



HS1 CP3 Stations LTC Review

Renewal Efficiencies Advice Note | For Discussion

04 September 2019

1.1 Summary

The Department for Transport has requested that GHD undertake further work on the benchmarking for the efficiency overlay which is proposed to be applied to High Speed One Limited's (HS1) Control Period 3 (CP3) Long Term Charge (LTC).

For Control Period 5 (CP5) and Control Period 6 (CP6) Network Rail (NR) has been set regulatory efficiency targets of 19.4% and 10% for each five year period respectively. In CP5, Network Rail has delivered a cumulative **inefficiency** of -7.4% from 2014-15 to 2018-19. The CP6 renewals efficiency target has been set at 13%.

In Control Period 2, HS1 included within their asset stewardship approach a 0.5% per annum efficiency target for calculating the charge.

Highways England, also regulated by ORR, were set a target for Road Investment Strategy (RIS) One of achieving a 10% efficiency over 5 years, with £600m - £848m of the £1.2bn target, reported as having been achieved to date. Unit rates are understood to be the basis of measurement of efficiency, though subject to further development for RIS2.

The information provided on Heathrow Airport is considered to be a dataset which is difficult to compare to the HS1 capital programme on the basis of the majority of information relating to Opex rather than Capex.

The removal of the CP2 efficiency overlay for CP3, as stated by HS1 in their LTC submission, equates to 15.1%, which falls within the upper and lower limits that other regulators have been and are seeking in efficiency improvements from related organisations.

Detail for how these efficiency targets have been set with regulated entities remains difficult to obtain from publicly published reports however, the Highways England approach to the comparison of unit rate information from the start of the control period to that achieved, could be an avenue of further exploration with the Department if time allows and data is available.

We propose a meeting with the Department to discuss the findings of this report, limitations of data and any further support required to enable a Final Decision to be made including a renewals efficiency target.

1.2 Purpose

The purpose of the note is to bring together in one location the various comments and benchmark information that has been obtained regarding the level of efficiencies that DfT might require in their Final Decision notice.

1.3 Background

Regulators tend to expect their regulated entities to adopt continuous improvement programmes such that they are able to deliver to their customers at steadily declining costs – the concept of efficiencies (i.e. “the same for less”).

In CP2 (April 2015 to March 2020) HS1 adopted an efficiency overlay target said by them to be 0.6% per annum compound over the 5 year period. In HS1's 31 May 2019 Submission to DfT the following table was included on page 7 and is intended to represent removal of the efficiency overlay from their CP2 LTC

calculation. The level of efficiency applied to the pre-efficient LTC is therefore 15.1% ($= (1.165 \times 100)/(6.545 + 1.165)$).

Table 1

Station	CP2 LTC	Removal of CP2 efficiency uplift	Other changes between CP2 and CP3	CP3 LTC
St Pancras	4.282	+0.771	+2.559	7.612
Stratford	0.770	+0.101	+0.687	1.558
Ebbsfleet	0.731	+0.191	+0.737	1.659
Ashford	0.763	+0.102	+0.001	0.866
Total	6.545	+1.165	+3.985	11.695

Benchmarks

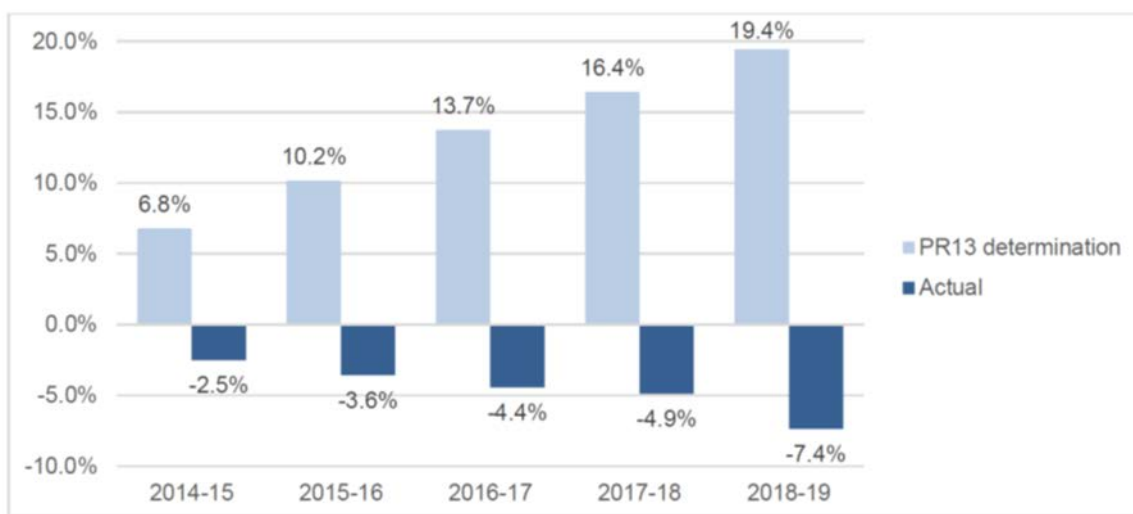
Benchmark data for efficiencies have been obtained from the rail and other sectors as described below.

1.4 Rail Sector

1.4.1 Network Rail CP5 (April 2014 to March 2019)

In CP5 ORR challenged NR to deliver a cumulative efficiency of 19.4%. NR's performance was such that they delivered a cumulative inefficiency of 7.4% as demonstrated in the following figure extracted from ORR's publication entitled "Annual efficiency and finance assessment of Network Rail 2018-19" dated 26 July 2019.

Figure 1 Network Rail's declining efficiency compared to the start of CP5



1.4.2 Network Rail CP6 (April 2019 to March 2024)

In their Final Determination for NR's CP6 funding settlement ORR challenged NR to deliver an overall efficiency of 10% as shown in the figure below extracted from the ORR publication entitled "2018 periodic review final determination, summary of conclusions for England and Wales" dated October 2018.

Table 2: Forecast Network Rail efficiency across CP5 and CP6 (+ = efficiency)

	£m, 2017-18 prices			%		
	CP5 forecast	CP6 February SBP	CP6 final determination	CP5 forecast	CP6 February SBP	CP6 final determination
Opex	-118	+131	+163	-5%	+5%	+6%
Renewals	-388	+276	+382	-21%	+10%	+13%
Total	-506	+407	+545	-12%	+8%	+10%

The measurement of efficiency compares spending in the last year of CP6 with the last year of CP5 (i.e. exit to exit). The CP5 numbers are calculated in a similar manner.

In respect of Renewals (rather than Opex) NR have been challenged to deliver a 13% efficiency.

1.4.3 HS1 CP2: ORR Determination for 'line of route' assets

We have compared the determination and outcomes from the two previous control periods for 'line of route' assets to establish the maturity of HS1 as an organisation and understand its performance with other assets.

O&M (Opex) Activity:

The target for CP1 was set at 2% p.a. (cumulative) giving a total of 10% over CP1. The outcome from CP1 was 13% overall as stated Table 12 in HS1's 5YAMS for CP2:

Table 3 CP1 variance from efficient budget (£ million, February 2013 prices)

	Efficient budget	Actual/forecast	Variance	% variance
NR(HS) costs	293.1	270.0	-23.1	-8%
HS1 costs	64.6	59.6	-5.1	-8%
Pass through costs	121.1	84.9	-36.2	-30%
Freight-specific costs	7.2	7.9	0.7	+9%
Total O&M	486.0	422.4	-63.7	-13%

The target set for CP2 was agreed as 16%, based on the outcome of the re-negotiated contract terms with NR(HS) for maintenance of the network.

Capital works:

There were no capital renewals undertaken in CP1. The volume planned for CP2 was £23m which is purely the NR(HS) element (including management charges). HS1's 5YAMS is short on detail as to what this includes and it is difficult to measure what has been delivered against the plan.

There is a single reference to efficiencies in the discussion on the Asset Management funding approach in HS1's 5YAMS (Section 11.10), which considered the choice between what they described as a 'baseline' approach and the 'asset stewardship' approach – the latter effectively deferring work where possible based on asset condition. The document states that 'a generic ½% p.a. efficiency unit price improvement from CP3 in line with the NRIL studies on frontier efficiency development' is included in the asset stewardship approach. We have been able to trace how this manifests itself in the forecast costs (we do not have access the financial models).

Relevance to HS1 Stations Capex determination:

- Volume of Capital works over CP2 is similar to Stations volumes.
- Same organisation (NR(HS)) delivering work at 3 stations of 4.
- Efficiency included in unit prices¹ of ½% p.a.

1.5 Roads (Highways England)

Highways England (HE) is the government-owned company set up in 2015 to operate maintain and improve the motorway and major A-road network in England. It was created from the former Highways Agency. The asset base and type of work shares a lot of similarities to the mainline rail network, comprising c.4300 miles of ageing linear assets with limited access to carry out renewals or improvements.

HE's work bank is based on the Road Investment Strategy (RIS) which is similar to HLOS prepared for NR. The RIS includes 'outcome areas' each of which has one or more Key Performance Indicators that are agreed outputs that HE is measured against. HE prepared a plan based on the required outputs and includes maintenance/ operations/ renewals/ enhancements. The total capital investment planned over RIS1 (2015-20) is currently £12.2bn.

There is an agreed target for capital efficiency of £1.2bn over RIS1, which is c.10% of the total cost of the capital programme. The headline measure for efficiency seems to be agreed as the overall cost of schemes delivered over RIS1 as measured against the budget at determination, adjusted where schemes have been varied (there is a mechanism to vary scope where schemes have been deferred or not progressed).

HE has prepared an 'Operational Metrics Manual' that describes how the KPIs agreed with ORR are measured. However the section on 'Achieving Real Efficiency' is lacking in specific detail on how to measure efficiency. This remains an area for research which is being contributed to by ORR with the aim of agreeing the measures for RIS2.

HE claims that it has achieved £848m efficiencies to date. Evidence offered to support this claim is based on unit rates for output on schemes. Smart motorways accounts for £219m (26%) of the efficiencies claimed to date and is agreed as the most mature measure. HE also claims it has delivered £157m extra scope to date at no extra cost which is included in the efficiencies claimed. Data provided for other works is less conclusive, and there is a debate over central business costs efficiencies. ORR's view is the total efficiencies achieved is closer to £600m.²

¹ Assumption is that unit prices are equivalent to unit rates and therefore excludes on-costs, indirects and corporate overhead

² Source: ORR report: [Annual assessment of Highways England's performance 2018-19](#)

Relevance to HS1 Stations Capex determination:

- HE is a young maturing organisation. HS1 is older but has less experience of delivery of capital works as less has been required to date.
- HE has a large capital works programme to be delivered with constrained access. HS1 Stations renewals are not physically constrained in the same way but access is constrained for operational purposes.
- HE has a target of 10% efficiency on capital works in RIS1, which it is on target to achieve based on measurement of unit rates for some works. This is on a much larger volume of work than HS1.

1.6 Aviation, Water and Energy Sectors

As requested by stakeholders at the DfT Stakeholder Workshop held on 24 July 2019, we have sought to obtain information regarding efficiencies in other sectors. DfT have kindly provided us with some regulatory documentation regarding Heathrow Airport the most relevant report to this topic being entitled “Review of Efficiency of Operating Expenditure of Heathrow Airport” dated 22 March 2017 prepared by Cambridge Economic Policy Associates (CEPA) for the Civil Aviation Authority. In this report CEPA had benchmarked Heathrow’s performance against regulatory settlements in, primarily, the Aviation, Water and Energy sectors. Below is an extract from this report.

Table 4: Recent regulatory precedent for opex efficiency targets (to 1 decimal place)

Regulator	Country	Sector	Price control	Costs	FS	CU
CAA	GB	Heathrow Airport	2014 – 2018	Opex	1.0%	1.0% ¹
Regulator	Country	Sector	Price control	Costs	FS	CU
CAA	GB	Gatwick Airport	2014/15 – 18/19	Opex	0.9-1.0%	0.7% ¹
CAR	Ireland	Airports	2015 – 2019	Opex	0.8% ²	
ORR	GB	Rail	2015 – 2019	Opex	0.3%	4.4%
Ofwat	Eng & Wal	Water and Sewerage	2010 – 2015 ³	Opex	0.2-0.4%	2.2-2.9%
WICS	Scotland	Water and Sewerage	2015/16 – 20/21	Opex	1.9% ²	
Ofgem	GB	Transmission	2013 – 2021	Opex	1.0%	n/a
Ofgem	GB	Electricity Distribution	2016 – 2023	Totex	0.8-1.1%	Various
Ofgem	GB	Gas distribution ⁴	2013 – 2021	Opex	1.0%	n/a
				Totex	0.8%	1.6%
Range					0.2-1.2%	Up to 4.4%

Notes ¹ HAL/LGW: CU is the residual cost reduction after netting off FS, so not the same as CU.

² CAR and WICS: Breakdown not available between FS and CU.

³ Ofwat: Not possible to obtain FS and CU figures for the latest price control (2015-2020).

⁴ Gas distribution: Totex is included as it shows the CU target (not available for opex).

Note to the above table:

FS = Frontier Shift: implies the efficient cost of delivering a service is falling due to a mixture of general productivity gains in the economy and specific productivity gains in the relevant industry which would be exhibited in a competitive industry

CU = Catch Up: implies that a specific firm is operating with lower efficiency than the most efficient producers of similar services and can therefore improve its efficiency by catching up with the efficient operators

The great majority of the data shown in the above table relates to Opex efficiencies. Whilst two entries are related to Totex the allocation between Opex and Capex is not clear. Accordingly we do not believe that this dataset to be a reliable source of benchmarking for HS1's Capex (renewals) efficiency target the dataset may however be of assistance to DfT in forming a view over HS1's Opex efficiency target.

