated income, £15.2m higher than assumed in PR14. It spent £379.7m operating, maintaining and renewing its rail infrastructure in the year, £14.7m higher than assumed in PR14.

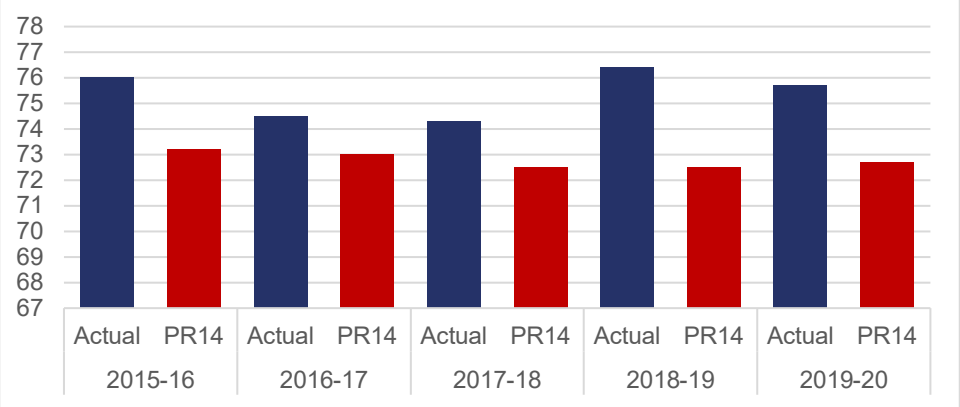
[15] Our analysis excludes unregulated income and expenditure. Unregulated income includes the 'Investment Recovery Charge' (IRC) and income from commercial property. Unregulated expenditure includes financing costs. HS1 Ltd's statutory financial statements provide more information about these items. Some figures in this section may not sum due to rounding.

Figure 15 - Summary of HS1 Ltd's regulated total income and expenditure in CP2

£m, 2019-20 prices	Actual	PR14	Variance
Pass-through income	87.2	81.6	5.5
Operations & Maintenance	289.7	282.8	6.9
Performance regime	2.8	0.0	2.8
Total Income	**379.6**	**364.3**	**12.4**
Pass-through costs	(87.2)	(81.1)	(6.0)
Controlled track and freight	(285.4)	(280.8)	(4.6)
Upgrades	(2.8)	(3.0)	0.2
Total OMRC Costs	**(375.6)**	**(364.9)**	**(10.6)**
Performance regime	(4.1)	0.0	(4.1)
Total Costs	**(379.7)**	**(364.9)**	**(14.7)**
Net Income / (Expenditure)	**(0.1)**	**(0.5)**	**0.5**

Source: Separate submission from HS1 Ltd

Figure 16 - OMR income compared to PR14, £m 2019-20 prices

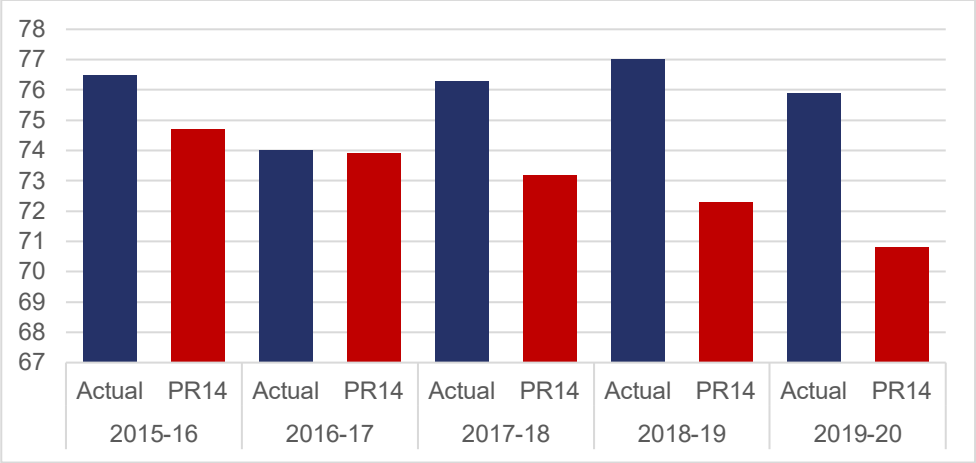


Source: HS1 Ltd AMASs 2015-16 to 2019-20

3.14 Over the course of CP2, HS1 Ltd has consistently outperformed OMRC income against the PR14 determination mostly due to additional South Eastern traffic than assumed at PR14. Please see our previous annual reports for further details[16].

[16] https://orr.gov.uk/rail/economic-regulation/high-speed-1/annual-reports-on-hs1-ltd

Figure 17 - OMR expenditure compared to PR14, £m 2019-20 prices

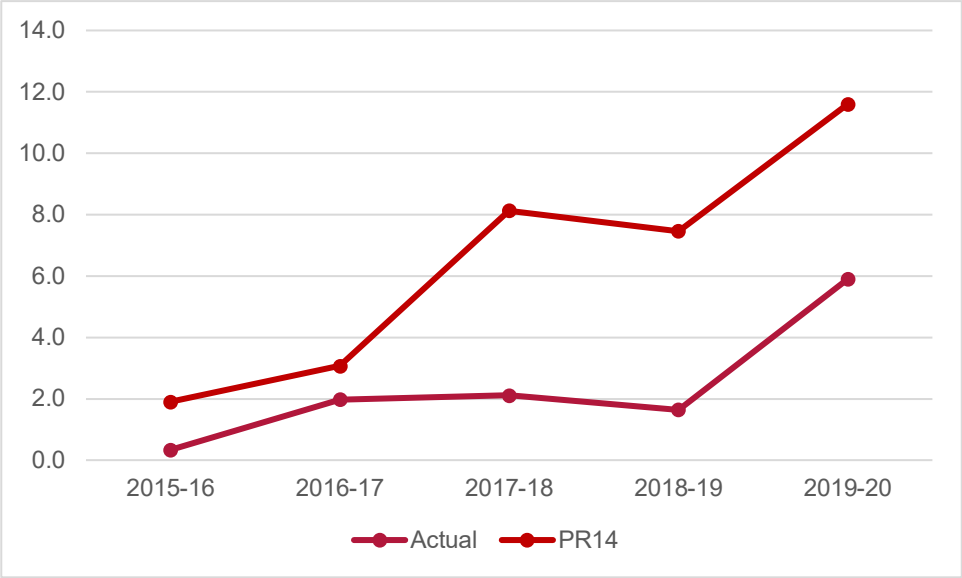


Source: HS1 Ltd AMASs 2015-16 to 2019-20

3.15 HS1 Ltd has consistently overspent against the PR14 determination on operations, maintenance and renewals over the course of CP2. Please see our previous annual reports for further details[17].

Renewals in CP2

Figure 18 - Renewals expenditure in CP2, £m 2019-20



Source: HS1 Ltd AMASs 2015-16 to 2019-20

3.16 HS1 Ltd withdrew £12m for renewals expenditure from the escrow over CP2. This significant underspend of £8.2m compared to the PR14 determination, is largely because of the de-scoping of some work, other changes to scope and the

[17] https://orr.gov.uk/rail/economic-regulation/high-speed-1/annual-reports-on-hs1-ltd

deferral/acceleration of work to/from the next control period. There have also been some changes to the phasing of work.

Route escrow account

3.17 Some of HS1'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 (RAB) in Network Rail and other infrastructure providers which helps to spread these costs over the long term.

3.18 The balance on the route escrow account at 31 March 2020 was £91.3m, of which the majority is on deposit with short maturity dates of three to four months. The escrow balance increased by £12m in the year due to:

- £16.6m of payments into the escrow account. This was £4.5m higher than our PR14 assumption;
- £5.9m withdrawn to pay for renewals undertaken in the year. PR14 assumed £5.7m due to a different phasing of work; and
- £1.3m of interest earned.

Overview of HS1's statutory financial statements

3.19 HS1's financial statements for 2019-20 show that earnings before interest, tax, depreciation and amortisation (EBITDA) was £94.8m in 2019-20. HS1 made a profit after tax of £95.0m in 2019-20. As at 31 March 2020, HS1's net assets were £530.3m.

3.20 In its financial statements, the auditors have stated that HS1 has adequate resources to continue in operational existence for the foreseeable future.

3.21 HS1 Ltd has reported that it is conscious of the uncertainties created by COVID-19 and is working with us, Government, and train operators to manage the impact.

3.22 We look at HS1 Ltd's financial position in the context of the risks to which it is exposed, considering its position in the wider group of companies of which it is part.

3.23 Debt for HS1 Ltd is raised at the group level by High Speed Rail Finance (1) Plc and High Speed Rail Finance Plc (subsidiaries of HS1's immediate parent company, Helix Acquisition Ltd). They provide finance to HS1 Ltd, which then pays finance charges to them. Recent credit rating agency reports on High Speed Rail Finance (1) Plc have confirmed its A-rating.

4. Health and safety

Overview

Many of HS1 Ltd functions are contracted out to NR(HS) through an Operator Agreement. This means that both parties have health and safety obligations, but NR(HS) is the Infrastructure Manager for the purposes of the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (as amended). As such, NR(HS) has duties to establish and maintain a safety management system as set out in the Regulations. NR(HS) was issued with a safety authorisation in accordance with the Regulations in October 2009, which was renewed in May 2017 for a period of five years.

4.1 There was good progress in safety performance this year, with the Fatalities and Weighted Injuries (FWI) index down to 0.027 per 1m hours worked, down from 0.034 in March 2019.

4.2 During CP2 we have seen evidence that HS1 Ltd has improved its understanding of the importance of its role as an "intelligent client", and in its organisation to discharge this role. There have been improvements in Network Rail (High Speed) Ltd's organisational structure to maintain the asset as it ages, while HS1 Ltd's governance structure has been developed to provide more collaborative working with, and constructive challenge to, Network Rail (High Speed) Ltd decisions.

Management of health and safety

4.3 During 2019-20 we carried out the following activities:

- inspections with HS1 Ltd, NR(HS) and relevant stakeholders to seek assurance on their preparations for the UK leaving the European Union and to encourage a collaborative, co-ordinated and co-operative approach;
- meetings with NR(HS)'s Head of Stations and inspections at St Pancras International station;
- attendance of NR(HS)'s Trespass Reduction Group and followed up on HS1 Ltd's and NR(HS)'s plans for further reducing the risk of trespass at St Pancras International station;
- follow-up on two incidents involving station lighting at St Pancras International station. This work included consideration of NR(HS)'s

systemic approach to managing the longer-term maintenance of lighting and other assets across its managed stations and management of its contractors;

- routine liaison meetings with NR(HS)'s Head of Safety and Managing Director throughout the year;
- quarterly HS1 Ltd-ORR performance monitoring meetings and meetings with HS1 Ltd's Head of Assurance to discuss safety performance and HS1 Ltd's assurance; and
- safety input to PR19.

4.4 HS1 Ltd has commenced implementation of our risk management maturity model (RM3) across each of its key tier 1 suppliers, as a tool to improve the capability of health and safety management on the HS1 network. We understand that it plans to consolidate the results of its suppliers' assessments into HS1 Ltd's RM3 self-assessment.

4.5 NR(HS) has now performed its first RM3 self-analysis. The analysis set out agreed improvement activities, which are being collated into an improvement plan with timescales, allocated to a responsible person to progress and be monitored by NR(HS)'s Change Team. It intends to review progress and improvements after 12 months and use it to target future audit programmes. Further information on RM3 can be found on our website.

4.6 Further information on health and safety performance on all of Britain's railways can be found in ORR's health and safety annual report, and on the mainline railway (which includes the HS1 network) can be found in the Rail Safety and Standards Board (RSSB) Annual Safety Performance Report.

4.7 Further information on our approach to regulating health and safety risks created and managed by businesses in the railway industry can be found in the strategic risk priorities section of the ORR website.

Proposed health and safety regulation activities for 2020-21

4.8 The following health and safety regulation activities are proposed for 2020-21:

- attendance of quarterly HS1 Ltd-ORR liaison meetings to discuss safety performance and meetings with HS1 Ltd's Head of Assurance;

- regular liaison meetings with NR(HS) throughout the year; and
- investigation of incidents in accordance with our processes.

4.9 We note that HS1 Ltd has recently developed and is in the process of implementing a new and revised Health, Safety and Assurance Policy, Strategy and assurance framework, together with supporting procedures. This has been endorsed by HS1 Ltd's Board. We welcome HS1 Ltd clearly setting out its approach to its health, safety and assurance policy and activities, for itself and for its supply chain.

4.10 The revised assurance framework reflects how HS1 Ltd will assure itself that its business partners are meeting requirements and sets out how HS1 Ltd will monitor performance through setting goals with its suppliers, through KPIs, observations and audits. A key part of the process is its embracing RM3 to press for continuous improvement through its supply chain, using the findings to create safety improvement plans and drive for continuous improvement. We intend to monitor HS1 Ltd's related time-bound action plan in the coming years.

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