15. Overall Incentives

Key messages in this chapter

- Incentivising efficient behaviour is at the core of PR13. We are putting in place substantial improvements to our package of incentives which comprise charges, financial and contractual incentives. These incentives impact not just on Network Rail but the whole industry.
- We are improving the variable usage charge so that it better reflects the extent to which use of different vehicles drives cost; ensuring that Network Rail bears more of the cost of traction electricity transmission losses which it can manage and establishing a new 'freight specific charge' so that a greater proportion of the costs that freight generates are recovered from haulage of commodities that can bear such an increase – electricity supply industry coal, spent nuclear fuel, and iron ore.
- Improvements to financial incentives include a new route-based efficiency benefit sharing mechanism to encourage Network Rail and train operators to work together to reduce costs, and strengthening the volume incentive to encourage Network Rail to act more commercially in deciding how to encourage extra traffic.
- We are updating Schedules 4 and 8 payment rates and Schedule 8 benchmarks so they act as effective compensation and incentive regimes, to reduce disruption to passengers and freight customers.

Introduction

15.1 Many elements of our PR13 decisions have incentive properties and there has been discussion of incentives in previous chapters relating to outputs, expenditure and financing.

15.2 The next chapter, chapter 16, covers access charges. But part of Network Rail's revenue requirement is provided by network grant in lieu of access charges – this is discussed in chapter 17. Other single till income is netted off of gross revenue to calculate the net revenue requirement and this is discussed in chapter 18. Chapters 19 and 20 consider financial and contractual incentives.

15.3 This chapter briefly describes the purpose of incentives and why regulatory intervention is required. It then describes the main types of incentives which we use to incentivise efficient behaviours both in Network Rail and more widely in the industry.

Purpose of incentives

15.4 Most markets and industries respond to incentives that result from the normal operation of the market. But in the rail sector, as with other monopoly network industries, there is the potential for 'market failure' arising from:

(a) **market power** – Network Rail is the provider of access to the mainline rail network and any company with such a monopoly or market power has an incentive to price higher than a competitive industry would and to provide less output which may be of a lower quality than that which would be provided in a competitive market; and

(b) **network externalities** – infrastructure networks, including the rail network, are complex and individual companies' use of them is likely to impose costs or benefits on other users. These impacts on third parties are known as external costs or benefits. Even if this were not the case, it is unlikely that the complexities of arranging use of the network could be resolved entirely through bilateral arrangements between operating companies and Network Rail. There are likely also to be other external costs or benefits, such as congestion, pollution or accidents, to third parties other than the rail industry and its customers.

15.5 Regulatory intervention is often considered to be required to address these market failures. In the rail industry this intervention takes the form of the implementation of regulatory incentive mechanisms which include charges, financial and contractual incentives.

Types of incentives

Charges

15.6 The standard regulatory response to market power is to control the company's prices so that overall revenues are not set above total costs. It may also involve specifying the quantity and quality of its output. These principles underlie our approach to establishing our PR13 determination.

15.7 Regulation attempts to ensure that unit prices are set at the marginal cost[314] of providing the unit of output. These cost-reflective prices incentivise efficiency by encouraging customers to purchase output if and only if the value of it to them exceeds the cost and by encouraging Network Rail to provide the product if and only if the value to customers exceeds the cost[315]. This principle underlies our consideration of access charges in the chapters which follow.

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[314] Marginal cost is the increment to cost that results from producing an additional unit of output.

[315] This sort of efficiency, concerned with producing the right thing, is known as 'allocative efficiency' and is distinguished from 'productive efficiency' or producing at least cost.

15.8 The principle of cost-reflective pricing may result in total revenue that differs from total costs. Indeed, the sum of revenues from Network Rail's present variable access charges falls far short of its total revenue requirement because it incurs a large proportion of fixed and common costs regardless of how much traffic runs on its network. In Network Rail's case, the difference between variable charges and its total revenue requirement is met by a combination of network grants from the governments and fixed access charges.

15.9 Charges can also be used to take account of costs and benefits that are external to the sector. These are losses and gains to third parties that are not necessarily taken into account by the industry or its customers unless an incentive is introduced to enable them to do so. Examples relevant to the rail industry include the relief of congestion on the road, environmental pollution, and the encouragement of innovation, R&D.

15.10 Environmental issues are an important feature of our duties. Environmental costs may be included in the prices of inputs used in the industry. An example is that the electricity prices that determine train traction electricity charges include the cost of purchasing allowances under the EU emissions trading scheme.

Financial incentives

15.11 If its revenue is limited to be equal to what is necessary to recover its costs, a company that does not face competition no longer has an incentive to control costs and so a separate regulatory mechanism is necessary to give it one. The mechanism for Network Rail is that we incentivise it to outperform our determination, which will benefit customers and funders. The setting of outputs and revenue and the process of incentivising cost performance have been discussed at length in earlier parts of this determination but one aspect, the route-based efficiency benefit sharing mechanism, represents a new financial incentive for CP5, described in the financial incentives chapter (chapter 19).

15.12 Network Rail's unit charges do not cover all the costs of providing capacity and so we need to consider how it responds to requests for extra capacity. In a more commercial setting, Network Rail would charge prices which are set above its short run costs so that it would profit by selling more of what its customers wanted i.e. the use of network capacity. In the case of Network Rail, it also faces incentives in relation to train service punctuality outputs and so it may actually face a disincentive to make additional capacity available. So there is an existing volume incentive mechanism which is designed to encourage Network Rail to make trade-offs when deciding whether to meet unexpected demand similar to those which a company operating in a more commercial setting would make. We are improving the volume incentive for CP5, and this is described in full later in the financial incentives chapter (chapter 19).

Contractual incentives

15.13 There are well established mechanisms through which important aspects of network management are undertaken through contractual incentives. These take the form of administered charges set to reflect the external costs caused to other units of the network. The possessions and performance regimes chapter (chapter 20) discusses:

(a) the incentives in the 'Schedule 4' possessions regime through which compensation is paid to operators when they are unable to use parts of the network, due to planned restrictions of use, typically because engineering work is being carried out; and

(b) the incentives in the 'Schedule 8' performance regime through which operators are compensated for the costs of delay and cancellations imposed by others, including Network Rail.

15.14 The charges chapter discusses the 'capacity charge' which is levied on train operating companies to compensate Network Rail for the additional Schedule 8 delay payments it is expected to have to make to other operating companies as a result of the additional congestion caused by additional traffic.

16. Access charges

Key messages in this chapter

- This chapter is our determination with respect to track access charges and regulated station charges.
- The chapter has a wide scope. It covers two types of track access charge: first, charges covering costs directly incurred, which consist of the: variable usage charge (VUC), capacity charge, traction electricity charge (EC4T charge), electrification asset usage charge (EAUC), and coal spillage charge; and second, mark-ups, which consist of the freight only line (FOL) charge, the new freight specific charge (FSC), and the fixed track access charges (FTAC), the latter being payable only by franchised passenger operators. There is also a station long term charge.
- This chapter also covers our conclusions on our consultation on charges relating to on-rail competition.
- It is our role to set the framework within which Network Rail has responsibility for calculating its track access charges. It has undertaken a major programme of work with extensive consultation and industry engagement. Because of the different roles of ORR and Network Rail, the importance of consulting with the industry and the technical detail which underpins the work, the process for setting charges is an extended and detailed one. This chapter describes each stage of the process and hence is necessarily lengthy. At the start of the chapter we have summarised the combined effect of the changes to charges in terms of the impact on the main users: franchised passenger operators, freight operators, open access operators and charter operators.
- In setting the framework for charges, we are seeking to improve the extent to which charges reflect costs. By making charges more cost reflective we will improve incentives for Network Rail to manage provision of network capacity more efficiently, and on its customers to use that capacity efficiently. It will also improve incentives on Network Rail's customers to work with Network Rail to reduce costs where they can. At the same time, we recognise that changes to charges can significantly affect passenger and freight operators and their customers. In reaching our decisions we have had extensive discussions with stakeholders, have considered these impacts and have taken pragmatic steps to mitigate them where necessary.

Key messages in this chapter (continued)

- In updating the VUC, we have concluded on accepting new research and evidence on how variable usage costs vary by vehicle. We concluded that the new rates for the VUC for all passenger traffic should be implemented in full from the start of CP5. This is because these result in a decrease in the average VUC for passenger operators and we consider it appropriate that passenger operators benefit from the new evidence on cost drivers as soon as possible. In our view, it would be beneficial for new franchises to expose TOCs to changes in charges, strengthening their incentives to work with Network Rail to reduce its costs.
- We have concluded that the new rates for the VUC for freight traffic should be implemented subject to a cap on the average VUC measured relative to CP4 rates and the increase is phased in for the last three years of CP5 in a way that is cost reflective and does not unduly discriminate. We have made our decision with reference to cumulative changes to all track access charges, set in the context of the overall PR13 package. This results in an average increase in the VUC for freight operators in real terms of 3.6% for CP5 overall.
- Network Rail undertook a major recalibration of the capacity charge in PR13, resulting in substantial increases in many of the capacity charge rates. With respect to this charge, following extensive helpful discussion with RDG and the wider industry, we have decided to implement an approach which we consider best meets the industry's objectives and our own statutory duties. We are implementing the newly recalibrated capacity charge during CP5 and mitigating, where necessary, the impacts of its large increases. We conclude that franchised passenger operators will pay the newly calibrated capacity charges in full. For freight operators, there will be year-end wash-up arrangements for three categories of commodities to ensure that Network Rail has appropriate incentives to accommodate additional traffic. Existing open access operators will pay CP4 capacity charge rates on existing traffic, but the CP5 recalibrated rates on new traffic. Any new entrant open access operator will pay CP4 rates on services below a threshold (set to provide broadly equivalent treatment with existing open access operators) and CP5 rates above the threshold. Charter operators will have similar arrangements, using a separate wash-up, to freight operators.

Key messages in this chapter (continued)

- At the start of CP4, all operators were charged for EC4T on the basis of modelled rates, which provided operators with weak incentives to manage their electricity consumption. This is changing. Currently, around 25% of EC4T is billed on the basis of metered consumption, and we expect this to rise to around 50% by April 2015. In PR13, we are further supporting increases in electricity efficiency and reductions in CO_2 emissions by refining the EC4T charging framework, which we worked with the industry to establish during CP4, in order to support expansion of on-train metering. We are introducing financial incentives for the first time for Network Rail to manage transmission losses by exposing it to electricity volume risk through the volume wash-up.
- We have set out some changes to the EAUC and coal spillage charge, primarily to reflect updated estimates of the costs they are set to recover. We have agreed with Network Rail's conclusions to remove the annual review mechanism for the coal spillage charge on the basis of its disproportionate administrative costs, though we will revisit the case for a review mechanism as part of PR18.
- We are introducing a new FSC, payable for the haulage of coal for the electricity supply industry (ESI), spent nuclear fuel, and iron ore. The FSC is designed to recover those freight avoidable costs not recovered by other charges. Taking account of cumulative impact of increases to other freight charges, we have concluded not to introduce the FSC until April 2016, and then to increase it gradually in CP5 to reach only around 50% of what would have been its final level if we had fully implemented the charge on the basis of latest cost estimates. Further, we have decided not to impose the FSC on biomass in CP5.
- We have concluded on recalibrated rates for the FOL charge to reflect updated cost estimates. In CP5, consistent with the FSC, Network Rail will levy the FOL charge on ESI coal, iron ore and spent nuclear fuel. Large changes to the FOL charge relative to CP4 are being phased in gradually over CP5: this applies to iron ore, for which the FOL charge is a new charge, and to spent nuclear fuel, where the CP5 charge is substantially higher than that for CP4 due to a correction being made in the calculation of the charge.
- We conclude on income from FTAC and the station LTC in this chapter. In CP5 the station LTC will recover an additional group of costs, namely those for stations information and security systems (SISS), which in CP4 were recovered through FTAC.
- We estimate that average total franchised passenger variable charges will increase by 36% from CP4 to CP5 in real terms, and with constant levels of traffic and electricity prices. This is a consequence of the substantial increase in the capacity charge. Franchised operators are largely protected from this increase under the terms of their franchise agreements.

Key messages in this chapter (continued)

- We estimate that average total freight charges will increase by 21% from the last year of CP4 to the last year of CP5, in real terms and with consistent levels of traffic and electricity prices. This equates to an increase in charges of 4% per year, in real terms, in each year of the period. For commodities not affected by the FSC, the corresponding increase is 1% a year on average. To give businesses more time to adjust, the increase to the VUC and the FSC will be phased in from April 2016, reaching the full capped level only in 2018-19.
- For open access, due to the measures we are taking to mitigate the impacts of increases in the capacity charge, the average variable charges will stay approximately constant from CP4 to CP5 in real terms.
- Our conclusions on charges for charter operators will improve consistency between charter track access contracts and those of other passenger and freight operators, and ensure that the prices charter services will pay to Network Rail are more reflective of cost. On average, our analysis shows that this package will result in charter operators being marginally better off financially than they have been in CP4.
- In this chapter we publish our conclusions on on-rail competition, following our consultation published on 14 June 2013 in which we consulted on options to allow passenger open access operators greater access to the network in return for some contribution to fixed costs. Reflecting the responses we received, we have decided not to implement either of the options so there will be no significant changes to the open access regime. However we will address open access as part of PR18 and, in response to suggestions from operators, explore possible improvements to the way the test that restricts access works.
- We will do more work in the early part of CP5 to improve our understanding of costs and consider how they might be better reflected in charges (including the capacity charge) for CP6. We will work with the industry, and also with passenger groups and freight customers, as appropriate, in conducting this review of the structure of charges.
- Network Rail will publish its price lists, consistent with our determination, on 20 December 2013.
- Our conclusions are largely consistent with those of our draft determination. The substantive change compared to our draft determination is in the way we implement the capacity charge to mitigate some of its impacts on operators. Other changes are small, including taking account of refinements to some cost estimates.

Summary of changes to charges

16.1 We start this chapter by summarising how the levels of track access charges and the station long term charge will change from CP4 to CP5. These changes are partly a consequence of certain changes to the structure of charges that we have introduced for CP5, but also a consequence of Network Rail's work in PR13 re-estimating the costs that the charges are designed to recover.

16.2 The remainder of this chapter goes on to explain changes being made to Network Rail's charges as part of PR13, and the substantial body of work and lengthy processes undertaken by Network Rail, ourselves and the industry that underpin them. In some cases, there are changes to the basis on which a charge is levied that affect its incentives, without necessarily changing its level. This is particular true for electric current for traction (EC4T), where we are implementing changes to incentivise Network Rail to manage transmission losses more effectively and to further enable on train metering.

16.3 In this chapter we also present our forecast of Network Rail's income from each charge, using Network Rail's forecasts of changes to traffic volumes over CP5. This feeds into our calculation of Network Rail's net revenue requirement.

16.4 In this summary, we show changes to charges from the perspective of those that pay them, Network Rail's customers, in the following order:

(a) franchised passenger operators;

(b) freight operators;

(c) open access operators; and

(d) charter operators.

16.5 The acronyms we use for the charges are explained in the introduction and subsequent sections. Consistent with the rest of this document, all values are in 2012-13 prices unless otherwise stated.

Franchised passenger operators

16.6 Table 16.1 shows our comparison of track access charges for franchised passenger services for CP4 and CP5. The charges shown are our estimates, and in several cases they are weighted averages. They are accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists.

Table 16.1: Comparison of charges in CP4 and CP5 for franchised passenger services

Type of charge	Payable in CP5 by	CP4 charge	CP5 charge
Variable charges (pence per vehicle mile, 2012-13 prices)			
VUC (estimated weighted average)	All services	9.60	9.20
Capacity charge (estimated weighted average)	All services	10.23	22.08
EAUC – DC (third rail)	Electrically powered services	0.47	0.72
EAUC – AC (overhead line)	Electrically powered services	1.24	1.62
Charges that do not vary with traffic (£m per year, 2012-13 prices)			
FTAC (total, Great Britain)	All franchised passenger services	913 (for 2011-12)	406 (for 2014-15) to 855 (for 2018-19)
Station LTC – managed stations	Station	22 (for 2013-14)	31.8
Station LTC – franchised stations	Station facility owner GB	134 (for 2013-14)	119.4

Notes: the capacity charge is levied per train mile not vehicle mile, but is shown per vehicle mile to aid comparison

16.7 Table 16.2 shows our estimate of Network Rail's income from each charge. To facilitate comparison, electricity prices and traffic levels constant for all years (and hence EC4T income is shown to be the same in each year).

16.8 The average capacity charge for CP5 will be more than double the equivalent CP4 charge, though there is significant variation across services, with some experiencing a reduced capacity charge. Under the terms of the franchise, these operators are protected from the financial effects of the large increase for those services that form part of the franchise. Other charges change little in absolute terms as a result of PR13. Charges in CP3 were a broadly similar level to CP4, but with substantially higher VUC and lower capacity charge, as documented in our PR08 final determination.

Table 16.2: Train operator payments to Network Rail for franchised passenger services by charge (with constant traffic)

Charge (£m a year, 2012-13 prices, 2013-14 traffic)	CP3	CP4	CP5	Change CP4 to CP5
VUC	327	164	157	-4%
Capacity charge	8	174	382	119%
EAUC	43	10	13	35%
EC4T (consistent electricity prices)	221	221	221	0%
Total, variable charges	**600**	**569**	**774**	**36%**

Notes:

1. The table shows charges determined as part of PR13. These do not include payments associated with Schedules 4 and 8, which are set out in chapter 20, and payments not determined as part of PR13.
2. EC4T revenue assumes constant electricity prices as well as traffic.
3. Numbers may not reconcile due to rounding.
4. CP3 revenue estimated on the basis of Table 19.14 in PR08 final determination.

16.9 Franchised services also receive Schedule 4 payments and pay Network Rail an access charge supplement to finance Schedule 4. They also receive and pay Network Rail Schedule 8 payments. These payments are set out in chapter 20.

Freight operators

16.10 Table 16.3 shows our comparison of track access charges for freight services for CP4 and CP5. The charges shown are our estimates, and in several cases they are weighted averages. They are accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists. For those charges for which an increase is phased in, only the charges for the first and last year of CP5 are shown in this table: they are shown for each year of CP5 in full in the relevant section of this chapter.

16.11 Our decision on the freight capacity charge is such that its weighted average rate is a function of how traffic grows relative to a baseline. As there is forecast to be significant traffic growth, we have illustrated how the rate may change in Table 16.3 and the two subsequent tables by calculating it relative to the latest traffic forecasts for 2018-19 (which are Network Rail's draft forecasts for its delivery plan). We have then applied the rate to 2014-15 traffic to calculate income.

Table 16.3: Comparison of charges in CP4 and CP5 for freight services

Type of charge (2012-13 prices)	Payable in CP5 by	CP4 charge (£ per kgtm)	CP5 charge (£ per kgtm)
VUC (estimated weighted average)	All services	1.81	1.81 (2014-15) rising to 1.99 (2018-19)
Capacity charge (estimated weighted average)	All services	0.15	c. 0.12 (2014-15) potentially rising to c.0.15 (2018-19)
Coal spillage	Services transporting coal	0.32 (2009-10) 0.25 (2012-13)	0.40
EAUC – DC (third rail)	Electrically powered services	0.063	0.050
EAUC – AC (overhead line)	Electrically powered services	0.118	0.248
FOL charge	ESI coal	0.53	0.52
FOL charge	Iron ore	0.00	0.00 (2014-15) rising to 0.84 (2018-19)
FOL charge	Spent nuclear fuel	5.34	5.34 (2014-15) rising to 27.72 (2018-19)
FSC	ESI coal	0.00	0.00 (2014-15) rising to 1.04 (2018-19)
FSC	Iron ore	0.00	0.00 (2014-15) rising to 0.76 (2018-19)
FSC	Spent nuclear fuel	0.00	0.00 (2014-15) rising to 3.00 (2018-19)

Notes:

1. The capacity charge is levied per train mile not per kgtm, but is shown per kgtm to aid comparison
2. kgtm = thousand gross tonne miles.

16.12 Tables 16.4 and 16.5 show freight operators' payments to Network Rail broken down by charge and by rail freight commodity respectively. To facilitate comparison, we have held electricity prices and traffic levels constant for all years (and hence EC4T income is shown to be the same in each year). As increases in some charges are phased in over time, we show both revenue for the charge at the end of CP5 (2018-19) and as an average for CP5. Commodities with relatively low shares of traffic that are not subject to a FSC are aggregated in the category "other".

16.13 Overall, in real terms, charges are set to increase by around 21% on current levels by 2018-19, equivalent to 4% a year average. For commodities not affected by the FSC, the corresponding increases are 6% and 1% respectively. There will be a large

variation in the extent of the increase in charges for individual commodities, with track access charges falling marginally for some commodities, and increasing materially for others.

Table 16.4: Freight operator payments to Network Rail for freight services by charge (with constant traffic)

Charge (£m a year, 2012-13 prices, 2014-15 traffic)	CP3	CP4	CP5 average	End CP5 (2018-19)	Change CP4 to 2018-19	Average annual increase
VUC	95.2	55.2	57.1	60.5	9%	2%
Capacity charge	4.0	4.0	3.7	4.2	4%	1%
Coal spillage charge	4.0	1.9	3.0	3.0	56%	11%
EAUC	N/A	0.3	0.7	0.7	108%	22%
FOL charge	N/A	3.8	4.0	4.5	19%	4%
FSC	N/A	N/A	2.7	7.5	N/A	N/A
EC4T (consistent electricity prices)	6.2	6.2	6.2	6.2	0%	0%
Total variable charges	**109.4**	**71.5**	**77.4**	**86.5**	**21%**	**4%**

Notes:

1. Coal spillage charge revenue for CP4 is for the year 2012-13.
2. EC4T revenue assumes constant electricity prices as well as traffic.
3. The table shows charges determined as part of PR13. These do not include payments associated with Schedules 4 and 8, which are set out in chapter 20, and payments not determined as part of PR13.
4. Numbers may not reconcile due to rounding.
5. CP3 revenue estimated on the basis of Table 19.15 in PR08 final determination.

Table 16.5: Freight operator payments to Network Rail for freight services by key commodity (with constant traffic)

Commodity (£m a year, 2012-13 prices, 2014-15 traffic)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Change CP4 to 2018-19	% annual increase CP4 to end CP5
Domestic intermodal	23.1	23.3	23.5	23.6	23.6	23.7	2%	0%
Construction materials	8.6	8.5	8.5	8.9	9.5	10.2	18%	4%
Steel	6.0	5.9	5.9	6.0	6.2	6.4	6%	1%
Petroleum	2.5	2.5	2.5	2.5	2.5	2.6	2%	0%
Biomass	1.8	1.8	1.8	1.9	2.0	2.2	21%	4%
Coal other	1.4	1.5	1.5	1.5	1.6	1.6	17%	3%

Commodity (£m a year, 2012-13 prices, 2014-15 traffic)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Change CP4 to 2018-19	% annual increase CP4 to end CP5
European intermodal	1.4	1.5	1.5	1.5	1.4	1.4	-1%	0%
Industrial minerals	0.9	0.9	0.9	0.9	1.0	1.0	12%	2%
Domestic automotive	1.0	1.0	1.0	1.0	0.9	0.9	-6%	-1%
Other	4.0	3.9	3.9	4.0	4.0	4.1	3%	1%
Total, commodities to which FSC does not apply	**50.8**	**50.7**	**51.0**	**51.7**	**52.9**	**54.1**	**6%**	**1%**
ESI coal	19.9	20.7	20.6	22.6	26.7	30.8	55%	11%
Iron ore	0.4	0.4	0.4	0.4	0.6	0.7	80%	16%
Nuclear	0.4	0.4	0.4	0.4	0.7	1.0	158%	32%
Total, commodities subject to FSC	**20.7**	**21.4**	**21.4**	**23.5**	**28.0**	**32.5**	**57%**	**11%**
Total	**71.5**	**72.2**	**72.4**	**75.2**	**80.8**	**86.5**	**21%**	**4%**

Notes:

1. The table shows charges determined as part of PR13. These do not include payments associated with Schedules 4 and 8, which are set out in chapter 20, and payments not determined as part of PR13.
2. Numbers may not reconcile due to rounding.

Open access passenger operators

16.14 Table 16.6 shows our comparison of track access charges for open access passenger services for CP4 and CP5. The charges shown are our estimates, and in several cases they are weighted averages. They are accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists.

16.15 There are some anomalies in the levying of the capacity charge in CP4 that, as we explain in this chapter, we are addressing for CP5. This accounts for the difference in the capacity charge between CP4 and CP5. We have not shown a capacity charge for new services because the charge rate varies significantly depending on the characteristics of the service.

Table 16.6: Comparison of charges in CP4 and CP5 for open access passenger services

Type of charge (2012-13 prices)	Payable in CP5 by	CP4 charge (pence per vehicle mile)	CP5 charge (pence per vehicle mile)
VUC (estimated weighted average)	All services	13.1	12.5
Capacity charge (estimated weighted average)	All services	5.7	Existing operators, existing traffic: 6.5 Existing operators, additional traffic: 31.6 New operators, at or below threshold: 6.5 New operators, above threshold: 31.6
EAUC – DC (third rail)	Electrically powered services	0.47	0.72
EAUC – AC (overhead line)	Electrically powered services	1.24	1.62

Notes:

1. The capacity charge is levied per train mile not vehicle mile, but is shown per vehicle mile to aid comparison
2. Due to data constraints, we estimate the open access weighted charges to one or two significant figures only.

16.16 The impact of our determination on track access charges for open access passenger services is shown in Table 16.7. As with the equivalent previous tables, we have assumed constant traffic and electricity prices so that the impact of PR13 is shown in full.

Table 16.7: Train operator payments to Network Rail for open access passenger services by charge (with constant traffic)

Charge (£m a year, 2012-13 prices, 2013-14 traffic)	CP4	CP5	Change CP4 to CP5
VUC	2.2	2.1	-6%
Capacity charge	1.1	1.2	13%
EAUC	0.0	0.0	0%
EC4T (consistent electricity prices)	3.6	3.6	0%
Total	**6.9**	**6.9**	**0%**

Notes:

1. The table shows charges determined as part of PR13. These do not include payments associated with Schedules 4 and 8, which are set out in chapter 20, and payments not determined as part of PR13.
2. EC4T income assumes constant electricity prices as well as traffic.
3. Numbers may not reconcile due to rounding.

Charter passenger operators

16.17 Table 16.8 shows charges for CP5 for charter operators. The charges shown are our estimates, and in several cases they are weighted averages. They are accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists. Note that the charges are presented per train mile, whereas the equivalent tables for other passenger operators show charges per vehicle mile.

Table 16.8: Comparison of charges in CP4 and CP5 for charter operators

Type of charge (2012-13 prices)	CP4 charge (£/ train mile)	CP5 charge (£/ train mile)
VUC - diesel or electric equipment	1.21	1.06
VUC - steam equipment	1.45	1.06
VUC - diesel or electric light locomotive	N/A	0.56
VUC - steam light locomotive	N/A	0.61
EAUC	N/A	Same as franchised passenger (per vehicle mile)
Capacity charge - CP4 rate (to apply to traffic below baseline)	N/A	0.17 (0.13 weekend discount)
Capacity charge - CP5 charter rate (to apply to traffic above baseline and apportioned to all traffic in the wash-up)	N/A	1.00 (0.67 weekend discount)

16.18 Table 16.9 shows CP4 payments to Network Rail from charter operators, and forecast CP5 annual average income. A positive net difference means a reduction in the total income paid by operators to Network Rail between CP4 and CP5.

Table 16.9: Train operator payments to Network Rail for charter services (with constant traffic)

£'000 a year (2012-13 prices)	VUC	EC4T	Schedule 8[1]	Capacity charge	Total
CP4 payments	521	0	174	0	695
Forecast CP5 payments	482	30	0	73	585
Net difference between CP4 and CP5 payments	**39**	**-30**	**174**	**-73**	**110**

Note:

1. With the introduction of benchmarks, the expected financial value of Schedule 8 would be zero at expected levels of performance, and we have assumed CP4 Schedule 8 performance for charter operators.
2. We have used average annual charter traffic in CP4 to calculate the CP4 and CP5 charges income.
3. The analysis excludes income from slot and cancellations charges, which will not change in real terms as a result of PR13. It also excludes EAUC income because it is very small.

Introduction

16.19 In this chapter we conclude on the access charges paid by Network Rail's customers that are within the scope of PR13[316]. They include:

(a) track access charges paid by franchised passenger train operators, open access passenger train operators and charter passenger train operators;

(b) track access charges paid by freight train operators; and

(c) station long term charges paid by the users of franchised stations and the 17 Network Rail 'managed' stations.

16.20 It is important that Network Rail's charges reflect the costs they are designed to recover. In this way, charges provide the best possible signals to Network Rail and to its customers about the provision and use of infrastructure services. This in turn drives efficient use of resources, both in terms of existing infrastructure and the provision of new capacity, and incentives to reduce costs where possible.

16.21 In PR13, Network Rail has undertaken a thorough review of the costs that the charges are set to recover and, on that basis, calculated the charges. We have largely held the structure of charges constant, with two exceptions.

16.22 The first is the introduction of a new freight specific charge (FSC) on certain commodities. In CP4, freight accounted for around 7% of all train kilometres and 24% of gross tonne kilometres on the network, generating costs of roughly £280m per year. However, less than 1% of Network Rail's revenue, of £6.4bn in 2011-12, comes from rail freight. While we recognise that there are good reasons for subsidising rail freight, there are some parts of the rail freight sector that could make a greater contribution to the costs they impose on the network. This charge represents a small increase in their contribution towards the costs they generate.

16.23 The second is a set of changes relating to the treatment of the costs of electricity for traction, in particular relating to incentives for on-train metering and for Network Rail to manage electricity transmission losses. These changes will increase Network Rail's exposure to the costs associated with transmission losses, improving incentives to reduce these losses, increasing efficiency and benefitting the environment.

16.24 In addition, Network Rail has provided better evidence in relation to cost drivers; and we are implementing changes to existing charges in a way that broadly reflects the relative importance of different factors in driving cost, while at the same time mitigating impacts by introducing some interim arrangements for CP5, prior to our

[316] Access charges not within the scope of PR13 are those in access contracts either exempt from regulation (such as the non-stopping Paddington to Heathrow services operated by Heathrow Express) or those that do not contain a contractual reopener permitting a periodic review by ORR of the charges (such as depot access agreements and connection contracts). Charges not within the scope of PR13, but which contribute towards Network Rail's other single till income are discussed in chapter 18.

review of the structure of charges for CP6. In particular, for freight we are phasing in substantial changes to the different relativities between the different variable usage charges for different vehicle types. And we are mitigating the impacts of large increases to the capacity charge for some operators by implementing the new rates relative to baseline traffic levels and allowing for year-end reconciliations.

16.25 By increasing the extent to which Network Rail's charges reflect cost in this way, we improve incentives for efficiency, improve value for money for users and funders, and reduce the reliance of the railway on public subsidy, which is currently running at more than £4bn per year.

16.26 In relation to all these changes and having regard to our statutory duties, we have taken account of the impact, not only on passenger and freight operators but also on their customers. Where appropriate, for example in relation to the FSC, this has caused us to mitigate their impacts, for example by phasing them in over a longer period.

16.27 Following PR13, we will work with the industry to conduct an extensive review of the structure of charges in the early stages of CP5 as part of work preparing for PR18. By beginning this review early, the aim is to give the industry more time to plan for any changes. In undertaking this work, we would like to gain a better understanding of infrastructure costs and their drivers, and to identify scope for charges to send better signals for efficient provision and use of network capacity, and for more efficient cost recovery, ultimately improving value for money. We are keen that the work should look at the balance between recovery of costs from network grant, fixed charges and variable charges. Recognising the potential significance of this review for Network Rail, its customers and their customers we are keen to see RDG and industry involved from the start. We will shortly be developing our governance structure and work programme, and look forward to the commitment of industry resource and expertise.

16.28 This chapter is structured as follows:

(a) background to the access charges framework;

(b) brief overview of the level of charges in CP4;

(c) description of our general approach to assessing Network Rail's charging proposals;

(d) description of how we have taken account of our decisions for efficiency in determining the level of charges;

(e) the role of traffic forecasts in the forecasts of income from charges;

(f) the method of calculation and charge levels for each of the charges for 'costs directly incurred':

(i) variable usage charge (VUC);

(ii) capacity charge;

(iii) traction electricity charge (EC4T charge);

(iv) electrification asset usage charge (EAUC); and

(v) coal spillage charge;

(g) the method of calculation and charge levels for the 'mark-up' which is levied on certain types of freight traffic (in addition to charges for costs directly incurred), via:

(i) the freight only line (FOL) charge; and

(ii) the new freight specific charge (FSC);

(h) the method of calculation and levels of the fixed track access charges (FTAC) payable by franchised passenger operators;

(i) the method of calculation and charge levels for station long term charge (LTC);

(j) conclusions following our consultation on charges relating to on-rail competition between passenger services;

(k) issues specific to charter services;

(l) implementation issues; and

(m) what our conclusions mean for different stakeholders:

(i) franchised passenger services;

(ii) freight services; and

(iii) open access passenger services.

16.29 Consistent with the rest of this document, all values are in 2012-13 prices unless otherwise stated. In addition, costs and charges for CP5 are presented at end of CP5 levels of efficiency (which is the basis on which charges for CP5 will be levied) unless otherwise stated.

Background

16.30 Charges provide:

(a) Cost recovery: A mechanism for Network Rail to recover the efficient costs it incurs in providing track and station infrastructure used by train operators;

(b) Signals for efficiency of use: Users make better use of services, including capacity, by responding to signals sent through prices based on cost. Charges provide signals to train operators, their suppliers and funders for the efficient use and development of vehicles and the infrastructure;

(c) Signals for cost efficiency and allocation: Charges allow costs to be allocated. Where charges allocate costs to those who have caused them to be incurred they provide an incentive to reduce those costs; and

(d) Signals for efficient provision of goods and services: Charges send signals to providers as to the goods and services they should provide. In this case, charges could provide an incentive to Network Rail to respond to signals sent by users through prices and their consumption decisions about what they are willing to pay for and what Network Rail should therefore provide (as long as those charges cover the cost of provision).

16.31 Charges are therefore an important means through which information and incentives can be provided to encourage improvements in efficiency, and therefore the value for money provided by the railway. Where charges are not cost-reflective, the incentives on both providers and users of the infrastructure to act commercially are weakened.

16.32 Under the charging principles set out in EU legislation, transposed into the Access & Management Regulations, the track access charges that each operator pays are calculated to reflect the costs that Network Rail incurs as a result of allowing that operator's services to operate on the network. These costs include wear and tear of Network Rail's assets, and also those Schedule 8 costs, which are compensation payments for delays and cancellations, that vary with traffic that Network Rail recovers through the capacity charge.

16.33 Exceptions to these charging principles are permitted in certain narrowly defined circumstances. One such exception is that of a mark-up, where the charge is above that of the costs directly incurred, which is permitted so that a greater proportion of Network Rail's costs are recovered through charges, provided that certain principles are adhered to, including that the charge does not price market segments off the network. Some freight services have paid mark-ups in CP4, and we are extending this in CP5 so that those freight services that can bear a mark-up because they do not compete with road make a greater contribution to the costs they impose on the infrastructure.

16.34 Station facility owners pay regulated station long term charges to Network Rail to enable it to recover the costs of maintaining, renewing and repairing its stations.

16.35 The FTAC recovers Network Rail's net revenue requirement. This is calculated as Network Rail's total revenue requirement net of Network Rail's variable track access charges, Network Rail's regulated station charges, network grant and other single till income[317]. FTAC is paid by franchised passenger operators only and is determined as an annual charge rather than a charge per unit of traffic.

[317] Network grant and other single till income are covered in other chapters.

Charges in CP4

16.36 As Table 16.10 shows, in 2011-12 around 90% of Network Rail's income came from those charges paid by passenger and freight operators and grant income determined as part of PR08 (in lieu of FTAC that would otherwise have been paid by franchised passenger TOCs). Around 78% came from grant income and FTAC alone (which do not vary according to the volume of traffic).

16.37 Of the variable charges, for passenger services the three charges accruing the most income in CP4 have been the VUC, the capacity charge and the charge for using EC4T. In contrast, for freight services, around 75% of income has accrued from the VUC. This is because proportionately fewer freight services use EC4T, and because of the lower capacity charge for freight reflecting, for example, freight services' use of the network at less congested times than passenger services.

Table 16.10: Network Rail Great Britain-wide income from regulated charges and grants for 2011-12

Charge £m (2012-13 prices)	Franchised passenger operators	Freight operators	Open access passenger operators	Total, passenger and freight operators
VUC	155	50	3	207
EAUC	9	0	0	9
Coal spillage charge	0	2	0	2
Freight-only line charge	0	4	0	4
Traction electricity charge	206	5	3	214
Capacity charge	174	4	1	179
Total variable charges	**544**	**64**	**7**	**614**
FTAC	913	0	N/A	913
Grant income	4,108	N/A	N/A	4,108
FTAC and grant income	**5,021**	**N/A**	**N/A**	**5,021**
Station long term charge	145	0	1	146
Total regulated charges and grant income	**5,710**	**64**	**7**	**5,781**
Total Network Rail income (includes other single till income)				**6,464**

Notes:

1. Source: ORR analysis of Network Rail Regulatory Accounts
2. Traction electricity income from open access operators includes that from Heathrow Express and other operators not subject to other regulated variable charges.
3. Numbers may not reconcile due to rounding.

16.38 Table 16.11 lists each of the regulated access charges levied by Network Rail in CP4. The table also shows the units on which each charge is levied, for example kgtm

means the charge is levied in terms of pounds or pence per thousand gross tonne mile (kgtm). With the exception of FTAC, the track access charges are not disaggregated geographically, in that the charges for a particular vehicle type, service group and commodity do not vary according to what section of route they are travelling on.

Table 16.11: Regulated access charges in CP4

Type of charge	Basis for charge	Payable in CP4 by	Unit on which charge has been levied
Charges for costs directly incurred			
VUC	Recovers maintenance and renewal costs that vary with traffic	All services	kgtm (freight) Vehicle mile (passenger)
Capacity charge	Recovers Network Rail's Schedule 8 compensation costs that vary with traffic	All franchised passenger, open access passenger and freight services (charter do not currently pay the capacity charge)	Train mile
Coal spillage charge	Recovers the costs of coal spillage	Services that transport coal	kgtm
EC4T charge	Recovers the costs of providing electricity for traction purposes	Electrically powered services	kWh. For services that are not metered, this is modelled per train mile for multiple units, otherwise per kgtm
Electrification asset usage charge (EAUC)	Recovers maintenance and renewal costs of electrification assets that vary with traffic	Electrically powered services	Vehicle mile (passenger) kgtm (freight)
Mark-ups			
Freight only line (FOL) charge	Recovers the fixed costs of FOLs	Services that transport electricity supply industry coal (ESI) and spent nuclear fuel	kgtm

Type of charge	Basis for charge	Payable in CP4 by	Unit on which charge has been levied
Other			
Station long term charge (LTC)	Recovers station building and civils maintenance, repair and renewal costs	Station facilities owner (who levy on services that call at stations)	Billing period
FTAC	Determined on basis of Network Rail's revenue requirement after accounting for the income received from variable track access charges, regulated station charges, other single till income and network grants.	Franchised passenger operators	Billing period

Process for determining the level of charges for CP5

16.39 Network Rail has responsibility for developing charging proposals in line with our charging objectives and guidance, which we set out in Annex F of our May 2011 consultation[318]. We retain responsibility for the charging framework, i.e. for any changes to policy including the development of new charge proposals, and we also audit and approve the charges that Network Rail has calculated.

16.40 Network Rail has conducted its work calculating track access charges with a high degree of industry engagement. Network Rail has consulted and then concluded on all of its charges, and published its work. For all charges it has engaged closely with the industry throughout PR13. And it has held working groups with respect to particular technical issues, notably with respect to the methodology for allocating variable usage costs to individual vehicles and commodities, and with respect to the capacity charge.

16.41 We have reviewed Network Rail's work and its treatment of points made in response to its consultations. In addition, we asked the independent reporters to review some of Network Rail's proposals as part of our scrutiny process.

16.42 Table 16.12 lists reports published as part of this process. In addition to the reports listed below, Network Rail published draft price lists for all charges with explanatory

[318] *Periodic Review 2013 First Consultation Annexes*, Office of Rail Regulation, May 2011. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/PR13-first-consultation-annexes.pdf.

notes on 12 July 2013. Network Rail's publications on charges can be found via its PR13 web page[319].

Table 16.12: PR13 Network Rail consultations, studies and reviews on charges

Category of cost or charge	Network Rail consultation	Network Rail conclusions	Network Rail consultancy studies	Independent reporter reviews
1) Variable usage charge (VUC)				
VUC initial cost estimates and freight caps	November 2011	March 2012	N/A	Review of analysis in Network Rail's 'freight cap' consultation, by Arup, March 2012
Suspension factors	March 2012	August 2012	Various including RFCpro User Guide, University of Huddersfield, November 2012	N/A
Allocation of the VUC to individual vehicles and commodities	December 2012	April 2013	VTISM[320] analysis to inform the allocation of variable usage costs to individual vehicles, by Serco, December 2012	ORR staff conducted a review
2) Capacity charge				
Consultation on the capacity charge	July 2012	September 2012 Preliminary conclusions	N/A	N/A
		April 2013 capacity charge conclusions and draft pricelists	Recalibrating the capacity charge for CP5, Arup, May 2013	FTI consulting - review of the econometric work underpinning the capacity charge, September 2013

[319] This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/.

[320] Vehicle Track Interaction Strategic Model, discussed in the section on the VUC.

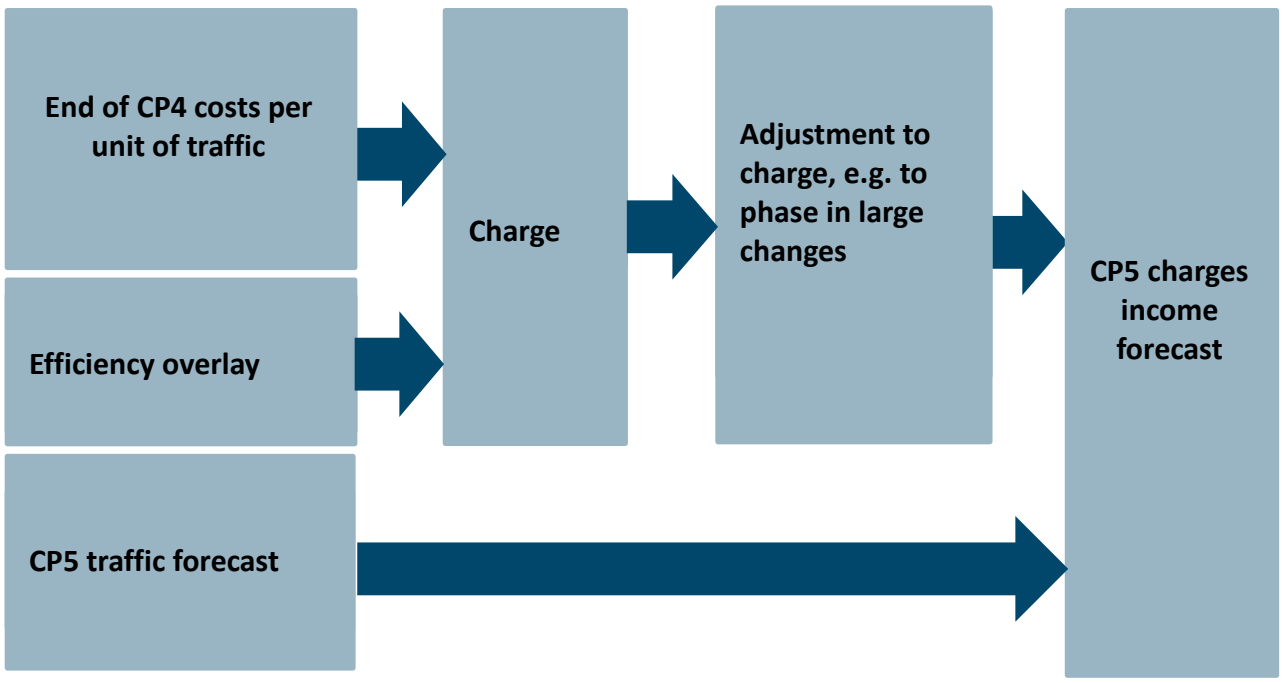
Category of cost or charge	Network Rail consultation	Network Rail conclusions	Network Rail consultancy studies	Independent reporter reviews
	ORR capacity charge consultation letters of 19 July, 24 September and 8 October 2013	N/A	N/A	N/A
3) Traction electricity charge				
Consultation on traction electricity charge and EAUCs in CP5	September 2012 ORR consultation April 2013	February 2013	N/A	1. EC4T transmission losses estimates review, AMCL, December 2012. 2. EC4T SBP model audit report, by Arup, June 2013
Consultation on charges for losses and regenerative braking for metered operators on the DC network	November 2012	February 2013	N/A	
4) EAUC	September 2012	February 2013 and amended May 2013	N/A	Assessment of EAUC Proposals, by AMCL, June 2013
5) Coal spillage charge	December 2012	April 2013	N/A	Review of Network Rail's coal spillage charge, by Arup, April 2013
6) Freight only line charge				
Freight only line charge initial cost estimates (part of Network Rail's consultation on freight caps)	November 2011	March 2012		Review of analysis in Network Rail's 'freight cap' consultation, by Arup, March 2012
Part of a wider consultation focusing on phasing in the FSC	February 2013	April 2013	Estimating freight avoidable costs, by L.E.K, October 2012	
7) FSC				

Category of cost or charge	Network Rail consultation	Network Rail conclusions	Network Rail consultancy studies	Independent reporter reviews
	ORR consultation May 2012	ORR conclusions January 2013	Estimating freight avoidable costs, by L.E.K, October 2012	Review of VTISM modelling, Arup, November 2012
Phasing in of the charge and other issues	February 2013	April 2013		
8) FTAC	November 2012	March 2013	N/A	N/A
9) Station LTC	September 2012	January 2013	N/A	Various reporter studies on station costs (see chapter 8).

16.43 In addition to the work undertaken by Network Rail, we have developed two main changes to the charging framework: the introduction of a FSC and amendments to the EC4T charge. These are also listed in the above table.

16.44 Figure 16.1 shows how Network Rail's income from variable charges is calculated, in both the SBP and in our determination. The charge is calculated as a cost per unit of traffic to which an efficiency overlay is applied, so that the charge is equivalent to costs at end-CP5 efficiency. The income is calculated by taking the product of individual charges and their respective traffic forecasts for CP5. These calculations are made in constant prices (2012-13 prices) and so do not take account of inflation.

Figure 16.1: Calculation of CP5 income for each variable charge



16.45 Before setting out our determination with respect to each individual charge, we first explain the efficiency overlays that we have used.

Feedback on the process

16.46 A number of respondents to our draft determination, including Freightliner, DB Schenker and RFG, said that PR13 had placed heavy resource requirements on stakeholders. Respondents called for ORR to review how PR13 has been conducted with a view to reducing the burden on stakeholders for PR18 and assessing whether the level of consultation and timescales for responding to consultations were appropriate. We also received strong feedback on the process for setting the capacity charge in PR13.

16.47 Following PR08, we undertook a review of the process for setting charges in that periodic review. We published our conclusions on this at the start of PR13[321]. Although many respondents were complimentary about the PR08 process, some had stated that some Network Rail consultations only allowed a short timescale for responses; that the consultation on vehicle characteristics should have been conducted earlier, and operators were given insufficient opportunity to check their data. They also argued that there was a lack of transparency on the development of charges, and that Network Rail had had insufficient resources to liaise with

[321] *Appendix to Annex F: responses to initial consultation on structure of charges*, Office of Rail Regulation, May 2011. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/PR13-first-consultation-annexes.pdf.

consultees. An operator also observed that there were a large number of consultations, which used up significant operator resources.

16.48 In PR13, Network Rail and ORR have extensively engaged with operators, not least through the monthly charging meetings which have allowed a large number of issues to be discussed in a single forum. And, in contrast to PR08, operators have been given extensive opportunity to review assumptions regarding their vehicle characteristics and services. We are grateful for the considerable contribution of operators, who have helped improve Network Rail's cost estimates and improve industry's understanding of freight avoidable cost.

16.49 There is a balance to be struck between transparency and administrative burden, but ultimately it is important that the process is transparent for those that want to scrutinise it. This scrutiny is largely voluntary, but welcome and improves the quality of the process.

16.50 RDG and others have stated that the ORR process regarding treatment of the capacity charge has been subject to time pressure. We think that this process has been important, because it has enabled us to work with the industry to achieve a good outcome in terms of compensating Network Rail for the performance compensation costs of accommodating additional traffic, while mitigating impacts on groups of operators. The time pressure itself has been a consequence of increases in capacity charges of this scale only emerging late in PR13 (albeit in accordance with the project plan). It is important that we avoid such a situation again, which is why we wish to conduct a review of the structure of charges early in CP5. We will take lessons from this experience, including our interaction with the industry, and the experience of PR13 more widely, into account as we prepare the governance arrangements and work programme for the review.

Treatment of efficiency in the estimation of charges

16.51 It is very important that Network Rail manages its assets effectively and efficiently. The assumptions we have made on the level of Network Rail's maintenance and renewals expenditure, as described in chapter 8, will be reflected in the level of charges that operators pay, given that charges are set to be cost reflective.

16.52 In determining our approach for CP5, consistent with the wider decisions described in chapter 8, we have considered the efficiency overlay that should be applied to each charge. This overlay reduces the cost, calculated on the basis of end-of-CP4 costs, by the gains in efficiency we assume in our determination over the relevant period.

16.53 This section describes[322]:

[322] Refer to chapter 8 for further information on our decisions on efficiency for both maintenance and renewals expenditure. Chapter 8 further describes the treatment of embedded efficiencies and the methodology we have adopted in making adjustments to Network Rail's baseline.

(a) our approach to applying an efficiency overlay to charges in CP4;

(b) our draft determination decision; and

(c) our determination of the approach to applying an efficiency overlay for each charge in CP5.

Treatment of efficiency in charges for CP4

16.54 In PR08, charges for each year of CP4 were calculated using our determination of long-term efficiency as an overlay. This reflected our assessment of efficiency improvement in CP4 and the further catch-up efficiency estimated for CP5. The VUC, coal spillage charge and EAUC were calculated on this basis.

16.55 The approach taken for the FOL charge was slightly different in that the charge (for the whole of CP4) was adjusted by an overlay that reflected end-of-CP4 efficiency only. This reflected the fact that the charge, distinct from other variable charges, was a mark-up, levied in order to recover some portion of fixed cost.

16.56 An efficiency overlay was not applied to Schedule 8 (performance regime) payment rates, as they are determined with reference to the financial impact of performance on train operators' revenue, and hence was not applied to the capacity charge either. No efficiency overlay was applied to EC4T in CP4 as it was regarded as a 'non-controllable' cost.

Our draft determination

16.57 In our draft determination, to determine our view of the level of income by charge, we first calculated Network Rail's pre-efficient level of income (the "Network Rail baseline") by removing the efficiency assumed in its SBP and the efficiencies associated with Network Rail's CP5 asset policies. We then made certain adjustments to Network Rail's baseline, consistent with our adjustments to pre-efficient expenditure (as set out in chapter 8). We then applied our view of efficiency for CP5.

16.58 Table 16.13 shows our draft determination view of the end of CP5 level of efficiency for each charge. We received consultation responses on the efficiencies to be applied to Network Rail's maintenance and renewals costs, which are described in chapter 8. However, we did not receive any material comments specifically on the efficiency overlays to be applied to charges.

Table 16.13: Our draft determination of efficiency overlays for CP5 charges[323]

Charge	ORR adjustment to pre-efficient expenditure	ORR efficiency overlay	Efficiency type
VUC (where not capped)	-4.4%	19.1%	weighted maintenance and renewals
EAUC	+8%	29.5%	electrical power and fixed plant maintenance and renewal
Coal spillage charge	-4.4%	19.1%	weighted maintenance and renewals
Station LTC – buildings expenditure	0% for managed stations and -6.3% to -13.6% for franchised stations	19.2% for managed stations and 23.3% for franchised stations	buildings – managed and franchised stations
Station LTC – Stations Information and Security Systems (SISS) expenditure	+0.3% to -13.2%	16.2%	SISS expenditure – managed and franchised stations
Freight only line charge	-4.4%	19.1%	weighted maintenance and renewals

Our determination of the efficiency overlay for charges

16.59 Chapter 8 sets out our analysis of efficiencies available in CP5.

16.60 We have applied our end of CP5 efficiency assumption to charges. We think that it is important that the charges are adjusted for efficiency in a way that is cost reflective. Table 16.14 shows our view of the end of CP5 level of efficiency that should be applied to each charge, on the basis of our comprehensive review of the evidence. These efficiencies are applied in each year of CP5.

16.61 Since our draft determination, Network Rail has identified the SISS maintenance and repair expenditure for those stations where it is contractually responsible for carrying out these activities. Table 16.14 shows our view of the end of CP5 level of efficiency for this expenditure.

[323] These are applied so that, for example, the adjustment for the EAUC is an increase of 8% and then reduction of 29.5% (approximate net impact a reduction of 21.5%, but they are applied as a product rather than a sum).

16.62 The changes to our efficiency assumptions since our draft determination have led to a mixture of increases and decreases in terms of the impact on charges. All other things being equal, relative to the draft determination, they result in:

(a) a slight increase in the level of charges for the VUC (passenger services), coal spillage charge, average station LTC – buildings expenditure (managed stations), average station LTC – SISS renewals expenditure and freight only line charge; and

(b) a slight reduction in the level of the EAUC.

16.63 The changes in efficiency assumptions do not change the average VUC for freight services, the capacity charge or EC4T charges. In the case of the freight VUC, this is because they are capped charges. The capacity charge is a function of Schedule 8, so is treated differently. We do not make explicit efficiency assumptions for EC4T costs and income, which are primarily driven by train operators' consumption.

Table 16.14: Our determination of efficiency overlays for CP5 charges

Charge	ORR adjustment to pre-efficient expenditure	ORR efficiency overlay	Efficiency type
VUC (where not capped)	-4.0%	18.9%	weighted maintenance and renewals
EAUC	+7.8%	29.5%	electrical power and fixed plant maintenance and renewal
Coal spillage charge	-4.0%	18.9%	weighted maintenance and renewals
Station LTC – buildings expenditure	0% for managed stations and -7.5% to -15.2% for franchised stations	16.7% for managed stations and 23.0% for franchised stations	buildings – managed and franchised stations
Station LTC – Stations Information and Security Systems (SISS) renewals expenditure	+0.2% to -12.3%	16.4%	SISS renewals expenditure – managed and franchised stations
Station LTC – Stations Information and Security Systems (SISS) maintenance and repair expenditure	0.0%	18.1%	maintenance - telecoms
Freight only line charge, freight specific charge	-4.0%	18.9%	weighted maintenance and renewals

Traffic forecasts and forecast charges income

16.64 For its SBP, Network Rail forecast traffic volumes for each of its routes for each year of CP5 in order to estimate the income it would receive from all track access charges excluding FTAC (which is not levied per unit of traffic). Its traffic forecasts also drove some of its estimates of costs, notably track maintenance and renewal costs, as well as other considerations including performance and capacity.

16.65 Subsequent to its SBP, Network Rail has updated its forecast of freight traffic for CP5 and this forecast is substantively different from that submitted as part of its SBP. We think that the updated forecast is much more realistic: for example it takes account of the projected decline in the use of coal for electricity generation, and the impact of planning constraints on growth in intermodal traffic. We have assessed the implications of updating our determination for these new traffic forecasts. Nonetheless, we have concluded that we will retain the SBP traffic forecasts as the basis for our determination of Network Rail's costs and charges income. We have made this decision on the basis that:

(a) retaining the SBP traffic forecasts only has a small impact on the financial settlement, and therefore does not require further detailed modelling; while at the same time

(b) using the new forecasts on a consistent basis would require a major effort in the updating of costs, with significant associated risks of insufficient quality assurance this late in PR13.

16.66 While we have not updated forecasts of costs or income to reflect the updated traffic forecasts, we have updated other elements of our determination, for example the baseline for the volume incentive (chapter 19).

16.67 In this section, we outline the traffic forecasts we have used and the basis of our decision not to update them in our determination of Network Rail's funding. We also explain the quality assurance we have undertaken with respect to the associated projections of income from track access charges.

16.68 The rest of this section is structured as follows:

(a) we set out how Network Rail prepared its SBP traffic forecasts;

(b) we describe our draft determination on traffic forecasts;

(c) we describe our approach to assessing whether to use Network Rail's updated traffic forecasts (prepared in draft for its delivery plan) including considering the implications of the selected forecasts for our determination of Network Rail's income from charges in CP5 and its net revenue requirement; and

(d) we describe work carried out to audit forecast charges income.

Network Rail's SBP traffic forecasts

16.69 Network Rail submitted its SBP traffic forecasts to us as part of its infrastructure cost model (ICM) submission. This model was used to forecast income from charges, the results of which Network Rail published[324].

16.70 Consistent with the basis on which different charges are levied, for freight services its forecasts were in train km, and gross tonne km for each commodity; and for passenger services its forecasts were in train km and vehicle km for each service group[325]. Summary statistics for the forecasts are shown in Table 16.15. Note that we have made a correction to the growth in franchised passenger traffic shown in this table since our draft determination, as the previous version (used as the basis for income forecasts in our draft determination) incorporated some errors from Network Rail's ICM submission.

Table 16.15: SBP traffic forecasts of growth in traffic 2013-14 to 2018-19

	Freight		Franchised Passenger		Open Access Passenger		Electrified traffic (passenger)	Electrified traffic (freight)
Metric	Train km	Tonne km	Train km	Vehicle km	Train km	Vehicle km	Vehicle km	Tonne km
Great Britain								
	24%	25%	7%	10%	2%	3%	24%	43%
England & Wales								
	25%	26%	7%	10%	2%	3%	23%	43%
Scotland								
	17%	16%	6%	9%	0%	0%	40%	47%

Source: Network Rail Infrastructure Cost Model, June 2013

16.71 Network Rail's SBP forecasts were derived from 2011-12 actual traffic. Network Rail forecast changes in passenger traffic for CP5 by taking account of planned and other expected changes to services, for example resulting from infrastructure enhancements. However, some parts of the network, for some times of the day, have sufficient spare capacity that they may experience increases in traffic without associated infrastructure enhancements or other investment. Network Rail sought to forecast this underlying growth in vehicle km using guidance from the industry-standard Passenger Demand Forecasting Handbook. It forecast changes in freight

[324] See Network Rail's SBP supporting documents on financing and funding, which set out income forecasts for each of the charges. *Financing and funding,* Network Rail. This may be accessed at http://www.networkrail.co.uk/browseDirectory.aspx?root=&dir=%5cStrategicBusinessPlan%5cCP5%5cSupporting%20documents%5cFinancing%20and%20funding.

[325] For legacy reasons, charges are billed on the basis of miles, whereas Network Rail conducts much of its analysis using km.

traffic for CP5 by taking account of the freight forecasts prepared for Network Rail's March 2007 Freight Route Utilisation Strategy[326].

Our draft determination and responses to our draft determination

16.72 In our draft determination we considered that Network Rail's approach to passenger traffic forecasting had been sensible and balanced. We noted that better information on freight traffic had been published subsequent to the SBP. We received very few comments on these forecasts. One freight operator commented that the SBP freight forecasts would need further work to be suitable short-term forecasts for CP5. It also expressed scepticism about the relative growth rates of freight train km and freight tonne km. Network Rail addressed both of these points in its updated CP5 forecasts.

Network Rail's updated traffic forecasts

16.73 Subsequent to the publication of the SBP, Network Rail updated its forecasts for both passenger and freight traffic for its delivery plan, which it will publish in draft in December 2013. Its passenger forecasts were based on current information on planned and expected changes to services. Its updated freight forecasts were based on new draft forecasts published in its freight market study consultation as part of its long term planning process[327]. As the freight market study forecasts were based on long term unconstrained growth, Network Rail has made some adjustments to forecast for CP5 and account for capacity constraints, including to reflect the likely speed of development of intermodal freight terminals.

16.74 Table 16.16 compares the Network Rail's SBP and draft delivery plan freight traffic forecasts for Great Britain in CP5. We have disaggregated the table into groups of commodities with very different traffic projections. The analysis excludes engineering trains.

Table 16.16: Comparison of forecasts of growth in freight traffic for CP5

% change 2013-14 to 2018-19	Coal & biomass		Intermodal		Other		All commodities	
Metric	Train km	Tonne km	Train km	Tonne km	Train km	Tonne km	Train km	Tonne km
SBP forecasts	15.8%	19.6%	51.1%	51.1%	2.8%	3.0%	23.7%	24.8%
Draft delivery plan forecasts	-22.2%	-20.3%	18.2%	24.3%	2.3%	2.6%	2.1%	3.5%

[326] *Freight Route Utilisation Strategy*, Network Rail, March 2007. This may be accessed at http://www.networkrail.co.uk/browseDirectory.aspx?dir=%5CRUS%20Documents%5CRoute%20Utilisation%20Strategies%5CFreight.

[327] *Long Term Planning Process: Freight Market Study Draft for Consultation,* Network Rail, April 2013. This may be accessed at http://www.networkrail.co.uk/improvements/planning-policies-and-plans/long-term-planning-process/market-studies/freight/.

The sensitivity of the financial settlement to a change in the traffic forecasts

16.75 We considered whether to reflect Network Rail's updated delivery plan traffic forecasts across our determination. While the change in the passenger forecast was small, the updated freight forecasts for CP5 were significantly lower than those in the SBP.

16.76 Traffic forecasts affect both costs and charges income. In general, as most charges are set to equal costs directly incurred, the forecast change in income associated with a change to the traffic forecast should approximately equal the forecast change in cost. If this principle holds, Network Rail's funding requirement is insensitive to small changes in overall traffic forecasts.

16.77 Small differences occur as a result of differences in the profile of efficiency assumptions. But the key instances in which incremental costs do not cancel out the incremental income are:

(a) when a charge is capped, as per our draft determination conclusions with respect to the freight VUC; and

(b) when the charge is a mark-up, rather than set to recover a cost directly incurred, as is the case for FOL charge and FSC.

16.78 We estimated the impact of the change in traffic forecast on the costs that are recovered by the VUC, namely the operating, maintenance and renewal costs that vary with traffic. To do this, we used Network Rail's estimates of variable costs that it used as the basis for calculating the VUC. These differed from the VUC income for freight principally because in our draft determination we concluded that we would cap the VUC for freight. When netting off the change in VUC charges income as a result of the forecast, we estimated, when considering these costs alone, Network Rail would be approximately £15m better off for CP5 as a whole, GB total, as a result of us not updating the SBP freight traffic forecast.

16.79 We calculated the discrepancy in forecast income from the FOL charge and FSC resulting from the different forecasts. As a simplifying assumption, we attributed no change in costs to these charges, which, unlike other charges, are mark-ups and hence do not reflect costs directly incurred. We found that Network Rail would be approximately £10m worse off for CP5 as a whole, GB total, with respect to these charges as a result of us not updating the SBP freight traffic forecasts.

16.80 Consistent with our conclusion on the capacity charge (paragraph 16.194 onwards), we assumed that the incremental capacity charge revenue would be approximately cancelled out by changes to Schedule 8 costs. Similarly, for other charges not mentioned above we assumed that incremental income would cancel out incremental cost.

16.81 On the basis of the above, across all costs and charges we estimated that Network Rail would be approximately £5m better off, in total for the whole of CP5, if we

continued to use the SBP forecast for freight relative to the updated forecast. This would take the form of increased funding through FTAC, and would not affect freight operators' charges.

16.82 As a result of this analysis, we concluded that retaining the SBP traffic forecasts only had a small impact on the financial settlement and hence did not require further detailed modelling. In addition, we considered that there would be a substantive risk that any updated estimates of costs and income to reflect updated traffic forecasts would not be sufficiently quality assured within the remaining timescale of PR13. As a consequence, we estimated Network Rail's costs and income from charges in the determination on the basis of the SBP traffic forecasts.

Process for checking charges income forecasts

16.83 Network Rail's charges income model has been reviewed by Network Rail's consultants and the independent reporter Arup, and we have made cross-checks with our own calculations. We noted above that the franchised passenger traffic forecast used in our draft determination omitted some traffic. Network Rail has corrected this forecast in its income model and we have checked that this change has been reflected in the calculations of charges income where necessary.

16.84 Following our draft determination, Network Rail commissioned Steer Davies Gleave (SDG) to review a number of Network Rail's charges spreadsheets, including its income model, and its Schedule 8 benchmarks model. SDG carried out a bottom-up review of the spreadsheets, checking that they correctly performed the calculations intended. Where SDG identified potentially material errors in the calculations, Network Rail produced revised versions of the spreadsheets demonstrating that errors had been corrected. SDG's final report confirmed that it was satisfied that the spreadsheets carried out the calculations intended and were fit for purpose. The report has been published on Network Rail's website[328].

16.85 We have also carried out additional cross-checks between Network Rail's charges income model and our own income calculations. For all charges except the capacity charge and VUC, we reconciled Network Rail's income model with our own calculations, and understood the basis for any discrepancies. For the capacity charge, we have made our own income calculations using Network Rail's income model for franchised and open access passenger income. These calculations have been audited internally and checked independently by Network Rail. For freight capacity charge income we have developed a bottom-up income forecast, which we audited internally. For the VUC, Network Rail provided a new income model superseding its

[328] *Review of income and Schedule 8 benchmark models,* Steer Davies Gleave, October 2013. This may be accessed at: http://www.networkrail.co.uk/PR13-closed-consultations/SDG-final-report–review-of-income-and-schedule-8-benchmark-models.pdf.

SBP charges income model. We audited this model internally and were satisfied that it performed the income calculations as intended.

Variable usage charge

The method of calculation and charge levels for the VUC

16.86 The VUC is set to equal the operating, maintenance and renewal costs that vary with traffic. In CP4, the VUC made up more than 75% of Network Rail's track access charges income from rail freight, and around 30% of variable track access charges from passenger traffic.

16.87 In practice, rail infrastructure operating costs are widely understood not to vary materially with traffic, and the charge was set in CP4 to recover variable maintenance and renewal costs only. Network Rail has estimated that around 85% of these variable usage costs (i.e. the costs recovered through the VUC) consist of track wear and tear, with the remainder consisting of civil costs and signalling. The charge does not reflect the costs of providing or changing the capability or capacity of the network.

16.88 Not all costs that vary with traffic are recovered through the VUC. The VUC recovers costs that change with marginal changes in traffic, whereas some costs change with larger increments and are not recovered through standard variable charges (though may be recovered through mark-ups). Some costs relate to subsets of traffic. In particular, as we explain later, variable costs associated with electrification assets are charged only to electrified vehicles through the EAUC; and costs associated with coal spillage are recovered through the coal spillage charge, which is only levied on coal traffic. The capacity charge is necessarily a separate charge because it is levied per train mile, rather than per vehicle mile or kgtm.

16.89 The VUC is differentiated by vehicle class. This differentiation reflects the significant variation in infrastructure wear and tear costs associated with different vehicle characteristics, for example vehicle operating speed and axle weight. In the case of freight, the charge is further disaggregated by commodity type, reflecting the different axle loads associated with different commodities. The rates are averaged across the network as a whole, resulting in a single Great Britain-wide price for each permutation of vehicle type and commodity.

16.90 We consulted on geographic disaggregation of the VUC, but decided as set out in our January 2013 conclusions document[329] not to pursue this approach for CP5, reflecting concerns raised by the industry about the complexity this could introduce and the extent to which this would undermine rail freight's ability to compete with road. We will include the question of how cost drivers vary with geography and how this should be

[329] *Periodic review 2013 decision on the variable usage charge and a freight specific charge,* Office of Rail Regulation, January 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/consultations/freight-charges.php.

reflected in charging in our wider review of the structure of charges in the initial part of CP5.

Calculating the charge in CP5

16.91 Network Rail has used broadly the same approach for calculating the VUC in PR13 as that used in PR08. As with PR08, its recalibration of the VUC has comprised two stages:

(a) estimating variable usage costs for an average vehicle; and

(b) apportioning total variable usage costs between individual vehicles (or vehicles and commodities in the case of freight).

16.92 The first stage has historically been referred to as calculating total variable usage costs, and indeed it is the basis on which revenue for the VUC can be forecast. It is, however a calculation of the costs associated with a small change in traffic, measured as a rate per gross tonne km (or mile)[330]. The rate is then multiplied by total traffic across the network. This calculation would result in a good estimate of total variable usage costs if the relationship between variable usage costs and traffic were linear, but research has suggested that this may not be the case. In particular, as part of work estimating freight avoidable costs, Network Rail has estimated that the total variable usage track costs associated with freight to be substantially more than the costs recovered through the VUC, i.e. that the VUC under-recovers freight's variable costs[331]. We consider this methodology for calculating the charge (i.e. calculating the costs for a small change in traffic) is consistent with the Access & Management Regulations which set the principles which must be followed when setting access charges. It is relevant, however, in respect to equivalent discussions relating to the capacity charge where some stakeholders have expressed concern that an over-recovery of compensation costs is occurring.

Estimating variable usage costs for an average vehicle

16.93 Network Rail estimated the costs for a small change in traffic for an average vehicle using broadly the same methodology as that which it used in PR08.

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[330] Network Rail found its estimates of increases in costs per unit of traffic to be very similar irrespective of whether it tested a 10% or 20% increase in traffic, and it has estimated the costs on that basis.

[331] The reporter Arup reviewed this work *(Review of Network Rail VTISM modelling and allocation to market segments for Freight Avoidable Costs*, Arup, November 2012), and concluded that the total variable usage track costs associated with freight would be in the range £144m to £210m a year 35 average traffic, in 2011-12 prices and end of CP4 efficiency, of which £70m may be recovered by the variable usage charge. L.E.K. has subsequently re-estimated so that, when we convert to end-CP5 efficiency and 2012-13 prices and adjust to 2013-14 traffic, amounts to £89m to £128m a year for all variable usage costs (not just track). This compared to freight revenue from the variable usage charge in CP4 of less than £50m a year (and a capacity charge of less than £5m a year), and hence the VUC under-recovers the variable usage costs.

16.94 Network Rail used a 'bottom-up' approach to estimating track variable usage costs. In order to derive these bottom-up estimates, Network Rail used the Vehicle Track Interaction Strategic Model (VTISM), which was developed for the cross-industry Vehicle/Track Systems Interface Committee (V/T SIC). VTISM directly related rolling stock and track characteristics to track damage, and thus to renewal and heavy maintenance requirements. VTISM uses engineering principles, embodied in numerical relationships, to predict track degradation and the remedial effects of heavy maintenance and renewal.

16.95 Network Rail had calibrated VTISM for its asset policies over the next 35 years. It tested track costs under current traffic levels and under incremental uniform increases in traffic levels across the network. Network Rail equated the resulting difference in cost per unit of traffic to be the track variable usage costs for the average vehicle.

16.96 For other variable usage costs (amounting to around 14% of total variable usage costs), Network Rail has taken a "top-down" approach. In particular, it disaggregated civils and signalling costs into a number of cost categories and, using a mixture of empirical evidence and engineering judgement, estimated the percentage of each cost that varied with traffic.

16.97 Network Rail consulted on its work as part of its freight caps consultation in November 2011 and concluded in March 2012. The independent reporter Arup reviewed its work and made a number of recommendations. As a result of this, Network Rail refined some small aspects of its estimates and provided more evidence to us for the basis of its assumptions. This evidence is published on its website.

16.98 We concluded that we were content with its approach as part of our January 2013 conclusions on track access charges. On the basis of this work, in our January 2013 conclusions we set a cap on the average VUC for freight. Our January 2013 document, and our earlier May 2012 consultation on the same issue, set out the technical issues and sources of evidence in some detail[332].

16.99 Subsequent to our conclusion, Network Rail updated its estimates as part of its SBP (our cap was based on earlier unit cost data). Since then, Network Rail has made some minor changes to its methodology. In particular, it reduced the cost estimate to remove some items of cost that would have otherwise been doubly recovered through both this charge and the coal spillage charge.

Our January 2013 decision on capping the VUC

16.100 The rail freight industry asked us for early assurance of the scale of track access charges in CP5. We agreed that this was appropriate, noting the uncertainty to the industry associated with our consultation on a new freight charge (the FSC). In

[332] *Periodic Review 2013 Rail Freight: conclusion on the average variable usage charge and a freight specific charge,* Office of Rail Regulation, January 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/freight-conclusions-jan-2013.pdf.

particular, we agreed to set a cap on the average freight VUC for our PR13 determination.

16.101 In our January 2013 document[333], we concluded on a cap on the average VUC of £1.68 per kgtkm in 2011-12 prices for freight services. This cap was calculated using a central cost estimate that was 5% to 7% higher than the CP4 charge, before taking account of expected improvements to efficiency, combined with a 15% confidence interval to account for uncertainty. We noted that it was possible that charges would be higher than they were in CP4, but that they would not exceed the cap that we set out in that document. Our conclusion was widely interpreted as meaning a 23% average increase in the freight VUC (product of 7% and 15% increase, allowing for rounding); this interpretation was a worst case scenario and took no account of our efficiency challenge for CP5[334].

Allocating costs to individual vehicles

16.102 Network Rail's cost estimates were then allocated between each vehicle operating on the network. The allocation was achieved, as was the case in PR08, based on the levels of damage caused by rail vehicles through vertical track forces, horizontal track forces, and damage to other rail infrastructure, in particular civils and signalling.

16.103 In early 2012, Network Rail established a working group of industry representatives to decide the scope of work for improving the methodology in this area. Collaborating with the industry group, it then prepared a specification for some of the work and appointed consultants to carry it out. The remainder of the work (in particular, relating to horizontal track forces) it carried out in-house.

Allocating vertical track damage costs to individual vehicles

16.104 Network Rail appointed Serco Technical Services (Serco) to undertake a study using VTISM to inform the allocation of track damage from vehicle forecasts between individual vehicle classes and commodities on a national average basis. Track damage from vertical forces amounts to around 70% of all track variable usage costs. Network Rail also asked Serco to review the allocation of civils and signalling costs.

16.105 Serco proposed a revised approach for apportioning vertical track costs to individual vehicles. Serco's analysis showed that relative to Network Rail's PR08 allocation methodology, the track damage associated with vertical forces resulting from heavy axle loads was higher and that track was less sensitive to vehicle speed[335]. Network

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[333] *Periodic Review 2013 Rail Freight: conclusion on the average variable usage charge and a freight specific charge,* Office of Rail Regulation, January 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/freight-conclusions-jan-2013.pdf.

[334] Both the CP4 and CP5 charge are being set on the basis of Network Rail's efficiency for end of CP5; but our determinations of what that might be, in PR08 and PR13 respectively, differ.

[335] *VTISM analysis to inform the allocation of variable usage costs to individual vehicles*, Serco, December 2012. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784406.

Rail estimated that applying this research would increase the VUC for certain laden freight wagons, particularly bulk wagons, between 50% and 100%.

16.106 Network Rail explained in its April 2013 conclusions on the allocation of the VUC[336] that it considered the work carried out by Serco was a robust piece of analysis that represents a step-change improvement in the understanding of the drivers of vertical track damage. However, it stated that "following careful consideration of consultation responses, we consider that changes to charges of this scale would be inappropriate to introduce in CP5. The primary reason for our conclusion in this regard is because of the combined effect that these price changes would have with ORR's new FSC…we are proposing that, as part of the wider charges review that the industry has committed to in early CP5 to inform CP6, the revised equivalent track damage equation developed by Serco should be adopted from the start of CP6."

Allocating horizontal track damage to individual vehicles

16.107 Network Rail estimated that horizontal track variable usage costs make up around 30% of total track variable usage costs. For CP5 Network Rail carried out work to update the CP4 methodology in order to improve the accuracy of the apportionment of horizontal track variable usage costs. Its revised approach incorporated a new damage calculation methodology and parameters.

16.108 Network Rail stated in its April 2013 conclusions document that it considered the revised methodology was robust and represented a significant improvement over PR08. But in the light of its conclusion that the adoption of the findings from Serco to allocate the vertical track damage costs should be deferred until CP6, Network Rail argued in its April 2013 conclusions that that it would be inappropriate to introduce the revised methodology in CP5.

Allocating other variable usage costs to individual vehicles

16.109 Network Rail has estimated that civils and signalling variable usage costs make up around 10% and 5% of total variable usage costs, respectively. The Serco study also recommended changes to the methodologies for apportioning other variable usage costs to individual vehicles. The recommendations were:

(a) to use the revised Serco equivalent track damage equation for apportioning variable usage costs for embankments, culverts and masonry underbridges;

(b) to use the civils methodology for apportioning variable usage costs for metallic underbridges, but with a modification to one of the parameters (the modified axle load exponent); and

[336] *PR13 closed consultations,* Network Rail. This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

(c) to apportion 50% of the signalling costs on the basis of vehicle mileage, and the other 50% on the basis of the (revised) equivalent track damage equation (in CP4 all signalling costs were allocated on the basis of the equivalent track damage equation).

16.110 In its April 2013 conclusions, Network Rail decided not to implement the revised methodology in CP5, instead retaining the CP4 methodology, on the basis that doing this was consistent with its decision not to implement the revised methodologies for apportioning track variable costs.

Suspension bands

16.111 In PR08, suspension factors took the form of discounts or premia applied to the VUC for each freight vehicle on the basis of descriptions of bogie type. The aim of this was to provide a discount for those vehicles which used 'track friendly' bogies[337] and hence an incentive for their use. In CP4, Network Rail conducted work and concluded on a new approach to determine suspension factors. The new approach uses a metric (the ride force count or RFC) rather than qualitative descriptions for calculating the impact of suspensions on track damage.

16.112 We confirmed our acceptance of this approach first by letter[338], where we set out the conclusions in some detail, and then as part of our January 2013 conclusions on track access charges. The new approach will apply to vehicles which start running on the network during CP5 and vehicles that have been opted in by a party that has provided the requisite data on vehicle characteristics to Network Rail as part of PR13.

Our draft determination on variable usage costs and VUC

16.113 The Serco research into vertical track damage was intended to replace a quantitative relationship between vehicle characteristics and vertical track damage that was in excess of ten years old.

16.114 We were supportive of the Serco work, and its contribution to a better understanding of cost drivers. We were however keen to understand the significance and robustness of the Serco work so we conducted a review using a multi-disciplinary team, and prepared a paper setting out the process we followed and the content of our review[339].

16.115 We agreed with Network Rail's view that the research was robust and represented a step change improvement in the measurement of vertical track damage. Table 16.17

[337] A bogie is a framework connected to the underside of the vehicle to which the wheels are attached.

[338] ORR letter of 24 September 2012, *VUC – Calculating suspension factors for CP5 for freight vehicles.* This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/vuc-suspension-bands-240912.pdf.

[339] *ORR review of the Serco report 'VTISM analysis to inform the allocation of variable usage costs to individual vehicles',* Office of Rail Regulation, July 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/serco-vuc-report-review-july-2013.pdf.

illustrates how the change would bring the measurement of vertical track damage with respect to axle load into line with research conducted elsewhere[340].

Table 16.17: Summary of axle load exponents

	Exponent	Exponent including gross tonnage
VUC CP4	0.49	1.49
Serco analysis for CP5	1.13	2.13
Railway Group Standards EMGTPA	1.00	2.00
Öberg and Andersson	Up to 3.0	Up to 4.0
International Union of Railways, UIC Code 714	1.00	2.00

Source: TTCI research on VUC for CP4[341]; Serco analysis for CP5.

16.116 We wrote to Network Rail in April 2013[342] asking it to recalculate the VUC using the PR13 research findings on apportioning costs to individual vehicles, where it considered that to do so – taking account of data constraints etc – improved the cost reflectivity of the charges. Network Rail replied in May 2013 with revised estimates of the VUC[343].

16.117 Our draft determination estimates of variable usage cost and charges were based on this letter from Network Rail. For our draft determination, we adjusted the values in Network Rail's letter to be consistent with our assumptions regarding Network Rail's efficiency.

16.118 As we expressed above, we agreed with Network Rail's assessment that the Serco research, supported by benchmarking from other sources, was a robust piece of analysis that represented a step-change improvement in the understanding of the drivers of vertical track damage. We thought that this analysis should be reflected in charges because it sends the right price signals to operators, customers, and others in the value chain regarding choice of vehicle and use of the infrastructure.

[340] The exponent determines the relationship between axle load and cost such that, all else being equal, cost per gross tonne mile is proportional to axle load to the power of the exponent; an exponent of 1 means that a vehicle with double the axle load causes twice the amount of damage.

[341] See Table 4 of *Methodology to Calculate Variable Usage Charges for Control Period 4*, UK *NR Report No. 08-002,* TTCI, March 2008. This may be accessed at http://www.networkrail.co.uk/StrategicBusinessPlan2008/TTCI_(UK)_variable_charges_methodology.pdf.

[342] ORR letter of 17 May 2013, *Rail Freight: Conclusion on the average variable usage charge and a freight specific charge*. This may be accessed at http://www.rail-reg.gov.uk/pr13/consultations/freight-charges.php.

[343] *Preparing Control Period 5 (CP5) price lists for the Variable Usage Charge (VUC)*, Network Rail, May 2013. This can be accessed at: http://www.networkrail.co.uk/NetworkRailresponsetoORRletter.pdf.

16.119 We were, however, also very conscious that implementing this new research evidence, would result in very significant increases in the VUC for some commodities, for example 55% for construction materials and 71% for industrial minerals according to Network Rail's May 2013 letter[344]. We listened carefully to the rail freight industry's representations on this. We understand that many rail freight markets are highly competitive, not least with road haulage, and that it would take the industry and its customers some time to adjust to such changes in a way that is efficient.

16.120 In our draft determination we therefore concluded that:

(a) the new rates for the VUC for all passenger traffic should be implemented in full from the start of CP5; and

(b) the new rates for the VUC for freight traffic should be phased in over CP5, subject to a 10% cap on the average VUC compared with CP4 rates by 2018-19. This should be implemented in a way that is cost reflective and does not unduly discriminate.

Network Rail publication of draft price lists

16.121 In July 2013, Network Rail published draft price lists for VUC consistent with our draft determination[345]. The purpose of these price lists was to allow train operating companies the opportunity to check their own proposed charges and to query any anomalies relative to other vehicles or CP4 rates.

16.122 The calculations in our draft determination were based on data provided to us from Network Rail that only implemented the Serco research on vertical track damage. We subsequently clarified that we were asking Network Rail to implement all the recommendations of Serco that it considered would make VUC rates more cost reflective. The draft price list rates reflected this and an explanation of the changes made to the VUC allocation methodology are provided in Annex A to Network Rail's draft price list consultation.

Summary of consultation responses on variable usage costs and VUC

16.123 A number of respondents questioned the robustness of Serco's review and also more generally commented on problems around the ability and use of VTISM for accurately modelling track damage. One criticism, among others that was received was that Serco disregarded results for vehicles travelling at high speed and respondents would like this investigated further. ATOC, along with others, supported the use of VTISM however and said it would welcome similar approaches for other cost factors.

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[344] *Preparing Control Period 5 (CP5) price lists for the Variable Usage Charge (VUC,* Network Rail, May 2013. This may be accessed at: http://www.networkrail.co.uk/NetworkRailresponsetoORRletter.pdf.

[345] *Draft price lists for CP5 consistent with ORR's draft determination,* Network Rail, July 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786915.

16.124 ATOC requested that additional geographic disaggregation be considered further in the upcoming review of charges to improve the signals to Network Rail and others. Others were supportive that we did not make this change as it would only add to the complexity of the charging regime.

16.125 Given the mitigating steps we took to avoid the large increases in freight charges, Network Rail accepted that the Serco recommendations should be implemented in CP5 with the phased caps that we proposed applied. Several freight operators also welcomed the proposed caps for the freight VUC rates over CP5.

16.126 Some freight operators did however highlight that the risk remains of freight charges rising in the future. They expressed the need for greater predictability in our long term plan so as not to damage rail freight competitiveness. Network Rail suggested that freight operators should assume that the caps would be removed in CP6 when making procurement decisions.

Our determination on variable usage costs and VUC

16.127 We carefully considered all the responses to the consultation. We acknowledge some challenge on specific technical points regarding the robustness of VTISM specifically. In response to the concerns raised both during the consultation period and before, we commit to working with industry and Network Rail, to gain greater assurance around the VTISM methodology during CP5.

16.128 We also recognise the issue that many freight respondents raised on the competition faced by rail freight markets and the need for certainty over future charges. In our forthcoming review of the structure of charges, working with the industry, we expect to consider how best to reflect in charges the impact of freight traffic on the network. We will also seek to move further towards our goal of greater cost reflectivity and understand more clearly the range of options that the freight sector has to reduce its impact on the network.

16.129 Along with the above considerations, we have decided to continue with the approach proposed in our draft determination as set out below.

16.130 For CP5 charges, we conclude that:

(a) the new rates for the VUC for all passenger traffic should be implemented in full from the start of CP5. This is because these result in a decrease in the average VUC for passenger operators and we consider it appropriate that passenger operators benefit from the new evidence on cost drivers as soon as possible;

(b) the new rates for the VUC for freight traffic should be implemented subject to a cap on the average VUC that is lower than the cap we concluded on in our January 2013 conclusions. This cap will be relative to CP4 rates. We consider that this is necessary to reflect the balance of our statutory duties and conclude that the cap should be 10%. In balancing our statutory duties the capped average increase to the VUC for freight traffic should be phased during CP5 on

the same profile as the phasing for FSC; 0% in years 1 and 2, 20% of the capped charge in year 3, 60% in year 4 and 100% in year 5. This results in an average increase in the VUC in real terms of 3.6% for CP5 overall; and

(c) the cap referred to in (b) above should be implemented in a way that is cost reflective and does not unduly discriminate.

16.131 We have made our decision with reference to cumulative changes to all track access charges, set in the context of the overall PR13 package. We expect the package to deliver many important improvements in the services operators can provide for passengers and rail freight customers.

16.132 Estimates of average variable usage costs per unit of traffic are set out in Table 16.18. These are costs rather than charges but are the basis on which the VUC is set, and the average VUC for CP4 is shown for comparison. We have adjusted estimates from previous reports so that they are expressed with consistent units, prices and efficiencies[346].

Table 16.18: Weighted average variable usage costs (not charges)

Weighted average cost (2012-13 prices)	Freight (£/kgtm)	Passenger (p/vehicle mile)	All traffic (£/kgtm)
CP4 weighted average actual charge			
Weighted average 2013-14 (source: Network Rail's updated VUC income model using traffic data disaggregated by service group and commodity, 2013-14 forecast traffic)	1.80	9.64	1.96
CP5 weighted average estimated cost			
Network Rail March 2012 conclusions (based on PR08 determined efficiency)	2.02	-	2.16
ORR January 2013 cap (based on PR08 determined efficiency)[347]	2.32	-	-
Network Rail SBP (2014-15 forecast traffic)	2.05	10.91	2.23
Network Rail April 2013 conclusions (no Serco)	1.80	11.59	-

[346] Network Rail has calculated the average cost by weighting costs for individual vehicles by the amount of traffic (and hence Network Rail income) associated with that vehicle. The choice of year used as the basis of traffic for weighting the charge does vary between some measures. This introduces some inconsistency between measures, but the effect is small.

[347] This is the £1.68 per kgtkm referred to early in the section with adjustment for prices and for PR08 efficiency and conversion from per km to per mile.

Weighted average cost (2012-13 prices)	Freight (£/kgtm)	Passenger (p/vehicle mile)	All traffic (£/kgtm)
Network Rail July 2013 (with Serco and ORR draft determination efficiencies)	2.23	9.48	2.12
Final determination	2.24	9.54	2.13

16.133 Network Rail's July 2013 draft price lists implemented our draft determination conclusions.

16.134 Table 16.19 shows Network Rail's estimates of how the Serco research impacts on estimates of variable usage costs for certain key freight commodities (prior to any capping of charges). These increases have fallen slightly since draft determination as Network Rail has now included further changes to reflect all of the Serco proposals that it considered improved cost reflectivity and hence were appropriate to implement. Details of all the changes it has made to reflect Serco can be found in Network Rail's July 2013 draft price list publication.

Table 16.19: Estimates of the impact of implementing Serco research on the variable usage costs for certain key commodities carried by freight operators

Commodity	Increase in variable usage costs resulting from implementing Serco research
Industrial Minerals	66%
Coal ESI	62%
Construction Materials	46%
Iron Ore	45%
Steel	37%
Biomass	27%
Domestic Intermodal	2%
European Intermodal	0%

Source: Network Rail's calculations for July 2013 draft price lists.

16.135 Table 16.20 shows our forecast of Network Rail's income from the VUC for franchised passenger, open access passenger and freight services, consistent with our determination. The numbers here are quite different from the draft determination, mostly due to the fact that Network Rail has now provided an updated income model that uses disaggregated historic traffic and uses the July 2013 draft price lists. Both these datasets have allowed analysis to be done much more precisely than for draft determination. The biggest change is for franchised passenger income which is now considerably lower.

Table 16.20: Our forecast of VUC income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Franchised passenger	163.6	158.8	160.3	161.7	165.5	170.7	817.0
Freight	52.7	55.2	56.8	61.0	65.0	69.3	307.3
Open access passenger	2.2	2.1	2.1	2.1	2.1	2.1	10.5
England & Wales							
Franchised passenger	150.6	146.2	147.6	148.9	152.2	157.2	752.2
Freight	47.5	50.0	51.4	55.3	58.9	62.7	278.2
Open access passenger	2.2	2.1	2.1	2.1	2.1	2.1	10.5
Scotland							
Franchised passenger	13.0	12.5	12.7	12.8	13.2	13.5	64.8
Freight	5.2	5.3	5.4	5.7	6.1	6.6	29.1
Open access passenger	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: numbers may not reconcile due to rounding.

16.136 Income from VUC does not necessarily equate to variable usage costs because, for example, certain large changes to charges will be phased in. Our decision to cap the increase in the VUC for freight means that the forecast VUC income is below that which it would be if the cost reflective charges were introduced in full, hence there is a commensurate increase in FTAC (or grants).

16.137 Table 16.21 shows our estimate of the weighted average VUC for franchised passenger, open access passenger and freight services, consistent with our determination. There are wide variations in the charges between these groups that reflect different vehicle characteristics. The vehicles used by open access services have a higher charge on average than the vehicles of franchised passenger operators because of these vehicles, for example higher than average operating speed.

Table 16.21: Our determination of estimated weighted average VUC

Weighted average charge (2012-13 prices)	Freight (£/kgtm)	Franchised passenger (p/vehicle mile)	Open access passenger (p/vehicle mile)
CP4 weighted average actual charge			
Weighted average 2013-14 (source: Network Rail's updated VUC income model using traffic data disaggregated by service group and commodity)	1.80	9.60	13.08
CP5 weighted average estimated charge – our determination			
2014-15	1.79	9.19	12.30
2015-16	1.78	9.20	12.30
2016-17	1.80	9.20	12.31
2017-18	1.85	9.20	12.31
2018-19	1.90	9.14	12.32

Notes:

1. Source: ORR calculations using data provided by Network Rail on vehicle mix in each service group in 2012-13 for passengers. Freight calculations done using vehicle mix to create an average weighted VUC rate for each commodity.
2. The average charge is weighted based on income forecast data so varies year on year for all types of traffic.

16.138 These numbers vary from the draft determination for several reasons. Network Rail have produced their draft price lists since the draft determination so they have a charge per vehicle rate which can be combined with 2012-13 outturn data on vehicle mixes from their billing systems to calculate a weighted average. This was done at a much more aggregated level at draft determination. Efficiencies have also changed since draft determination.

Other matters relating to the VUC

16.139 In this section we set out our conclusions on other policies related to the VUC on which Network Rail consulted.

Temporary default rates

16.140 In CP4, if track access charges of a freight vehicle have not been approved by ORR by the time that the vehicle has started running on the network, Network Rail instead has levied a default rate as an interim measure[348]. There has been no equivalent in the passenger contracts which have required a specific amendment to add an interim charge for each new vehicle. There have been several vehicles for which default or interim rates have been levied in CP4, where Network Rail has not known all the

[348] This is set out in paragraph 2.2 of Schedule 7 of the track access contract, the default rate being £1.82 per kgtm.

vehicle characteristics needed to calculate the VUC. When the correct rate is eventually approved, Network Rail has re-charged all journeys during the control period (including those already charged at the default or interim rate) at the approved rate.

16.141 Network Rail concluded, in its VUC April 2013 conclusions, on making the following changes to this procedure:

(a) applying a default rate to all passenger and freight vehicles where no specific rate for the vehicle exists on the price list;

(b) charging a default rate for the VUC only, on the presumption that other charges, which in most cases are flat rates, would be readily calculable; and

(c) introducing default rate bands (e.g. locomotive or laden wagon), with the respective rate for each of these bands being the highest relevant rate on the CP5 price list.

16.142 As before, when the correct rate is eventually approved, Network Rail would re-charge all journeys during the control period previously charged at the default rate by using the new approved rate. Income already received at the default rate would be refunded (i.e. the net impact on operators will be the difference between the default and ORR new approved rate).

16.143 Network Rail has argued that the default rates should be the highest rather than average rates so that operators (and others such as rolling stock manufacturers) are incentivised to provide the correct vehicle characteristics more quickly. Once the necessary vehicle parameters are known, the process within the track access contract provides for a specific VUC rate corresponding to the vehicle to be calculated and approved in good time. Provided that this process is adhered to, any delay in calculating the rate would primarily be as a result of a lack of information regarding a particular vehicle characteristic, which operators are best placed to provide. On this basis, in our draft determination we agreed with Network Rail's conclusions to set the default rates at high levels.

16.144 In our draft determination, we welcomed the other changes that Network Rail had proposed to the arrangements for default charges, recognising that these would provide for a more logical and equitable treatment across categories of vehicle. We sought views on the contractual changes required to implement these conclusions as part of our 12 July 2013 consultation on implementing PR13.

Our determination on temporary default rates

16.145 We received few responses on this issue following the consultation. Network Rail was very supportive, proposing, as above, that operators would provide correct vehicle data more quickly under these changes. DB Schenker however raised concerns that a freight operator would not always have easy access to all the required information. DB Schenker agreed to work with Network Rail to discuss this issue further with the

intention of putting in place a process where this information is collected at an early stage.

16.146 Network Rail has committed, prior to commencement of CP5, to issuing guidance to stakeholders setting out the information required and details of the end-to-end process for calculating VUC rates, and to strive to work collaboratively with key stakeholders when developing this guidance. We think that such guidance is a good initiative which will be an important complementary measure to that of having the default rate.

16.147 We support the new approach outlined above as it will strengthen the incentives around providing the correct data early on so that operators are charged the correct rate. We therefore conclude on replacing the current provisions for a default rate in the freight operator contract with new provisions for default rates that apply for VUC only, and introducing similar provisions into the franchised and open access passenger operator contracts. The default VUC rates would apply to all passenger and freight vehicles where no specific VUC rate for the vehicle exists on the price list (nor have been agreed as a bilateral supplement to the price list). As now, when the correct rate is eventually approved this is used to charge journeys and, in addition, Network Rail is to re-charge all journeys during the control period that had already been charged at the default rate.

16.148 We confirm Network Rail's conclusions for charging default rates, which will have default rate bands with the respective rate for each of these bands being the highest relevant rate on the CP5 price list.

16.149 We understand the significant difficulties in acquiring some of the data on vehicle characteristics so we are keen for Network Rail and industry to work together, as proposed by DB Schenker.

16.150 This will improve the process for collecting this information efficiently and pragmatically.

Rates for modified vehicles

16.151 Network Rail has concluded that, where a vehicle is modified mid-control period, an adjusted VUC rate should be calculated and applied to that vehicle, reflecting its changed characteristics. We are pleased that Network Rail has set out its intention to do this, having previously set out our support for VUC rates to reflect such vehicle modifications. This form of cost reflective charging incentivises operators to undertake these modifications to reduce Network Rail's costs. Where vehicles are modified, the application of a new VUC rate should be carried out using the process in the track

access contract[349] to supplement the price list with a new rate for that train operator (with the vehicle re-designated as a new sub-class).

Circumstances in which an individual charge might be changed during CP5

16.152 Network Rail has consulted on and concluded on its proposal that, with the exception of vehicles that have been subject to modification, VUC rates for individual vehicles will be fixed ("locked down") for CP5. It has cited, in particular, that the industry has made reasonable endeavours to set VUC rates using a robust list of vehicle characteristics. It has set out this process in its conclusions, and in our draft determination we encouraged operators to check that they were content with the parameters that Network Rail has used. As we have already set out, Network Rail has also prepared the methodology and calculated charges with extensive industry engagement and with careful review from us and the independent reporter.

16.153 In CP4, the passenger model contract (but not the freight model contract) has allowed for changes to the VUC and traction electricity modelled rates in circumstances of "manifest error" (paragraph 9.2 of Schedule 7). Given that the charges have been calculated and approved on the basis of extensive industry engagement and audit, we will remove the "manifest error" provision in the passenger contract. The PR13 process, with extensive industry engagement and audit, should ensure that the charges are compliant with the Access & Management Regulations.

Capacity charge

16.154 Under the performance regime (Schedule 8 of the track access contract, as set out in chapter 20 of this document) Network Rail is liable for train lateness or delays and cancellations that are not the fault of other operators, in particular delays caused by Network Rail or due to other factors such as the weather. The scale of Network Rail's Schedule 8 payments varies with traffic, however, as the volume of traffic affects Network Rail's ability to manage the knock-on delays resulting from incidents; this variation in Schedule 8 compensation payments is a cost directly incurred that is recovered through the capacity charge.

The capacity charge in CP4

16.155 The capacity charge was established as part of the Access Charges Review 2000. It was calculated by applying an estimated mathematical relationship to capacity utilisation (measured by the so-called Capacity Utilisation Index or CUI) and traffic volume-related delays for which Network Rail is liable (so-called Congestion-Related Reactionary Delays or CRRD). The CUI varies with traffic, and the associated change in CRRD, and hence Schedule 8 payments, were calculated using this relationship.

[349] This process is set out in paragraph 9 of Part 2 of Schedule 7 to passenger track access contracts and paragraph 2.2 of Schedule 7 to freight track access contracts.

16.156 The capacity charges we determined in PR08 were derived from CUI and CRRD data compiled for the Access Charge Review 2000. The capacity charge for passenger services used Schedule 8 rates consistent with those applied in CP4 (with some anomalies, which we are correcting in PR13), whereas the capacity charge for freight services was uplifted in PR08 only for inflation.

16.157 In CP4, the capacity charge for passenger services has been levied by service group, whereas the freight capacity charge has been a flat rate for the entire network. Both charges have been subject to a weekend discount to reflect lower weekend traffic volumes.

Calculating the charge in PR13

Network Rail's recalibration of the capacity charge

16.158 In addition to the ORR-led recalibration of Schedule 8 rates, Network Rail has undertaken a recalibration of the capacity charge for PR13. We considered this not only important in the calculation of the capacity charge but also in that having an updated understanding of capacity utilisation and its relationship with delay across the network would be valuable in itself. The industry can use this updated information in work to develop charges beyond PR13. It is also a useful metric to inform ongoing work to better understand Network Rail's performance with respect to its role as a system operator.

16.159 Network Rail commissioned a consortium made up of consultants Arup and Imperial College London (ICL) to undertake the recalibration. The consultants carried out the recalibration in the following stages:

(a) they developed a dataset for 6,688 individual components of the network, referred to as constant traffic route sections (CTSs), and 24 time bands across the week. They calculated the CUI (using timetable data) and the CRRD (using Schedule 8 data) for each route section and time band;

(b) they estimated the impact of capacity utilisation on delay by testing statistical relationships between the CUI and CRRD;

(c) they estimated the impact of a small change in capacity utilisation (for example, an additional train, "CUI+1") on delay on each route section during each time band, by applying the relationship between CUI and CRRD that they established;

(d) they calculated the financial cost to Network Rail of the additional delay by applying the weighted average Schedule 8 payment rate, for each route section and time band; and

(e) they aggregated the financial costs by service code, weighted by train miles, in order to estimate charges.

16.160 The consultants also reviewed whether certain aspects of the CP4 capacity charging regime remained valid for CP5, including reduced charges at weekends to reflect

lower weekend traffic volumes and reduced freight charges to reflect Network Rail's ability to re-route some freight trains in the event of disruption to the network.

16.161 The calculations resulted in substantially higher capacity charges, reflecting:

(a) significantly higher Schedule 8 payment rates for CP5 (reflecting greater associated revenue per train and other factors);

(b) higher capacity utilisation across the network on average, resulting in an increased number of capacity-related reactionary delays; and

(c) a higher proportion of freight services using more congested high value parts of the network (for example as a result of a shift from bulk to container traffic).

16.162 In April 2013 Network Rail published its capacity charge conclusions and draft price lists for CP5[350]. These calculations have subsequently been updated to reflect changes to Schedule 8 rates. The revised capacity charges include weekend discounts of 33%, compared to 25% for CP4.

16.163 These capacity charge rates would, if implemented, result in a very large percentage real terms increase in the charge for freight (of the order of 300 to 350%) and on average 119% real term increase for passenger services, though with wide variations for individual services including very substantial increases for open access services on the East Coast Mainline. Some fluctuations in individual charges relate to Network Rail's conclusion to levy the charge on passenger services at a more disaggregate level, on the basis that that was more cost reflective[351].

Challenges on the principle of and methodology used to calculate the capacity charge

16.164 Prior to the introduction of the capacity charge, Network Rail recovered the additional Schedule 8 costs of additional services on the network through negotiated bespoke arrangements. The capacity charge, calculated by formula, removed the considerable administrative costs associated with such arrangements.

16.165 Certain stakeholders, however, have expressed concern about the capacity charge. Some of these concerns related to its design, whereas others relate to the increased cost it imposed on operators, relative to the bespoke system, because it has been charged to all traffic rather than, under previous arrangements, being charged just on additional traffic.

16.166 For example, freight operators have argued that they should not pay the capacity charge on existing levels; rather they should only pay the capacity charge on traffic

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[350] *Periodic Review 2013 – Capacity Charge Conclusions and Draft Pricelists,* Network Rail, April 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064785533.

[351] In CP4, the capacity charge has been levied by service group for passenger services. Network Rail concluded that for CP5 the capacity charge would be levied by service code, where each service group consists of a number of service codes.

above a baseline. This is because Schedule 8 is a benchmarked regime. In particular, reactionary delay associated with existing traffic is reflected in Network Rail Schedule 8 benchmarks, meaning that Network Rail does not incur net costs associated with existing traffic levels.

16.167 Certain freight operators have argued both as part of PR08 and PR13 that the capacity charge is unacceptable in its current form because it over-recovers, i.e. it raises revenue in excess of the total costs associated with increases in traffic, and rather it should be levied only on traffic above that forecast in our determination. We discuss the over and under-recovery of costs with respect to variable charges in the VUC section. In particular, we point out that if the argument that the capacity charge in CP4 has over-recovered costs is applied to the VUC, then for the two charges combined for freight operators there has appeared to be a net under-recovery of costs.

The capacity charge for freight operators

16.168 In April 2013, the Rail Freight Operators' Association (RFOA) submitted a proposal outlining an alternative approach for calculating a capacity charge for freight operators (the 'RFOA proposal')[352].

16.169 The suggested approach was based on reviewing the difference between actual and benchmarked level of traffic on a periodic basis. It would start from establishing a mileage based baseline. Actual mileage would then be monitored against this baseline. Where mileage exceeded the baseline a per mile capacity charge would be levied. The charge would be levied periodically, e.g. annually, via a wash-up process. There would only be a payment if the calculation were positive, i.e. if mileage exceeded the baseline.

16.170 In terms of financial flows, this change would mean that Network Rail would receive substantially less funds from this alternative than it would from a capacity charge because no charge would be levied on train miles below the baseline. Any net change in total forecast variable charges revenue would be offset by a change to the revenue Network Rail received from FTAC.

Draft determination

16.171 In our draft determination, we noted that the pattern of use of the network has changed since the capacity charge was originally introduced. We identified that we are concerned that further work is needed to establish whether the capacity charge is the best way fully to reflect the value of capacity or the costs generated in its allocation and usage. As part of our review of charges in CP6, we are planning an extensive review of the way that charges reflect cost and in doing so send signals for

[352] RFOA letter of 24 April 2013, *Freight Capacity Charge – proposal on methodology*. This may be accessed at: http://www.rail-reg.gov.uk/pr13/PDF/freight-capacity-charge-2013-04-24.pdf.

efficient allocation, use and expansion of capacity. We may therefore substantially change the design or role of capacity charges in the future.

16.172 We also noted that the changes in capacity charge resulting from the Arup review were very material and accepted that it would be undesirable for track access charges to fluctuate significantly from one periodic review to the next from the perspective of industry investment and planning.

16.173 For those reasons, we concluded that we would not implement the recalibrated capacity charges as part of PR13. We would instead either implement an alternative proposal put forward by the RFOA (possibly applying it also to open access passenger operators and/or franchised passenger operators, having regard to their views on this), or approve capacity charge rates that have been calculated using the methodology established in CP4, uprated for inflation.

Responses to our draft determination

16.174 Around 20 stakeholders who responded to our draft determination commented on the capacity charge.

16.175 With the exception of two respondents, consultees opposed retaining the CP4 capacity charge rates. Go-Ahead argued for retaining the CP4 rates by referring to the level of increase which would have resulted from using Arup's proposed approach and over-recovery in CP4.

16.176 Network Rail argued that our proposal to retain CP4 rates for the capacity charge, while updating Schedule 8 rates in CP5 would, even with the proposed higher volume incentive rates, mean that Network Rail would have net financial incentives over CP5 to reduce traffic on some parts of the network. Because of the inconsistent net financial incentives for traffic growth across the network, Network Rail considered that there was a risk of undue discrimination in our proposal.

16.177 Network Rail also argued that fixing "the capacity charge regime at CP4 levels would mean that capacity charge tariffs would be around 20 years out of date by the end of CP5. Continuing with the CP4 regime would generate an array of anomalies and perverse outcomes." It stated that our proposals to retain CP4 capacity charge rates, uplifted for inflation, would reverse moves to increase the accuracy of charging and make the regime more cost reflective (by charging at the more disaggregate service code rather than service group) and that foregoing this greater accuracy could have detrimental impacts on passengers.

16.178 A number of respondents said that the charges regime (particularly capacity charge, Schedule 8, and volume incentive) needed to be "reviewed holistically" and "integrated in such a way as Network Rail is encouraged to optimise the use of the network and optimise growth"

16.179 Centro described the CP4 rates as "manifestly wrong" and the Passenger Transport Executives Group (PTEG) said "it would be inconceivable to continue with a set of

charges which, by virtue of aggregating congested and uncongested sections of the network, have over-charged the types of service subsidised by PTEs for years".

16.180 There was considerable support for the process of forming an industry view being undertaken by the RDG (discussed below) and for the principles expressed in the note of its conclusions. Some of the respondents (Network Rail, Abellio, ATOC, East Coast) endorsed the RDG's specific proposals in their responses.

16.181 The RFOA proposal for a freight wash-up, which forms part of the RDG proposal, had wide support, not only from the rail freight industry but also (in general terms) from DfT, FirstGroup and Network Rail. Freight operators, while unanimously supporting the proposal in general, differed slightly over its details such as the level of the baseline and whether the wash-up should be disaggregated by commodity. DB Schenker opposed our proposal (in the July 2013 letter) of overlaying the wash-up on a CP4 charge rate.

16.182 We have listened carefully to the points made by industry, and consider that our conclusions on the capacity charge have largely addressed their concerns.

Work on the capacity charge conducted since the draft determination

Independent review of the capacity charge recalibration

16.183 Following the completion of Arup and ICL's work to recalibrate the capacity charge, Network Rail, with our support, commissioned FTI Consulting to review the econometric analysis undertaken in the recalibration process, based on the dataset developed by Arup[353]. This review was intended to provide a critique of the approach adopted by Arup and ICL and a separate econometric analysis of the relationship between CRRD and CUI.

16.184 The conclusion of the FTI review was that there was evidence to suggest that the Arup/ICL proposed relationship between reactionary delay and CUI was conservative in that "the relationship used by Arup may be 'flatter' than the 'true' relationship". FTI gave as a possible explanation that the ICL models ignore the spill-over effect that CRRD in contiguous CTSs have on CRRD in one CTS. They were therefore likely to underestimate the total impact of capacity utilisation on CRRD. The implication of this is that the capacity charge rates estimated by Arup are, if anything, likely to be too low.

Seeking further views following the draft determination

16.185 Subsequent to our draft determination, the industry under the leadership of the RDG has carried out significant work on the capacity charge and we have had a number of detailed exchanges with RDG and the wider industry. These are as follows:

[353] *Review of econometric work underpinning the capacity charge*, FTI Consulting, September 2013. This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5-periodic-review/FTI-consulting-review-re-capacity-charge.pdf.

(a) on 19 July 2013 we published a consultative letter expanding on our draft determination with possible options for the capacity charge for both passenger and freight services[354];

(b) on 26 July 2013 we hosted an extended meeting of the Capacity Charge Working Group to discuss our draft determination and options for the capacity charge;

(c) we held a separate industry and funders meeting on 21 August 2013 at which representatives of RDG presented its proposal to us;

(d) we received RDG's proposal for passenger operators formally in a letter dated 28 August 2013, which also outlined a series of principles which it felt should underpin the decision on the capacity charge[355];

(e) on 13 September 2013 we received a proposal from the RDG freight group on implementing a form of the capacity charge for freight[356];

(f) on 24 September 2013, we wrote to the industry and RDG on the capacity charge for passenger operators[357];

(g) on 30 September 2013 the RDG wrote back to us in response to our 24 September 2013 letter on the capacity charge for passenger operators[358];

(h) we met members of the RDG freight group on 2 October 2013 to discuss their proposal for freight;

(i) on 8 October 2013 we issued a consultation letter setting out the ORR's proposed conclusions for the capacity charge for freight operators in CP5[359]; and

(j) on 15 October 2013 RDG and DB Schenker wrote to us in response to our 8 October 2013 letter on the capacity charge for freight operators[360].

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[354] ORR letter of 19 July 2013, *PR13: capacity charge and alternative RFOA proposal*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/orr-options-rfoa-proposal.pdf.

[355] RDG letter of 28 August 2013, *RDG's proposals on Schedule 8 / volume incentive / capacity charge for CP5*. This may be accessed at http://www.raildeliverygroup.com/assets/files/2013/09/LtrtoCRoss280813.pdf.

[356] RDG letter of 13 September 2013, *RDG Freight Group proposal for the capacity charge for Freight Operating Companies in CP5*. This may be accessed at http://www.raildeliverygroup.com/assets/files/2013/10/RDG%20Freight%20Group%20Proposal%20FOC%20CP5%20Capacity%20Charge_13%20Sept%202013.pdf.

[357] ORR letter of 24 September 2013, *Capacity charge for franchise and open access passenger for CP5*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/capacity-charge-for-franchise.pdf.

[358] RDG letter of 30 September 2013, *Capacity Charge for franchise and open access passenger for CP5*. This may be accessed at http://www.raildeliverygroup.com/assets/files/2013/10/RDGtoORR30Sep2013.pdf.

[359] ORR letter of 8 October 2013, *Capacity charge for freight operators for CP5*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/freight-capacity-charge-2013.pdf.

16.186 RDG, working on the capacity charge for passenger operators, set out a series of principles that it considered our decisions regarding the capacity charge should adhere to. They were:

(a) "There should be, as far as possible, a predictable and stable charging regime for all operators. This was considered particularly important for OA operators;

(b) Trains of a similar nature operating on the same parts of the network should have their various access charges set on a consistent basis;

(c) OA operators entered the market and based their business cases/ models on a reasonable expectation of predictable charges;

(d) The Arup CP5 proposed capacity charge rate increases for OA are very significant and a sustainable pace of transition is needed if they are not to become unaffordable for existing OA operators;

(e) There would be merit in 'special arrangements' for OA Capacity Charge in CP5; and

(f) That any OA Capacity Charge 'special arrangements' should be restricted to CP5 and clearly signalled as such in anticipation of an immediate review of charges for CP6."

16.187 We think that our engagement with RDG and the industry has been important, because it has enabled us to work with the industry to achieve a good outcome in terms of compensating Network Rail for accommodating additional traffic, while mitigating impacts on groups of individual operators. We will take lessons from this experience, including our interaction with the industry, and the experience of PR13 more widely, into account as we prepare the governance arrangements and work programme for PR18.

Our assessment of Network Rail's recalibration of the capacity charge

16.188 Network Rail and Arup carried out their review and recalibration of the capacity charge with extensive industry engagement, including a capacity charge working group. Through the working group, the methodology developed has been subject to extensive scrutiny. In addition to Arup's quality assurance[361], both Network Rail and we have conducted high-level sense checks of the calculations, and we have jointly

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[360] RDG letter of 15 October 2013, *Capacity charge for freight operators for CP5*. This may be accessed at: http://www.rail-reg.gov.uk/pr13/PDF/freight-capacity-charge-rdg.pdf.

DB Schenker letter of 15 October 2013, *Capacity charge for freight operators for CP5*. This may be accessed at: http://www.rail-reg.gov.uk/pr13/PDF/freight-capacity-charge-dbs.pdf.

[361] *CCR – Summary of Project QA Procedures*, Arup, 4 October 2013. This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/arup-summary-of-QA.pdf.

commissioned FTI Consulting to review the derived econometric relationship, the conclusion of which was that the capacity charge rates were conservative.

16.189 We recognise that the capacity charge is a contentious area for freight and open access operators. We do not accept the arguments they have made against the capacity charge and consider it is important to provide incentives for Network Rail and operators in relation to the making available of capacity and its use, particularly where there is congestion. However, we do recognise that the pattern of use of the network is now very different from when the capacity charge was introduced and we consider that further work is needed to establish whether for CP6 the charge is the best way fully to reflect changes to Network Rail's costs from the Schedule 8 performance regime. This further work will be carried out as part of the work on the structure of charges for PR18.

Anomalies

16.190 During the course of CP4, three potential anomalies in relation to the capacity charge price list were identified. We asked Network Rail to correct for any anomalies in its draft CP5 price lists published in July 2013[362].

16.191 First, charter operators have not been subject to the capacity charge in CP4. We address this issue in the section on charter operators in this chapter.

16.192 In the second case, it appeared that different operators using similar parts of the network with similar services had been subject to significantly different tariffs in CP4. This affected three operators: East Coast, First Hull Trains, and Grand Central. To address this anomaly, Network Rail recalculated the CP4 tariffs for Grand Central and First Hull Trains services by using the CP5 rates and applying the differential between the CP5 and CP4 rates for East Coast.

16.193 In the third case, during CP4 Network Rail had levied zero charges on some service codes relating to empty stock movements while non-zero charges on others. Following investigation, Network Rail concluded that these charges were not anomalous with the CP4 methodology, which set some charges to zero rather than have very low charges, in order to simplify billing. Under the Arup (CP5) methodology, however, no charges are rounded down to zero for reasons of administrative simplicity.

[362] *Draft CP5 price lists (consistent with ORR's draft determination*, Network Rail, July 2013. This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/. The cover note accompanying the price lists, which outlines the work under taken to address the anomalies, may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786915.

Our determination

Our decision

16.194 In our draft determination, we said that we would not implement the recalibrated capacity charges as part of PR13. Instead we said we would either implement an alternative proposal put forward by RFOA (possibly applying it also to open access passenger operators and/or franchised passenger operators) or approve capacity charge rates that have been calculated using the methodology established in CP4, uplifted for inflation.

16.195 In light of consultation responses and the extensive engagement with RDG and the wider industry that we have had over the summer, we have reconsidered our position. We are now of the view that it is important that our approach to the capacity charge is aligned with that of Schedule 8 because otherwise we think that the financial disincentives for Network Rail to accommodate additional demand on some routes might result in less efficient use of capacity. As we are updating Schedule 8 payment rates in CP5, we also think we should update the capacity charge rates so that they are reflective of the new Schedule 8 costs.

16.196 However, we have also assessed the impact of levying the full new CP5 capacity rates on the various different groups of operators and have considered whether, in accordance with our section 4 duties, we should mitigate this. This approach addresses our concerns in the draft determination that it would be undesirable for the charge to fluctuate significantly from one periodic review to the next from the perspective of industry investment and planning. We have set out our assessment of the impact of options in our published consultations listed in the previous section.

16.197 In the remainder of this section, we set out our conclusions for:

(a) franchised passenger operators;

(b) existing open access operators;

(c) new open access operators; and

(d) freight operators.

16.198 We set out our conclusions for charter operators in the charter operator section.

16.199 **Franchised passenger operators** will pay the new CP5 rates for both existing and new services. As franchised operators will be held harmless by the government for any increases in capacity charge for services specified in their franchise agreement and can factor any increase into their commercial arrangements with government for any new services, we do not consider that we need to mitigate the impact of the charge for them.

16.200 **Existing open access operators** will pay CP4 rates for their existing services (with any anomalies corrected) but will pay CP5 rates for any additional or new services. Implementing the full rates for existing open access services would equate to a real

term average increase of 450% in the capacity charge. Unlike franchised passenger services, these services would not have protection from such an increase from government. In light of this, when considering our statutory duties, in particular to promote the use of the railway network, to protect the interests of users of railway services and to promote competition in the provision of railway services, we think it is appropriate for these services to pay CP4 rates. However, we consider that existing open access operators could factor the new rates into their commercial plans for any new or additional services and therefore these will be subject to the CP5 rates.

16.201 **New entrant open access operators** will pay CP4 rates on services below a threshold (set to provide broadly equivalent treatment with existing open access operators) and CP5 rates above the threshold. This approach is to ensure that we are treating existing and new entrant open access operators in the same way, as required by European law and our section 4 duties.

16.202 We think these capacity charge decisions for passenger operators are consistent with the principles that RDG proposed should govern the capacity charge for CP5 for passenger operators. We have concluded that for CP5 open access operators require special arrangements in the form of full CP5 rates, in some cases, being mitigated to reflect the fact that, unlike franchised passenger operators, they do not have government protection from increases in the capacity charge. The mitigation that open access operators will receive both allows open access operators already providing services to continue doing so on a predictable basis and ensures that new open access operators are being treated in the same way.

16.203 **Freight Operators** – we have decided to adopt the "RDG proposal – no negative wash-up" that we set out in our letter to RDG dated 8 October 2013. We explain the reasons for our preference for this option in our letter. This means that:

(a) during the year, operators will pay the capacity charge for traffic based upon their actual mileage at a capacity charge rate set at £0.13 per train mile weekday;

(b) at the end of the year a reconciliation or wash-up will be carried out. For the purposes of the reconciliation there will be three commodity groups: coal and biomass, intermodal and other commodities;

(c) for the purposes of the reconciliation, each commodity group will have a baseline set using 2012-13 actual traffic levels for that commodity group;

(d) the reconciliation will determine the difference between the revenue Network Rail would have received if full CP5 rates were applied to the actual traffic for that commodity group for that year above the baseline and its actual capacity charge revenue from the commodity group across the year above the baseline. The amount of any excess will be apportioned to freight operators in proportion to their train mileage for the relevant commodity grouping; and

(e) the reconciliation will work so that where the traffic for the commodity group for that year corresponds to or is less than its 2012-13 level, the reconciliation will be zero.

16.204 Implementing the full CP5 rates would equate to a real term average increase of around 300% to 350% for the capacity charge for freight. In light of our statutory duties, we think it is appropriate to mitigate the impact of the full rates. In deciding on the form of mitigation, we have considered the overall impact of all our PR13 charging conclusions on freight operators and their customers and, in particular, have considered the mitigation we have concluded the freight sector requires in the application of the VUC and FSC. We factored into our decisions on the VUC and FSC an expectation that the capacity charge would recover £4m to £5m during CP5; we consider that for the package as a whole this is still appropriate. Therefore, rather than revisit the decision on the other charges which we think would be unhelpful at this late stage, we think it is appropriate to set the capacity charge in such a way that, in its mitigated form, it is expected to recover this amount. We think it is appropriate to disaggregate the cost reconciliations across three commodity groupings because this improves the incentives for Network Rail to accommodate additional demand.

16.205 In accordance with RDG's principles, our capacity charge decisions for passenger and freight operators ensures that there is a stable charging regime for all operators for CP5 whilst the review of the structure of charges is carried out. We will work closely with the industry, including RDG, in carrying out this review to conclude how, post CP5, charges should best reflect cost and incentivise efficient allocation, use and expansion of capacity.

Our estimates of forecast income from the capacity charge

16.206 Table 16.22 below shows our forecast of capacity charge income in CP5 from franchised and open access passenger operators, consistent with our decision. As outlined in the section on traffic forecasts in this chapter, the income forecast below is based on the traffic forecasts produced by Network Rail for its SBP, corrected for inconsistencies within the SBP.

Table 16.22: Our forecast of capacity charge income from passenger operators for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Franchised passenger	174.2	385.3	387.0	388.8	393.7	408.7	1,963.5
Open access passenger	1.1	1.2	1.2	1.2	1.3	1.3	6.2
England & Wales							
Franchised passenger	168.6	368.4	370.0	371.8	376.5	391.0	1,877.7
Open access passenger	1.1	1.2	1.2	1.2	1.3	1.3	6.2

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Scotland							
Franchised passenger	5.6	16.9	17.0	17.0	17.2	17.7	85.7
Open access passenger	0.0	0.0	0.0	0.0	0.0	0.0	0.0

16.207 For the purpose of our determination of Network Rail's funding, we have assumed the capacity charge income using freight traffic forecasts provided to us by Network Rail as part of its SBP. These forecasts of income are set out in Table 16.23.

Table 16.23: Our forecast of capacity charge income from freight operators for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Freight	4.3	4.2	4.8	5.9	6.7	7.6	29.3
England & Wales							
Freight	3.9	3.8	4.4	5.4	6.1	7.0	26.7
Scotland							
Freight	0.4	0.4	0.4	0.5	0.6	0.7	2.6

16.208 As explained in paragraph 16.64 onwards, however, we agree with Network Rail and freight operators that these forecasts of freight traffic are unrealistically high. As the capacity charge for freight in CP5 will work on the basis of a higher rate for traffic above a baseline, forecast income from the freight capacity charge is particularly sensitive to traffic forecast assumptions. For comparison purposes, therefore, in Table 16.24 we show capacity charge income calculated on a basis consistent with Network Rail's updated traffic forecasts, issued to us in June 2013 in preparation for its delivery plan.

Table 16.24: Our forecast of capacity charge income from freight operators for CP5 (using updated traffic growth forecasts)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Freight	4.1	3.3	3.5	3.7	3.9	4.2	18.6
England & Wales							
Freight	3.7	3.0	3.2	3.4	3.6	3.8	17.0
Scotland							
Freight	0.4	0.3	0.3	0.3	0.3	0.4	1.6

Charges for electric current for traction

16.209 Network Rail is the single biggest user of electricity in the UK. By the end of CP5, it expects consumption of electric current for traction (EC4T) on its network to have increased by around 25% on current levels. As discussed in chapter 6, Network Rail recovers the vast majority of its traction electricity costs from train operators who require electricity to run their electrified train services. These costs are recovered through the traction electricity charge.

16.210 At the start of CP4, all operators were charged for EC4T on the basis of modelled rates, which provided operators with weak incentives to manage their electricity consumption. This is changing. Currently, around 25% of EC4T is billed on basis of metered consumption, and we expect this to rise to around 50% by April 2015. In PR13, we are further supporting increases in electricity efficiency and reductions in CO_2 emissions by:

(a) refining the EC4T charging framework, which we worked with the industry to establish during CP4, in order to support expansion of on-train metering; and

(b) introducing financial incentives for the first time for Network Rail to manage transmission losses by exposing it to electricity volume risk through the volume wash-up.

16.211 Electric current for traction (EC4T) can take four key forms:

(a) electricity consumed by trains;

(b) electricity consumed for non-traction purposes by Network Rail or supplied by Network Rail to other parties (e.g. London Underground Ltd);

(c) electricity lost in transmission through the infrastructure (i.e. third rail or overhead line equipment); and

(d) electricity generated through trains' regenerative braking (to return the energy from braking to the electrification system).

16.212 In the next section we explain how electricity is charged in CP4. This forms the basis for the policy conclusions that follow, which need to be read with reference to this section.

16.213 After our description of CP4, the rest of our determination with respect to EC4T charges is structured as follows:

(a) Network Rail’s SBP forecast of income from EC4T;

(b) our assessment of Network Rail's SBP forecast;

(c) Network Rail’s conclusions on charges for EC4T;

(d) our consultation on EC4T charges and the responses we received;

(e) our draft determination;

(f) developments since our draft determination; and

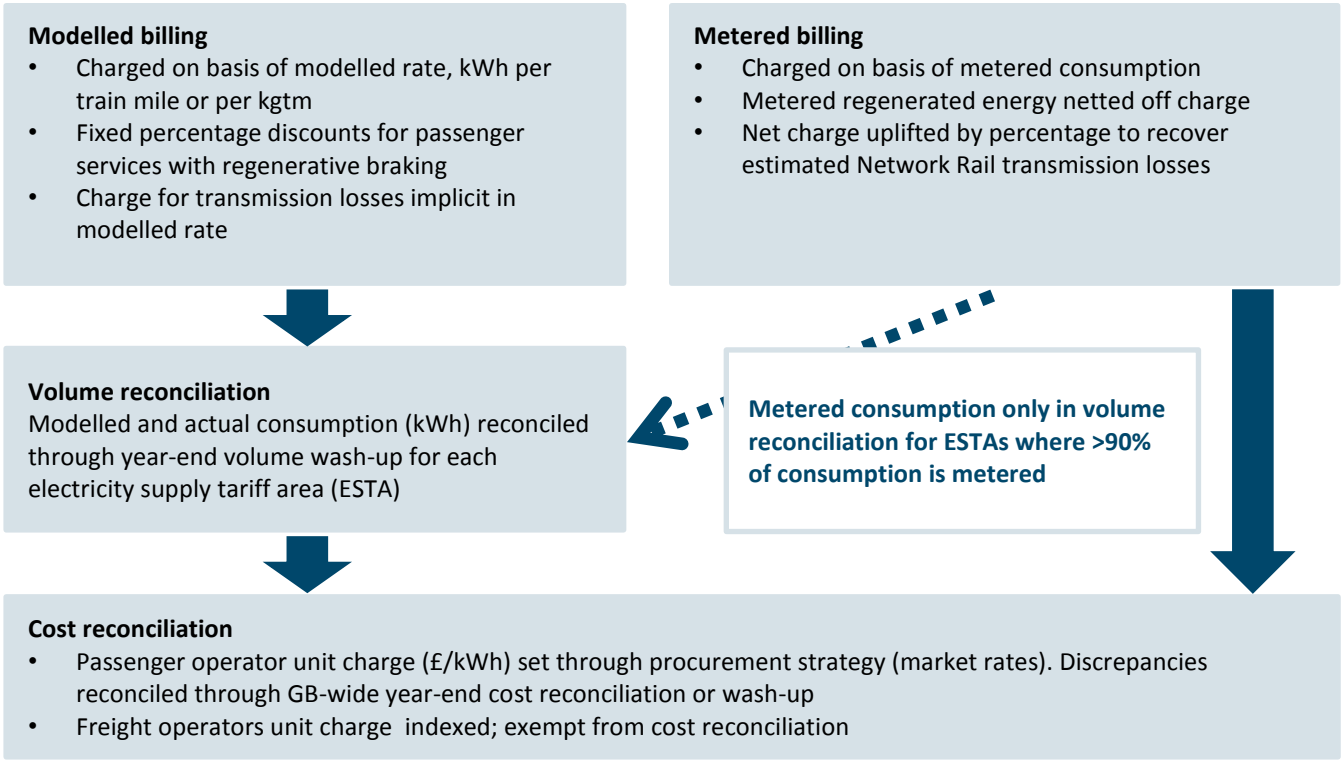
(g) our conclusion on charges for EC4T.

Calculating the charge in CP4

16.214 Currently around 25% of EC4T consumption is charged on the basis of consumption recorded by on-train meters (OTM). Metered regenerated energy has been netted off the energy charged. Operators pay an uplift on metered consumption net of regenerated energy to recover estimated transmission losses, referred to as the distribution systems loss factor (DSLF).

16.215 Until April 2010, all electrified train services were charged on the basis of modelled (i.e. unmetered) electricity consumption rates (taking the form of kWh per train mile or gross tonne mile), and around 75% of all EC4T is still charged in this way. Modelled services with regenerative braking have been charged at a discounted rate. Under this system, modelled and actual consumption have been reconciled through a year-end wash-up referred to as the volume wash-up. Transmission losses have been charged for implicitly through the modelled rate and volume wash-up; they have not been charged for explicitly. This volume wash-up reconciliation has occurred at the level of the electricity supply tariff area (ESTA). ESTAs are defined in Schedule 7 of the track access contracts. Network Rail's own consumption amounts to around 3% of all EC4T and is also subject to the volume wash-up. Figure 16.2 summarises the basis for charging for EC4T in CP4.

Figure 16.2: EC4T charging framework in CP4



16.216 Track access charges, including EC4T charges, are contractualised in Schedule 7 of the track access contract. For metered operators, this is supplemented by the EC4T Metering Rules[363], which apply to all services billed through OTM. Currently, the EC4T Metering Rules can be amended through an industry-led change process subject to consultation, majority endorsement and our consent[364].

16.217 There are industry processes for procuring electricity. The reconciliation of electricity prices (i.e. £ per kWh), referred to as the cost reconciliation, is included in the track access contract and therefore falls within scope of PR13.

Network Rail's SBP forecast of income from EC4T

16.218 In its SBP, Network Rail made a number of forecasts in order to estimate the level of future income from the traction electricity charge. Network Rail's key forecasts included:

(a) using market projections of the electricity price for 2014-15 and 2011 DECC projections for each year of CP5 thereafter;

(b) estimating future electric traffic km by using actual 2011-12 data and making growth assumptions based on forecast increased electric traffic; and

(c) estimating the future rate of electricity consumption based on actual 2011-12 data.

16.219 Given these supporting forecasts, Network Rail projected traction electricity charges in the first year of CP5 of £239m rising to £575m in the final year of CP5. This increase was largely due to a forecast increase in electricity prices[365] and an increase in the size of the electrified network. Network Rail used 2011-12 traffic and electricity consumption data from its track access billing system (TABS) and applied a series of adjustments before applying the forecast electricity cost per kWh to forecast traffic to produce electric traction cost forecasts by route. Table 16.25 shows Network Rail's income estimate.

[363] *On-train metering,* Network Rail. This may be accessed at http://www.networkrail.co.uk/using-our-network/on-train-metering/.

[364] ORR also has the right to make amendments without majority endorsement, subject to consultation.

[365] See pages 54 and 55 respectively in *Strategic Business Plan for England Wales* and *Strategic Business Plan for Scotland*, Network Rail, January 2013. These may be accessed at http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/.

Table 16.25: Network Rail's SBP forecast traction electricity charge income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Franchised passenger	221.3	229.3	446.1	459.2	495.1	551.0	2,180.7
Freight	5.7	6.2	12.7	13.9	15.1	16.2	64.1
Open access passenger	3.6	3.7	7.1	7.2	7.3	7.3	32.6
England & Wales							
Franchised passenger	208.1	215.0	414.5	427.0	462.0	516.7	2,036.2
Freight	5.2	5.7	11.6	12.7	13.8	14.8	58.6
Open access passenger	3.6	3.7	7.1	7.2	7.3	7.3	32.6
Scotland							
Franchised passenger	13.3	14.4	31.6	32.2	33.0	34.3	145.5
Freight	0.5	0.5	1.1	1.2	1.3	1.4	5.5
Open access passenger	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: numbers may not reconcile due to rounding.

16.220 There is significant uncertainty in forecast future energy prices and hence this could impact the actual income level. If Network Rail's actual expenditure changes (due to changes in energy prices or indeed other factors) then under the charging arrangements, this will be reflected directly in the charge levels. For example, if Network Rail's electricity costs fall then charges paid by operators will reduce by a commensurate amount, and the converse will apply if electricity costs rise. Network Rail's is largely unaffected if actual income is ultimately different from the level that we determine. In terms of Network Rail's own use of traction electricity, it will gain or lose if electricity costs in CP5 are lower or higher than we have assumed in our determination.

Our assessment of Network Rail's SBP forecast

16.221 We are content with the general approach taken by Network Rail in calculating EC4T charges income. However, its forecast costs and charges are underpinned by DECC projections from 2011. For the final determination, we have used the most recent DECC forecast, dated September 2013.

16.222 On the basis of these updated DECC projections, Table 16.26 shows our determination for traction electricity charges income. These differ from those shown in our draft determination because we have used updated DECC projections. The increase from CP4 is due to higher forecast electricity prices (though lower than that used in the Network Rail SBP) and increased levels of electrified traffic mileage (consistent with Network Rail's SBP).

Table 16.26: Our forecast traction electricity charge income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Franchised passenger	221.2	228.8	315.5	333.4	365.8	426.4	1,670.0
Freight	5.7	6.2	9.0	10.1	11.2	12.6	49.0
Open access passenger	3.6	3.7	5.0	5.2	5.4	5.6	25.0
England & Wales							
Franchised passenger	207.9	214.5	293.2	310.0	341.4	399.9	1,558.9
Freight	5.2	5.7	8.2	9.2	10.2	11.5	44.7
Open access passenger	3.6	3.7	5.0	5.2	5.4	5.6	25.0
Scotland							
Franchised passenger	13.3	14.3	22.3	23.4	24.4	26.5	111.0
Freight	0.5	0.5	0.8	0.9	1.0	1.1	4.2
Open access passenger	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: numbers may not reconcile due to rounding.

Network Rail's conclusions on charges for EC4T

16.223 As part of its PR13 work on setting charges, in September 2012, Network Rail published a consultation on traction electricity & electrification asset usage charges (which covered AC losses) and in November 2012 it published another consultation which covered DC losses[366]. Network Rail published its conclusions on these consultations in February 2013[367]. It concluded:

(a) to retain CP4 modelled consumption rates for all operators;

(b) to make metered billing mandatory for all new electric rolling stock;

(c) to discontinue the Transitional Risk Sharing Mechanism (TRSM);

(d) to retain the CP4 regenerative braking discounts for modelled operators;

(e) to introduce provisions to the EC4T Metering Rules to allow Network Rail to verify that regenerative braking is being used correctly;

(f) to charge freight operators on the basis of the actual electricity costs rather than a price index;

[366] *Network Rail consultation on charging for losses and regenerative braking for metered operators on the dc network*, Network Rail, November 2012. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784066.

[367] *Traction Electricity and Electrification Asset Usage Charges in CP5 – Conclusions of Network Rail's Consultation*, Network Rail, February 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784907.

(g) to change the cost wash-up formula to better reflect tariff structure including the EC4T delivery charge; and

(h) to move the volume and cost year-end wash-ups and definitions of ESTAs from Schedule 7 to the EC4T Metering Rules, which would be renamed the 'Traction Electricity Rules' (TER).

16.224 Network Rail also concluded on a number of items which we wished to consult on further as part of our April 2013 consultation on EC4T, in particular in relation to the DSLF (the transmission losses uplift). We set these out in the next section.

Our consultation on EC4T charges and the responses we received

16.225 We issued a consultation on EC4T in April 2013[368]. We consulted on aspects relating to the charges for transmission losses, on which Network Rail had previously consulted. We also consulted on changes to the volume wash-up. We explained that we had decided not to require an uplift to be levied on modelled rates to incentivise metering. We concluded on this consultation as part of the draft determination.

16.226 A number of stakeholders supported our proposition to fix the DSLF for the whole of CP5 though subject to some form of re-opener during the period if new and material evidence emerged. There was a mixed response to our proposal that ORR, rather than industry, should set the value of the DSLF. Although it was inconsistent with Network Rail's conclusions, there was strong support among operators for our proposals to set the DSLF by ESTA. Stakeholders, including Network Rail, were supportive of our proposal that Network Rail charge for transmission losses so that the DSLF is applied to gross metered consumption, and not net of metered regenerative braking.

16.227 In CP4, metered operators have been excluded from the year-end volume reconciliation where less than 90% of an ESTA has been metered. We proposed to entirely exclude metered operators from the volume wash-up even when metering exceeded 90% in an ESTA. This was broadly supported by stakeholders.

16.228 There was strong support from a majority of stakeholders for our proposal to expose Network Rail to a greater share of the volume wash-up.

16.229 There were a wide variety of views offered on our proposals on the way in which partially metered fleets (PFM) should be charged and the extent to which they should be exposed to the volume wash-up. For example, some respondents questioned our suggested formula/approach for allocating the volume wash-up to services with PFM. Network Rail questioned the appropriateness of PFM as a whole.

[368] ORR letter of 10 April 2013, *PR13: consultation on electricity for traction charges for control period 5 (CP5)*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/ec4t-consultation-apr-2013.pdf.

Our draft determination

16.230 Following our consideration of the responses to our April 2013 consultation on EC4T, in our draft determination we accepted most of Network Rail's February 2013 conclusions.

16.231 We did however make a number of changes with respect to the basis for charging for transmission losses for metered consumption. In particular we concluded that:

(a) the DSLF should be applied to gross metered consumption rather than metered consumption net of regenerative braking;

(b) the DSLF should be set by ESTA (differentiating between AC and DC for mixed ESTAs);

(c) the ability to change a DSLF outside a periodic review should be restricted, with scope for amendments to be made by ORR within our existing right to modify the rules; and

(d) the change process in the EC4T Metering Rules relating to the definitions of each ESTA should be modified to give modelled train operators the same rights as metered operators.

16.232 We also confirmed and specified our earlier conclusion on exposing Network Rail to the year-end volume reconciliation. In addition, we set out how we would expect any partially metered fleet to share the volume reconciliation, and treatment of Network Rail's own consumption of EC4T.

Developments since our draft determination

Consultation responses

16.233 A number of operators expressed concern that there appeared to be no funding mechanisms to reduce EC4T consumption in CP5, and that this did not support the industry target to reduce CO_2 emissions by the end of CP5. Go-Ahead argued for the Safety & Environment (S&E) fund to be rolled over to CP5 to maximise opportunities for further metering. We have subsequently engaged extensively with ATOC, Network Rail and operators on this.

16.234 ATOC and many of the operators commented on Network Rail's incentives associated with the volume wash-up. For example, they argued that the incentives were too weak, or may not work. Some operators argued that Network Rail, rather than operators, should pay for transmission losses.

16.235 ATOC, First Capital Connect, East Coast, South West Trains and Go-Ahead argued that there should be an adjustment to modelled consumption rates so that the change whereby Network Rail shared the volume wash-up did not result in a windfall for Network Rail. Respondents particularly focused on ESTA U, the large DC third rail ESTA, for which adjustments to DC modelled rate could readily be made.

16.236 Several respondents made comments on PFM. Several TOCs asked for more certainty in the final determination with respect to whether such fleet would share the volume wash-up. Other TOCs thought that the industry should make proposals for allocation of the volume wash-up through the Traction Electricity Rules (TER). Freightliner supported the implementation of PFM in the ESTA U but expressed concerns about the resulting complexity to billing and the associated IT development cost for AC.

16.237 We address these points in our conclusions below.

The fund for on-train metering

16.238 In PR08 we concluded that Network Rail could carry forward around £8.75m from its CP3 safety and environment fund (S&E fund) to fund on-train metering. We made it clear that the fund would not be rolled over into subsequent control periods and confirmed in our April 2012 framework document that we had no plans to extend this funding for on train metering beyond 1 April 2014[369]. As of April 2013, only around £1m of the fund had been used to facilitate on train metering.

16.239 In 2013 there has been considerable interest among operators in using the fund to invest in on train metering, but some operators are unable to complete the meter fitment in full in CP4. As of October 2013, our understanding is that operators have requested a £5.6m funding for CP4, over and above the amount already funded, and £3.6m funding for CP5.

16.240 ATOC and operators have made a strong case to Network Rail and to us for a limited extension, to allow for the completion of various operators' programmes of metering which are already well advanced and will commence in CP4. We understand that Network Rail has been seeking to secure such funding for CP5 with DfT.

Consultations on contractual wording

16.241 We have consulted on EC4T extensively in the context of our consultations on contractual wording. We jointly consulted with Network Rail on treatment of the cost reconciliation provision on 2 October 2013[370]. We consulted on all other proposed changes to other contractual wording relating to charges for EC4T as part of our July 2013 implementation consultation.

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[369] See paragraph 5.109 of *Setting the financial and incentive framework for Network Rail in CP5*, Office of Rail Regulation, May 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/publications/financial-incentives.php.

[370] *Periodic review 2013: consultation on implementing the EC4T cost reconciliation*, ORR and Network Rail, October 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/consultations/implementing-ec4t-cost-reconciliation.php.

Our conclusion on charges for EC4T

16.242 Our conclusions are summarised in Table 16.27 and set out below. These changes are directed at supporting increases in electricity efficiency and reductions in CO_2 emissions by:

(a) refining the EC4T charging framework in order to support expansion of on-train metering (and potentially partially metered fleet); and

(b) introducing financial incentives for the first time for Network Rail to manage transmission losses by exposing it to electricity volume risk through the volume wash-up.

Table 16.27: Summary of our conclusions on the charging framework for EC4T

Paragraph	Our determination	Consistent with	
		Network Rail's conclusions	Draft determination
16.243	Moving the volume and cost year-end wash-ups and definitions of ESTAs from Schedule 7 to the EC4T Metering Rules[371], which would be renamed the 'Traction Electricity Rules' (TER).	✓	✓
16.249 & 16.265	With the exception of ESTAs established during CP5, DSLFs for existing ESTAs will be set for CP5, with only ORR retaining the flexibility to propose changes to these.	N/A	Some changes
16.252	Discounts for regenerative braking for modelled services will not change from those in CP4.	✓	✓
16.252	Audit provisions to enable verification that regenerative braking is being used correctly.	✓	✓
16.254	Metered services will be exempted from the volume wash-up. The Transitional Risk Sharing Mechanism (TRSM)[372], intended to apply for CP4 only, will not apply in CP5.	✓	✓
16.257	Network Rail share volume reconciliation to reflect its ability to manage transmission losses.	×	✓
16.263	Freight operators being charged on basis of actual electricity costs rather than a price index.	✓	✓

[371] Further information on the EC4T Metering Rules can be found here http://www.networkrail.co.uk/using-our-network/on-train-metering/

[372] This temporary mechanism was introduced in CP4 to offer protection to modelled operators who were concerned about the impact of OTM on their modelled bills.

Paragraph	Our determination	Consistent with	
		Network Rail's conclusions	Draft determination
16.263	Contractual provisions for EC4T procurement strategy to move from track access contracts to the Traction Electricity Rules.	N/A	N/A. Consulted on in July 2013
16.264	Change to cost reconciliation to better reflect tariff structure including EC4T delivery charges.	✓	✓
16.265	DSLF set for each ESTA individually, rather than network wide.	×	✓
16.266	Metered operators charged for transmission losses as an uplift on gross metered consumption, and not consumption net of metered regenerative braking.	×	✓
16.269	Rollover of some funding for OTM into CP5.	×	×
16.282	Modelled consumption rates (other than potentially rates charged through partial fleet metering) will not change for CP5.	✓	✓
16.290	Confirm share of wash-up for 30% partially metered fleet, with scope for industry to make case for lower share.	N/A	Some changes

The Traction Electricity Rules and change process within the rules

16.243 We confirm that, on 1 April 2014, the EC4T Metering Rules will be replaced by the Traction Electricity Rules (TER). The TER will incorporate a number of changes from the existing EC4T Metering Rules, including the following which we discuss below:

(a) incorporating the provisions for year-end volume reconciliation and cost reconciliation;

(b) incorporating the descriptions of the ESTAs;

(c) modifying the rules change provision, including in respect of the DSLF and ESTA boundary changes; and

(d) incorporating provisions relating to discounts on passenger services' modelled rates for regenerative braking.

This approach means that all the multilateral elements pertaining to traction electricity charges are contained in one multilateral document. We consider that this will reduce the administrative burden of the same provisions being in many contract and the process associated with amending them.

16.244 The TER will incorporate the provisions for year-end volume reconciliation and cost reconciliation. These are multilateral provisions and therefore are better suited to the multilateral TER than in Schedule 7 of bilateral track access contracts.

16.245 Similarly, we confirm that the definition of ESTAs will move from Schedule 7 of each track access contract to the TER. This will provide a much more efficient way to amend ESTAs during control periods (e.g. where electrification takes place), using a change mechanism within the TER.

16.246 However, we are aware it has been suggested that changes to ESTAs should instead be treated as a network change under Part G of the Network Code. We consider that, as contractual changes, the process for amending definitions sits better in the TER (along with the ability to amend the DSLF) – not least because ESTA definitions relate primarily to charging, which is a contractual matter. We are discussing this further with industry parties ahead of implementation. At the same time, we are discussing and refining the change mechanism within the TER for changes to ESTA boundaries.

16.247 Our presumption will be that major new pieces of electrified infrastructure will be established as one or more new ESTAs for CP5 (with ESTA definitions revisited as part of PR18), unless there are sound engineering or practical reasons to conclude otherwise. We are asking Network Rail to improve its evidence on transmission losses associated with regenerative braking, to inform the setting of the DSLF for any new ESTA created in CP5 and for PR18.

16.248 In our April 2013 consultation, we proposed amending the TER so that any decision to amend the AC and DC DSLF for metered operators would be restricted to ORR, and take place as part of an access charges review. We received a wide variety of responses on this point. There was some support, for example from ATOC, for retaining the current or similar change provision (so that in principle the DSLF could be changed through a majority-endorsed proposal). While several respondents supported retaining the same DSLF for the entire control period, others argued strongly for one or more reopeners in various forms.

16.249 The calculation of the DSLF is highly complex and requires an impartial examination of the evidence, and we conclude that this is best achieved for existing ESTAs through ORR taking forward such amendments. We will do this in accordance with our existing right to modify the rules (set out in the rules at paragraph 11.21 and following).

16.250 In terms of how we will implement this, we have decided that:

(a) train operators should be prevented from being able to propose amendments to DSLFs, through a restriction in the TER; and

(b) Network Rail should not propose amendments to DSLFs established for existing ESTAs through this determination. However, we recognise that with the advent of new ESTAs, it is may be desirable for it to be able to propose DSLFs for new

ESTAs established during CP5 (underpinned by robust evidence) at the same time that it proposes a definition for each ESTA. We are mindful that a contractual prohibition on Network Rail proposing changes to DSLFs may lead to a less efficient process for the establishment of new ESTAs. We are considering the detail of how this process might best work as we finalise the TER ahead of the implementation of PR13.

16.251 For clarity, should we conclude that we should not impose a contractual restriction on Network Rail proposing DSLF changes, we confirm as a principle that if Network Rail were to propose changes to DSLFs for pre-existing ESTAs, we would expect to refuse to consent to these; only ORR should take forward changes to these DSLFs. We consider that this reduces uncertainty (by removing the possibility of a succession of operator or Network Rail-led proposals to change the DSLF in individual or all ESTAs), thereby promoting metered billing. This adds greater certainty compared to the CP4 position, while retaining some flexibility, thus addressing some of the concerns that stakeholders raised.

Regenerative braking discounts

16.252 In CP4, passenger operators have been able to apply for discounts on their modelled rates in return for using regenerative braking. There were generic provisions in Schedule 7 to provide for this. For CP5, we are changing these arrangements so that the provisions for applying these discounts are included in the TER. The new provisions will make the process much clearer, as well as enabling greater transparency of the discounts that are in place along with the ability for regenerative braking systems to be audited to give assurance that the discounts being claimed are warranted (consistent with Network Rail's February 2013 conclusions). We confirm that the CP4 regenerative braking discounts for modelled operators will be retained for CP5.

16.253 There are currently no equivalent provisions for freight operators and no mainline registered locomotives used for freight services have an enabled regenerative braking capability. As the provisions for regenerative braking discounts will sit within the TER, should it become technically possible and worthwhile to implement regenerative braking for freight services, the industry would be able to propose a change to the TER to enable an appropriate discount factor for freight services to be applied. Otherwise, this is something that could be reviewed at the next periodic review.

Volume reconciliation

16.254 We confirm that metered services will be exempt from the volume wash-up even in ESTAs where more than 90% of consumption is metered. There was broad support for this proposal. We consider that this reform could help to support business cases for OTM. We are making this change in tandem with the allocation to Network Rail of a share of the volume wash-up, noting that this latter change mitigates the risk to

modelled operators of the DSLF being set too low. We also confirm that the TRSM, introduced for CP4 only, will not be continued in CP5.

16.255 In CP4, Network Rail's consumption and that of third parties has not been reflected explicitly in the volume reconciliation, though in practice Network Rail has treated such modelled consumption on a consistent basis to other modelled consumption in the reconciliation. We are now contractualising these forms of consumption explicitly in the volume reconciliation provision.

16.256 Network Rail has metered much of its own consumption during CP4. But its accountability with respect to its metered consumption is not yet comparable to that of services with OTM billing, even recognising that its consumption is on a smaller scale. We are therefore on an interim basis changing the contractual formulation so that all of Network Rail's consumption is included in the volume wash-up (comparable to modelled services). When provisions have been added to the TER that put Network Rail's metered consumption on an equivalent footing to that of metered services, we will approve its removal from the volume wash-up (reflecting that we have consulted on this basis and received wide support from the industry). We expect that, under Network Rail's leadership, this can be achieved before April 2015 (in time for the 2014-15 volume reconciliation), so that in practice Network Rail's metered consumption is exempted from the volume wash-up for the whole of CP5.

16.257 We conclude, however, that entirely independently of its own consumption, Network Rail will have an additional allocation of the volume reconciliation in each ESTA. In particular, the additional allocation will reflect the proportion of costs for which it has control through its management of transmission losses.

16.258 This reform is important because it means that we have ceased to treat the transmission losses arising from EC4T consumption associated with operators or third parties as a non-controllable cost, and Network Rail will be financially incentivised for the first time to look to improve the efficiency of these costs. We think that it continues to be appropriate for operators to pay for transmission losses, because these are largely incurred as a result of running trains; but that the risk associated with the size of these losses is shared with Network Rail.

16.259 The change also serves to share risk associated with errors in the estimation of transmission losses between modelled services and Network Rail.

16.260 This proposal had widespread support from operators in response to our April 2013 consultation. We understand Network Rail's concerns with this reform, particularly around the reduced incentive properties with respect to OTM. However, we consider that these risks are outweighed by the benefits such as increased focus on managing electricity consumption (including that of third parties) and transmission losses, greater certainty for metered operators and mitigated risk for modelled operators.

16.261 We take the proportion of costs for which Network Rail has control to be equal to the total estimated level of losses in each ESTA (which is the total consumption, gross of

losses x DSLF / {1+DSLF}), and we have proposed changes to the volume reconciliation formula that mean that Network Rail's share of the volume reconciliation is approximately this amount when all services are modelled (rising to 100% when all services are metered). This formulation, as a function of the DSLF, would apply for the whole of CP5. This is a pragmatic proposal, reflecting the difficulty in calibrating the incentives in the context where most of the electricity consumed is not metered.

16.262 We note that some operators have argued that Network Rail should have a greater exposure to transmission losses, thereby strengthening its incentives. In ESTAs where most EC4T is metered, Network Rail will gain financially from the reductions in transmission losses that its own actions deliver. Therefore we consider Network Rail to be incentivised effectively in ESTAs with high levels of metering. Even in ESTAs with low levels of metering, Network Rail will be incentivised to conserve electricity where it can readily do so, whereas in CP4 it had no such incentive.

Electricity procurement and cost reconciliation

16.263 We confirm Network Rail's conclusions that freight operators be charged on the basis of actual electricity costs rather than an index, thereby improving the cost-reflectivity of the charge for freight services and bringing them into line with passenger services. Complementary to this, in July 2013 we consulted on contractual wording concerning the process by which Network Rail engages with freight operators in order to prepare its EC4T procurement strategy, mirroring existing wording in the passenger contract. We also sought views from all parties on moving these provisions from bilateral Schedule 7s to the TER. There were no objections to this and we plan to make this change. This will enable the contractual arrangements relating to the procurement strategy process to be amended more easily by the industry, should it be appropriate to do so.

16.264 We also confirm Network Rail's conclusions that the cost reconciliation in the TER be changed to better reflect tariff structure, in particular to reflect the geographical differences of charges[373].

Metered consumption

16.265 We confirm that we will set the DSLF as part of PR13 by ESTA (differentiating between AC and DC). Network Rail had argued for a single AC DSLF network wide, on the basis that estimates by ESTA were not sufficiently robust for billing purposes. Our understanding is the differences in estimates by ESTA are based on sound engineering rationale (rather than measurement error), and therefore disaggregated rates should inherently be more cost-reflective than a single aggregate rate. We do

[373] *We consulted jointly with Network Rail on the contractual wording to effect these changes on 2 October 2013.* This consultation may be accessed at: http://www.rail-reg.gov.uk/pr13/consultations/implementing-ec4t-cost-reconciliation.php.

not think that this introduces billing complexity over and above that inherent in electricity prices.

16.266 We confirm that we will approve changes to the TER so that the DSLF is applied with respect to the gross metered consumption, rather than metered consumption net of metered regenerative braking, as it is currently. Our original proposal was widely endorsed in consultation responses. This change in approach better reflects the interaction between regenerated energy and electrical losses.

16.267 We are setting the DSLF on the basis of Network Rail's median estimates in its February 2013 conclusions, as shown in Table 16.28. The definition of ESTAs to which this table applies was set out in Annex B of our April 2013 consultation[374].

Table 16.28: ORR approved DSLF, for application from 1 April 2014

ESTA letters	ORR confirmed DSLF (to be applied on gross metered consumption)
AC system	
D, F	4.89%
A, B, C, E, I, J, N, S	4.23%
G, H, Q, V	3.86%
O, P, R	3.21%
T	3.41%
DC system	
M	11.56%
P, R, T, U	17.01%

Note: the ESTAs are as defined in Annex B of our April 2013 consultation on electricity for traction charges.

Funding on-train metered billing

16.268 We agree with responses made to our draft determination that argued for a limited rollover of funds to CP5 for the purpose of funding on train metered billing that is already well developed.

16.269 We therefore confirm our support for such funding in the first year of CP5 (to 1 April 2015). We understand that Network Rail is seeking to secure such arrangements with DfT, but these arrangements are not yet finalised. We are keen to avoid a hiatus in operators' progression to meter fitment and billing. Hence, we confirm that Network Rail will have the funding available as part of PR13. This funding will be for completion of on-train metering, for the purpose of billing, for those vehicles for which ATOC / Network Rail have already received expressions of interest from the relevant

[374] We used slightly different definitions in our July 2013 implementation consultation, and Network Rail will be consulting on some changes to the ESTA definitions, notably with respect to ESTA J, which is affected by electrification.

operators, under the current process and governance arrangements, provided that the relevant operator makes the investment within the first year of CP5. This CP5 funding is for up to £5m.

Modelled consumption

16.270 Network Rail consulted on retaining CP4 modelled rates (kWh per vehicle mile or per kgtm) in September 2012, and confirmed its conclusions in Feb 2013. In responses to our draft determination, operators argued for adjustments to the modelled rates to prevent the apparent risk of Network Rail gaining a windfall from our conclusion that it share a proportion of the volume wash-up.

16.271 We know that the modelled rates are a highly imperfect proxy for electricity consumption, not only because the year-end wash-up for individual ESTAs with unmetered services can be large, but also because the size of the wash-up can vary substantially, as a proportion of total consumption, year by year. For example, between 2009-10 and 2012-13, the wash-up in ESTAs with negligible metered billing has varied from -12.0% to -4.6% (ESTA A) to -15.8% to -8.5% (ESTA U, the DC ESTA) and 0.4% to -6.0% (ESTA M). ESTAs with a high proportion of metered billing have seen larger fluctuations in the wash-up, in part reflecting errors in the setting of the DSLF which our determination should address.

16.272 That metered billing addresses this issue is one of its key advantages. However, we are content with Network Rail's conclusion, supported by operators at the time they were consulted on this, not to change the modelled rates: we think that the focus of analytical work should be on enabling metered billing and improving its cost reflectivity.

16.273 Operators have argued that the modelled rates are shown to be wrong, on the basis of the size of recent volume wash-ups, and would result in a windfall gain to Network Rail.

16.274 Although it is clear that the modelled rates are inaccurate, and too high overall, it is less clear how they could be improved through a simple adjustment, not only because the wash-up is highly volatile but because the substantial programme of metering that is now ongoing means that the average error associated with modelled rates may well change significantly during CP5, not least as a result of PFM. For example, while recognising that there are a number of reasons whereby operators opt-in particular fleets for metered billing, we would expect operators to prioritise those fleets that are over-charged using modelled rates for metered billing, while not opting-in those fleets that are undercharged using modelled rates for metered billing.

16.275 We have undertaken analysis to test the financial impact of these changes on Network Rail and on operators. Aside from changes in behaviour to increase energy efficiency prompted by changes to incentives, the financial impact for Network Rail will take the form of:

(a) errors in modelled rates. In particular if modelled rates are too high, and they are not offset by other effects, there will be windfall gains for Network Rail because it will share the volume reconciliation; and

(b) errors in the estimation of DSLF. In particular, if the DSLF for a particular ESTA is too low, and they are not offset by other effects, there will be windfall losses for Network Rail and modelled services.

16.276 While the estimation of DSLF is much improved relative to the time when the EC4T Metering Rules were established, considerable uncertainty in their estimation remains. When setting the DSLF, we think it is important to be deliberately conservative within the range of uncertainty (i.e. setting the DSLF at the lower end of the possible range), because to do otherwise would risk disincentivising metering and in our view be perverse.

16.277 A consequence of exempting metered services from the volume reconciliation is that there are associated financial risks for Network Rail and modelled services. These risks are accentuated as metered billing increases, as we expect to be the case in ESTA U where the potential error associated with the DSLF is particularly high (because transmission losses in DC ESTAs are less well understood).

16.278 Overall, our assessment is that the financial impact for Network Rail may potentially be positive or negative (and hence a windfall for Network Rail or operators respectively). We outline potential impacts for DC and AC below.

16.279 For DC ESTA U, under current levels of metering, operators could see an increase in their EC4T bill of up to 1.3% as a result of sharing the volume wash-up with Network Rail (around £1.2m in 2014-15). When the committed programmes of metering billing are taken into account, however, this change may result in a decrease (or increase) in EC4T bills (as the wash-up may become negative as a result of, for example, under estimating the DSLF).

16.280 In AC ESTAs with negligible metering occurring during CP5, Network Rail sharing the volume wash-up would result in on average a 0.3% increase in the EC4T bill for modelled operators (calculated by taking the product of 3%, Network Rail's approximate share of the wash-up, and 10%, the size of the wash-up). For ESTAs with a high level of metering, statistically we would expect the volume wash-up to be close to zero, but negative, with a small associated cost to Network Rail.

16.281 For modelled operators, the risk associated with the DSLF being set too low is mitigated first by their ability to opt in for metered billing, and second through sharing the volume wash-up with Network Rail.

16.282 On this basis, we confirm that we are content with Network Rail's conclusion to retain the CP4 modelled rates into CP5.

Partial fleet metering (PFM)

16.283 We then needed to consider the issue of partial fleet metering.

16.284 The industry has investigated some of the implications of metering only a sample of a train fleet with the aim of reducing the costs associated with OTM. Under this system, the consumption from the services that were not metered would be billed by an equivalent amount to those metered. We refer to this proposed system of billing as partial fleet metering (PFM).

16.285 We have asked the industry to devise the contractual framework for PFM, and are pleased that some progress has been made. But we will still have to approve the contractual framework, and as part of that approval, we will approve a share of the volume reconciliation (wash-up) for PFM within the TER.

16.286 In our April 2013 consultation we set out a particular formulation that would meet these criteria. The formulation took the form of a share of the volume reconciliation as a function of the proportion of the fleet that were metered. We said that we would be open to considering other formulations. ATOC in its response stated that it endorsed the conclusion from analysis of metered data undertaken by Birmingham University that 30% fleet metering should be seen as the level necessary to achieve a reasonable degree of accuracy for energy usage (this was an ATOC-commissioned study shared with the industry on the statistical validity of partial fleet metering). It said that incentives should be built around achieving this level of PFM.

16.287 In response to our draft determination, some operators argued that the industry should propose how partially metered fleet should share the wash-up. We are content with this proposal.

16.288 We recognise that PFM should be a substantial improvement on current modelled rates. It is also less accurate and may have weaker incentives towards energy efficiency than metered billing. Reflecting this, we are concluding that:

(a) PFM at a level that produces an estimate to a high level of accuracy should have substantially reduced exposure to the volume wash-up; and

(b) the incentives to meter all services (for example for new rolling stock) should not be undermined, and therefore full metering should have less exposure to the volume wash-up than PFM.

16.289 We agree that it makes sense to consider incentives with respect to 30% fleet metering (though, perhaps because of differences in the heterogeneity and scale of services, that may not be an appropriate level of fleet metering in all cases). In our April 2013 proposed formulation, with 30% of the fleet metered, the share of the wash-up would be 24% of that which it would be for equivalent wholly modelled services (i.e. a service with no meters). We confirm that we think that this achieves the right balance of reduced risk exposure for 30% fleet metering. We are not concluding on a particular formula, by which we mean how the share of the wash-up should vary as the proportion of the proportion of fleet metered, as part of PR13.

16.290 Consistent with this, and to give the industry greater certainty in development of PFM, we conclude that the share of the wash-up in the case where 30% of the sample is metered would be at most 24% of that which it would be for equivalent wholly modelled services.

Electrification asset usage charge

16.291 The electrification asset usage charge (EAUC) recovers the maintenance and renewal costs of electrification assets that vary with traffic. It is a separate charge to that of the VUC because it is only levied on services using electricity for traction.

16.292 Network Rail's electrification assets comprise the AC and DC overhead lines and the DC conductor rail (third rail) systems supported by additional distribution infrastructure. These assets are used by trains to draw traction electricity.

EAUC in CP4

16.293 In CP4 there have been four EAUCs: DC and AC for each of passenger and freight. The charge has been levied per electrified vehicle mile for passenger traffic and per electrified kgtm for freight traffic, reflecting the fact that there is a stronger relationship between electrification costs and vehicle mileage rather than with the amount of traction electricity used.

Calculating the charge in CP5

16.294 Network Rail issued a consultation on its proposals for the EAUC in September 2012[375], and then concluded, including in relation to price lists, in February 2013[376]. These price lists were consistent with those assumed in its SBP. The SBP and consultation explained Network Rail's methodology for calculating the charge and the former provided data on total EAUC income in CP5.

16.295 Network Rail's SBP outlined that the EAUC income forecast was based on:

(a) EAUC cost estimates for AC and DC electrified assets; and

(b) forecast electrified vehicle kilometres for passenger and electrified kgtm for freight by AC and DC.

16.296 The SBP further explained that variable maintenance and renewals costs associated with electrification assets were forecast by Network Rail's engineering teams. Network Rail then calculated the electrification asset usage rates by dividing the cost estimates

[375] *Periodic Review 2013: Network Rail consultation on traction electricity & electrification asset usage charges in CP5*, Network Rail, September 2012. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064783482.

[376] *Periodic Review 2013: Traction Electricity and Electrification Asset Usage Charges in CP5 – Conclusions of Network Rail's Consultation*, Network Rail, February 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784907.

by forecast electrified traffic for the base year 2014-15.These rates were multiplied by the corresponding electrified traffic forecasts for each year of CP5.

16.297 In its SBP, Network Rail forecast higher EAUCs in CP5 compared to CP4 because of:

(a) a longer run approach to estimating costs which meant basing cost estimates on a 35 year average rather than a five year average, consistent with the methodology used for the VUC. This approach smoothed out renewal costs that would otherwise potentially fluctuate markedly due to the age and condition of the electrification equipment;

(b) updating variability assumptions, including a much more granular approach to assessing costs, which resulted in a marked increase in the estimated maintenance and renewal costs that vary with traffic; and

(c) increasing unit cost rates due to, for example, higher metal prices.

16.298 We reviewed and challenged the basis of Network Rail's SBP cost estimates and asked Network Rail to make changes to its methodology following concerns we had about the calculations. In particular:

(a) we identified a number of inconsistencies, both in the total expenditure and in the way the renewals expenditure was allocated, between the EAUC model and other models Network Rail used to support the SBP;

(b) we had concerns about how total AC maintenance costs were calculated, particularly on the approach taken to OLE maintenance and changes in utilisation;

(c) Network Rail calculated the costs over 35 years, as an average. In its consultation it divided these costs by forecast 2014-15 traffic to derive the EAUC. In its conclusions it instead divided by forecast CP5 average traffic to derive the EAUC. However, as the cost estimates were 35 year average, we were concerned by this inconsistency. We asked Network Rail to calculate the EAUC using average forecast traffic over 35 years instead; and

(d) we noted additional computational errors related to, for example, the way in which Network Rail converted miles to km.

16.299 We also appointed the independent reporter AMCL to review Network Rail's methodology[377]. The reporter made a number of technical recommendations following its review. We asked Network Rail to update its work to take account of our concerns and the reporter's recommendations.

[377] *Asset Management Consulting Limited (AMCL) (2013), Assessment of EAU charge proposals: PR13 review*, June 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php.

16.300 Given that the methodology for calculating the EAUC changed significantly subsequent to its February 2013 conclusions, Network Rail issued an addendum to its conclusions in May 2013[378].

Draft determination

16.301 Following Network Rail's re-submission. Table 16.29 shows our draft determination of the EAUC for CP5, including an adjustment for efficiency, as set out in the relevant section of this chapter.

Table 16.29: Comparison of EAUC in CP4, Network Rail's SBP, Network Rail's May 2013 update and our draft determination for CP5

	Passenger		Freight	
(2012-13 prices)	DC (third rail) Pence per electrified vehicle mile	AC (OLE) Pence per electrified vehicle mile	DC (third rail) £ per kgtm	AC (OLE) £ per kgtm
CP4	0.47	1.12	0.063	0.118
CP5 Network Rail SBP	2.08	1.96	0.230	0.366
CP5 Network Rail May 2013 update	0.77	1.74	0.053	0.266
ORR draft determination	0.72	1.62	0.050	0.248

Consultation responses

16.302 We did not receive responses to the draft determination that were specific to the EAUC.

Final determination

16.303 Table 16.30 shows our determination of the EAUC for passenger and freight operators. There are changes in the rates between the draft determination and final determination that are too small to show in the table. These are a consequence of small changes to our CP5 efficiency assumptions, and are not due to changes in the underlying estimates of costs directly incurred. The charges shown are our estimates, accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists.

[378] *Periodic Review 2013: Electrification asset usage charges in CP5 – addendum to Network Rail's conclusions*, Network Rail, May 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786321.

16.304 During this process we have established that there is an important difference in the definition of electrified miles between passenger and freight vehicles. In particular:

(a) for passenger vehicles using EC4T, the EAUC is levied per electrified vehicle mile for each vehicle on the train (e.g. locomotive, carriage or multiple unit); whereas

(b) for freight vehicles using EC4T, the EAUC is only levied (per kgtm) on the electrified locomotives.

16.305 We have satisfied ourselves that this discrepancy does not result in incorrect charges, because the measurement of electrified vehicle miles and electrified kgtm has been consistently applied in the estimation of the EAUC. We think that this discrepancy is confusing, however, and there is therefore a risk that the charge may be incorrectly applied in the future, which is why we are explaining the difference here.

Table 16.30: Our determination of EAUC prices for CP5

	Passenger		Freight	
(2012-13 prices)	DC (third rail) Pence per electrified vehicle mile	AC (OLE) Pence per electrified vehicle mile	DC (third rail) £ per electrified kgtm	AC (OLE) £ per electrified kgtm
Draft determination	0.72	1.62	0.050	0.248
Final determination	0.72	1.62	0.050	0.248

16.306 Table 16.31 shows our determination of EAUC income for CP5. The forecast for passenger traffic is higher than that for our draft determination, due to a correction in the traffic forecast. The forecast is marginally lower for freight due to the lower EAUC.

16.307 We set out the process for auditing this and other income forecasts above. The EAUC for charter operators is shown further below.

Table 16.31: Our forecast of EAUC income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Franchised passenger	8.2	13.4	13.7	13.9	15.0	17.1	73.1
Freight	0.3	0.7	0.7	0.8	0.8	0.9	3.9
England & Wales							
Franchised passenger	7.9	12.4	12.6	12.7	13.7	15.7	67.0
Freight	0.3	0.6	0.7	0.7	0.8	0.8	3.6

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Scotland							
Franchised passenger	0.3	1.0	1.1	1.1	1.3	1.4	6.0
Freight	0.0	0.1	0.1	0.1	0.1	0.1	0.3

Note: numbers may not reconcile due to rounding.

Coal spillage charge

16.308 The coal spillage charge and coal spillage reduction investment charge (CSRIC) were introduced as part of PR08. Prior to CP4, these costs were recovered through a 20% uplift on the VUC for vehicles transporting coal. The charges have been levied on freight operators carrying coal and were designed to:

(a) reflect the cost to Network Rail of spilt coal on the network; and

(b) incentivise freight operators, the coal industry and supply chain to reduce the level of coal spillage on the network.

16.309 The costs attributed to coal spillage consist of the clean-up and delay costs of point failures, clean-up to reduce the frequency of points failures and the reduced service life for track affected.

16.310 Currently spillage is not a material problem for other commodities and so there are no analogous charges. We consider it is appropriate to levy a distinct charge for coal spillage, rather than incorporate it in the VUC, so that there is greater transparency regarding this industry cost.

Charges for coal spillage in CP4

16.311 In CP4 the coal spillage charge recovered costs associated with coal spillage on the network, whereas the CSRIC revenue was used to fund investment in equipment at coal terminals to reduce such coal spillage.

16.312 For CP4, we incorporated an annual review mechanism into track access contracts for both the coal spillage charge and the CSRIC. The purpose of this review mechanism was to incentivise operators more effectively to reduce coal spillage. This mechanism adjusted the coal spillage charge annually in proportion to the number of points failures in the preceding year where coal spillage was recorded as being a contributory factor to the failure ("relevant points failures"). This is set out in Table 16.32.

16.313 Although the number of relevant points failures fell sharply in the first two years of CP4, thus reducing the charge for 2010-11 and 2011-12, in the third year a substantial increase was recorded. In the fourth year the number was broadly stable so the coal spillage charge for year five was the same as for year four with the RPI uplift for all charges. These trends in points failures have broadly tracked coal traffic volumes.

Table 16.32: Coal spillage charges for each year of CP4 (2012-13 prices)

Year	Relevant points failures[379]	Coal spillage charge (p/kgtm)	Coal spillage reduction investment charge (p/kgtm)	Combined charges (p/kgtm)
2009-10	203	29.06	2.75	31.81
2010-11	154	22.05	2.75	24.80
2011-12	150	21.47	-	21.47
2012-13	231	25.27	-	25.27
2013-14	224	25.27	-	25.27

16.314 The CSIRC was discontinued from April 2011 on the basis that surplus unspent funds had accrued, at that point, as a result of the charge.

Network Rail's calculation of the charges in PR13

Coal spillage charge

16.315 The coal spillage charge methodology was originally derived from a detailed assessment conducted by the independent reporter Halcrow as part of PR08. Network Rail consulted on its proposed coal spillage cost estimates in December 2012. In its consultation, it proposed retaining much of the PR08 methodology for estimating coal spillage costs.

16.316 Network Rail's consultation document detailed the methodology used to estimate the impact of coal spillage and the assumptions used to estimate each cost category and subsequent coal spillage charge. The cost categories it used are shown in Table 16.33.

Table 16.33: Coal spillage cost categories and metrics

Cost category	Metrics applied to calculate costs
Preventative intervention to reduce the frequency of points failures from coal spillage	Frequency of CP4 interventions; deployment costs
Clean-up costs associated with points failures	Relevant points failures recorded in CP4
Delays due to points failures (Schedule 8 performance regime costs)	Relevant delay costs in CP4
The costs associated with the reduced service life of plain line track	Length of affected track miles taken from Halcrow recommendations and adjusted in the conclusions to take account of investment
The costs associated with the reduced service life of point ends	Number of affected point ends calculated based on affected track miles per loading and unloading site

[379] Based on the recorded number of relevant points failures from the previous financial year, except for 2009-10 where it was based on the number of recorded points failures occurring in 2007-08.

16.317 In its December 2012 consultation, Network Rail's estimates of coal spillage costs were substantially higher than those that we determined in PR08. This was principally due to:

(a) the list of coal loading/unloading locations in PR08 appearing to have been substantially incomplete. Freight operators were consulted on the list of locations in PR13 (as they were for PR08), which had increased from 23 in PR08 to 38 in PR13. This substantially increases the estimate of coal spillage costs associated with reduced track service life; and

(b) some costs relating to preventative clean-up were omitted in PR08. The PR08 estimate did not include the costs associated with manual interventions to clean coal spillage off the network. Network Rail's PR13 estimates included these costs, and also the costs of Tube Cube[380], reflecting CP4 experience.

16.318 Freight operators and the Rail Freight Group (RFG) were concerned that the coal spillage charge on which Network Rail had consulted had increased considerably since PR08, despite investment undertaken during CP4 to reduce coal spillage on the network.

16.319 Operators also argued that Network Rail had provided insufficient evidence to support its cost estimates and assumptions, and that they were disappointed in the lack of progress made in understanding the costs associated with coal spillage.

16.320 We commissioned the independent reporter Arup to review Network Rail's methodology and estimates. The reporter made a number of points including:

(a) confirmation, with photographic evidence, that coal spillage remained a significant issue on the network, despite the investment in CP4;

(b) a detailed review of the evidence and data available, and recommendations to improve recording of coal spillage incidents;

(c) support for Network Rail's proposal to include the new preventative clean-up categories in Network Rail's cost estimates; and

(d) recommendations regarding increasing the efficiency of the deployment of some clean-up interventions.

16.321 The reporter also investigated the impact of investment on coal spillage. During CP4, coal wagon rave cleaners had been installed at 7 out of 38 coal loading and unloading locations. The cleaners were designed to brush coal off the raves of wagons, reducing coal spillage onto the network outside the terminals. Network Rail's methodology did not directly take the impact of this investment into account, and hence the reporter considered that these costs were overstated. The reporter recommended certain changes to the methodology which had the result of reducing

[380] A road-rail vehicle attachment for cleaning ballast, introduced in CP4.

the estimated impact of coal spillage on track service life by 75% at locations fitted with coal wagon rave cleaners, and banded the costs associated with different point ends depending on their traffic levels.

16.322 Network Rail accepted the changes proposed by the reporter and made other changes to take account of consultation responses. It published updated coal spillage charge estimates in its April 2013 conclusion document. The net effect of these revised estimates was a reduction in the coal spillage charge from 64.97 pence per kgtm, as proposed in Network Rail's consultation document, to 52.78 pence per kgtm (2012-13 prices).

16.323 However, following the reporter review, a stakeholder argued that Network Rail's methodology for estimating track renewal costs at point ends contained substantial double counting of track costs. In May 2013 Network Rail revisited its estimates to address these concerns. Network Rail revised the affected mileages associated with each coal loading and unloading location and in some cases proposed a reduction in track mileage affected by coal spillage to reflect this double counting issue. This amendment reduced Network Rail's estimate of the coal spillage charge further to 43.13 pence per kgtm. This compares to a charge of 31.81 pence per kgtm in CP4.

16.324 Table 16.34 shows the coal spillage cost estimates of PR08, Network Rail's consultation and its conclusions. All costs are shown at end of CP5 efficiency, which, as explained in the discussion on the efficiency overlay, was the basis of the charge for CP4, and will also be for CP5.

Table 16.34: Coal spillage costs and charges

Cost category	PR08	Network Rail December 2012 consultation	Network Rail May 2013 updated conclusions
Coal spillage costs (£m a year, 2012-13 prices)			
Cost of clean-up and delay minutes	0.21	0.11	0.11
Preventative intervention to reduce the frequency of points failures from coal spillage (Cost of Rail Vac & Tube Cube & Manual interventions on points failures)	0.57	1.58	1.14
Cost of point end service life reductions	1.03	1.79	0.99
Cost of Plain Line service life reductions	1.08	1.46	1.04
Total	**2.88**	**4.95**	**3.28**
Coal spillage charges (pence per kgtm, 2012-13 prices)			
Coal spillage charge	29.06	64.97	43.12
CSRIC	2.75	-	-
Total coal spillage charges	**31.81**	**64.97**	**43.13**

Note: numbers may not reconcile due to rounding.

CSRIC and the annual review mechanism

16.325 In its April 2013 conclusions, Network Rail concluded that it would discontinue the CSRIC in CP5, subject to our approval. It did this on the basis that there were surplus funds available from the CP4 charges for future investment, and that cleaning equipment had already been installed at the busiest coal loading locations (e.g. Port of Immingham). The majority of respondents to Network Rail's consultation agreed with this change.

16.326 Network Rail also argued for the removal of the annual review mechanism of the coal spillage charge for CP5, on the basis that it was flawed and imposed a disproportionate administrative burden on the industry. A number of respondents disagreed with Network Rail's proposal, suggesting that it would remove an important incentive for operators to implement measures aimed at reducing coal spillage on the network.

Our draft determination

16.327 We proposed to accept Network Rail's revised May 2013 methodology for estimating the coal spillage charge, and its associated estimates, subject to adjustment to reflect our determination of Network Rail's efficiency. We agreed to remove the annual review mechanism with respect to the CSC.

16.328 We did however express concern, about what appears to be missed opportunities to record incidents of coal spillage, and in our draft determination we asked Network Rail to improve its records of such incidents in CP5.

16.329 We agreed with Network Rail's conclusion to roll any remaining CSRIC funds into CP5, and to suspend the CSIRC during CP5. As with the annual review mechanism, we committed to revisiting this decision in the next access charges review, recognising that both mechanisms provide incentives to reduce costs of coal spillage.

16.330 In July 2013, Network Rail published draft price lists for the coal spillage charge consistent with our draft determination[381]. Accepting Network Rail's revised methodology as concluded in May 2013 resulted in the coal spillage charge increasing from 0.2448 to 0.3925 pound per thousand gross tonne miles including our end of CP5 efficiency assumptions.

Consultation responses

16.331 Network Rail responded to our consultation acknowledging the benefits of improving the recording of incidents of coal spillage and committed to looking at potential ways of improving this during CP5.

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[381] *Cover note for draft price list for CP5 consistent with ORR's draft determination*, Network Rail, July 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786915.

16.332 The points raised by other respondents were largely the same as those raised prior to publication of our draft determination. Specifically, a number of stakeholders had argued strongly that the methodology was subjective and insufficiently evidence-based. There was also concern raised that this increase in charge will not incentivise any further investment in reducing coal spillage.

Our determination of coal spillage charges

Coal spillage charge

16.333 The coal spillage charge is set to reflect the costs of spilt coal on the network. It allows Network Rail to recover these costs and incentivises the coal supply chain, including freight operators, to reduce the level of coal spillage. We continue to think it appropriate to have a separate charge for this cost item, as the associated transparency should help incentivise the coal industry to reduce these costs, reduce its impact on the network, improving efficiency and the service received by users.

16.334 After careful consideration of the responses to our consultation we have decided to implement Network Rail's methodology as set out in May 2013[382] for estimating the coal spillage charge. This will mean that much of the methodology used in PR08 for calculating coal spillage costs will remain, with refinements suggested by Arup.

16.335 The coal spillage charge for CP5 will therefore be around £0.39 per kgtm, Our estimate uses Network Rail's May 2013 coal spillage charge which we have adjusted to account for our determination of Network Rail's efficiency, as set out in the relevant section of this chapter. Network Rail will publish the actual rate, to a greater number of decimal places, as part of its price lists. The CP5 rate compares to Network Rail's December 2013 consultation estimate of £0.65, PR08 determined coal spillage charges of £0.32, and coal spillage charge in 2012-13 (adjusted under the annual review mechanism) of £0.24.

16.336 Whilst we acknowledged concerns around this methodology, this methodology was established by the reporter Halcrow in PR08 and was based on a detailed assessment of the incidence of coal spillage on track in relation to loading and unloading points. In PR13 the reporter used expert judgement to recommend changes to this approach to take account of investment in rave cleaners and to reflect the fact that the investment has tended to occur on busier routes. While we recognise that more detailed empirical research may increase the accuracy of these estimates, we consider the work conducted in both PR08 and PR13 to be proportionate to the scale of the charge.

16.337 As expressed in our draft determination, we are however concerned about what appears to be missed opportunities to record incidents of coal spillage. We agree with

[382] *Periodic Review 2013 – Conclusions on the Coal Spillage Charge and Coal Spillage Reduction Investment Charge*, Network Rail, April 2013. This may be accessed at http://www.networkrail.co.uk/CSC-and-CSRIC-conclusions.pdf.

the reporter's observation that in CP4 there was little systematic recording of evidence relating to volumes of work and costs directly attributable to coal spillage. We support its recommendation that steps be put in place by Network Rail to improve recording of such evidence during CP5 to ensure a more robust evidence base in the future.

16.338 Table 16.35 presents our forecast of coal spillage charge income for CP5.

Table 16.35: Our forecast of the coal spillage charge income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Coal spillage charge income	1.9	3.0	3.0	3.0	3.0	3.0	15.0
England & Wales							
Coal spillage charge income	1.5	2.4	2.4	2.4	2.4	2.4	11.8
Scotland							
Coal spillage charge income	0.4	0.6	0.6	0.6	0.6	0.6	3.2

Note: numbers may not reconcile due to rounding.

16.339 Coal spillage charge income is almost identical to what we proposed in our draft determination with the only change being that the totals for England & Wales and Great Britain as a whole increase by £0.1m over the whole of CP5. This change is due to overall adjustments to our efficiency assumptions.

CSRIC and the annual review mechanism

16.340 Network Rail has argued for the removal of the annual review mechanism and the removal of the CSRIC in CP5. We have reviewed its reasoning and that of respondents to its consultation carefully.

16.341 We are concerned in general to reduce administrative burden associated with contractual mechanisms and with this in mind we agree with Network Rail that the CP4 annual review mechanism imposed disproportionate administrative costs to the industry, and have concluded on that basis to remove the mechanism for CP5. We plan to revisit this decision in the next access charges review (PR18), with a view to introducing an equivalent mechanism that takes account of traffic volumes and that is less administratively burdensome if we consider investment in cost-effective mechanisms to reduce coal spillage during CP5 has been insufficient.

16.342 We agree with Network Rail's conclusion to roll any remaining CSRIC funds into CP5, and to suspend the CSIRC during CP5. As with the annual review mechanism, we will

revisit this decision in the next access charges review, recognising that both mechanisms provide incentives to reduce costs of coal spillage.

Freight only line charge

16.343 The freight only line (FOL) charge was introduced as part of PR08. It was calculated to recover the fixed costs of FOL for the commodities on which it is levied[383]. In legal terms, it represents a mark-up on charges for costs directly incurred on those market segments which we determine to be subject to the charge. Coal for the electricity supply industry (ESI) and spent nuclear fuel are the two commodities that have paid a FOL charge in CP4.

16.344 In PR13, we have consulted on another mark-up, the FSC which we describe in the next section. We consulted on the basis that the FSC would recover all costs that Network Rail could avoid if freight services did not use its infrastructure, which we referred to as freight avoidable costs. In principle the FSC and FOL charge could be treated as a single charge. For reasons of transparency, during the phasing in of the FSC, we agree with Network Rail's conclusion that they should be kept as separate charges for CP5, but we will revisit this at PR18.

16.345 In CP4 the FOL charge has been levied as a flat rate, by commodity, per kgtm on all ESI coal and spent nuclear traffic irrespective of its location on Network Rail's infrastructure: even though the costs relate to FOL only, the charge has applied nationwide[384].

Network Rail's consultation on freight caps (including FOL)

16.346 As part of its November 2011 consultation on freight caps, Network Rail presented its initial estimates of FOL costs[385], to be used as the basis for calculating the FOL charge in CP5. Network Rail estimated the total cost to be recovered for ESI coal and spent nuclear fuel FOL using broadly the same methodology as that which it developed in PR08. Network Rail based its FOL costs estimates on these two commodities because at the time of its November 2011 consultation these were the only commodities we had assessed as being subject to a FOL charge. To estimate FOL costs, Network Rail:

(a) prepared a list of FOLs;

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[383] For the purpose of this charge, Network Rail defines freight only lines as being lines that would close if freight services ceased to operate. They include segments of branch lines used only by freight traffic and terminal lines.

[384] With the exception of the year-end reconciliation of EC4T costs and volumes, all variable charges in CP4 were levied nationwide; principally the rationale for this was to mitigate the complexity of billing.

[385] Network Rail letter of 29 November 2011, *Freight caps – consultation on variable use charge (VUC) and freight only line charge initial cost estimates*. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064779042&cd=2.

(b) estimated the total cost of these lines using Network Rail's infrastructure cost model (ICM);

(c) apportioned the costs to each commodity in proportion to the gross tonne miles transported on the FOL by that commodity; and

(d) deducted variable usage costs associated with traffic on the FOL, on the basis that these would be recovered through the VUC.

16.347 We mandated the reporter Arup to review the calculations that Network Rail presented in its freight caps consultation, including that of the FOLs. Arup's report is published on our website[386]. Network Rail took the findings into account in its March 2012 conclusions.

16.348 Network Rail's March 2012 conclusions on FOL costs were presented in 2011-12 prices and end of CP4 efficiency, whereas the numbers in this chapter are presented in 2012-13 prices and end of CP5 efficiency, so are not directly comparable.

Estimating freight avoidable costs

16.349 In May 2012 we consulted on introducing a new charge that we called a FSC (as well as consulting on setting a cap on the average freight VUC). This charge would recover what we referred to as freight avoidable costs that were not recovered from other charges. As part of this work, we reviewed Network Rail's estimates for FOL costs, taking account of the independent reporter's review, and said that we were broadly content with Network Rail's approach and estimates of FOL costs.

16.350 As part of the work on the FSC, Network Rail commissioned consultants L.E.K to estimate freight avoidable costs. L.E.K's report was published by Network Rail in October 2012, and included refined estimates of costs for FOLs[387]. Network Rail used L.E.K's refined estimates in its forecasts of income from the FOL charge in its SBP.

Calculating and phasing in changes to the FOL charge

16.351 In January 2013 we concluded on our consultation on the FSC and a cap on the VUC. As part of this, we concluded on a cap on a FSC. On the basis of a detailed assessment of the markets for different commodities, we concluded that the mark-up would apply to ESI coal, spent nuclear fuel and iron ore. We also announced that we would consult on an equivalent charge for biomass, and went on to do so in February 2013.

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[386] *AO/027: Review of Analysis in Network Rail's 'Freight Cap' Consultation*, Arup, March 2012. This may be accessed at http://www.rail-reg.gov.uk/upload/pdf/review-analysis-nrs-freight-cap-consultation.pdf.

[387] *Estimating Freight Avoidable Costs Final Report*, L.E.K., October 2012. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784085.

16.352 Network Rail issued a consultation in February 2013[388] with the purpose of updating its charging calculations to take account of our January 2013 conclusions.

16.353 The cost estimates took account of L.E.K's refinements (which had already been used in the SBP income forecasts), but Network Rail also stated its intention to update the cost estimates for some further changes that followed the SBP, and had commissioned L.E.K to undertake an update of its freight avoidable cost estimates.

16.354 Network Rail presented the FOL charges, as opposed to estimates of total FOL costs, for the first time. Network Rail calculated these by dividing its cost estimates by its forecast of average CP5 traffic levels for the relevant traffic.

16.355 Network Rail highlighted an error in the PR08 calculation of the FOL charge for spent nuclear fuel, resulting from incorrect assumptions it had made regarding traffic levels in CP4. Correcting this error, Network Rail calculated that the CP5 FOL charge should be around seven to eight times higher than the CP4 charge of £5.34 per kgtm.

16.356 To give the nuclear industry time to adjust to such a significant increase, Network Rail proposed phasing in the increase in the charge for spent nuclear fuel in line with its proposal for phasing in the FSC, no increase for the first two years of CP5, and then with the charge rate increasing to 20%, 60% and 100% of the full charge rate over the last three years of CP5.

16.357 In its consultation, Network Rail proposed to phase in the FOL charge for iron ore and potentially biomass over the same time frame and using the same profile as for the FSC, i.e. the charge would be introduced in April 2016 for the last three years of CP5 (2016-17 to 2018-19), with the charge increasing to 20% of the full charge rate, to 60% and 100% respectively. Network Rail published its conclusions to its February consultation in April 2013[389].

Our draft determination and Network Rail's price list

16.358 Network Rail's methodology for calculating FOL costs was established in PR08, and subject to independent reporter review in 2012. In our draft determination we said we were content with this approach. We were satisfied with the way Network Rail had used its CP5 freight forecast to calculate freight only line charge rates. We used Network Rail's revised April 2013 estimate as the basis of our determination of forecast income for this charge.

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[388] Network Rail letter of 8 February 2013, *Network Rail consultation on the phasing in of the freight-specific charge, applying the variable usage charge cap, updating our estimate of freight avoidable costs and updating / phasing in the freight-only line charge*. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784848.

[389] Network Rail letter of 23 April 2013, *Network Rail conclusion letter on the 'phasing-in' profile of the freight-specific charge, applying the variable usage charge cap, updating our estimate of freight avoidable costs and updating / phasing in the freight-only line charge*. This may be accessed at http://www.networkrail.co.uk/Conclusions-on-the-phasing-of-freight-specific-charge.pdf

16.359 In our draft determination we stated it was appropriate that Network Rail increase the charge rate for spent nuclear fuel to correct a significant error in the rate set at CP4 and that given the scale of the increase it should be phased in over CP5.

16.360 Following our decision not to levy a FSC on biomass we decided not to levy a FOL charge on biomass.

Network Rail's draft FOL price list

16.361 In July 2013, Network Rail published its draft freight only line price list taking account of our draft determination[390]. These charges are summarised in Table 16.28.

Table 16.28 Network Rail's draft freight only line prices

Commodity (£ per kgtm, 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19
ESI Coal	0.51	0.51	0.51	0.51	0.51
Spent nuclear fuel	5.34	5.34	5.51	16.53	27.54
Iron ore	0.00	0.00	0.16	0.50	0.83

16.362 Network Rail converted FOL costs into prices by dividing these costs by forecast relevant traffic for CP5. We had been concerned that the costs and traffic levels might have been calculated on an inconsistent basis, leading to a distortion in the charge, but have now satisfied ourselves that this is not a material consideration. In particular, Network Rail's cost estimates were based on FOL traffic at a particular point in time (start of CP5), whereas its traffic forecast is the CP5 average. As the forecast Network Rail used for CP5 traffic (the SBP forecast) has been flat, however, this is not material.

Responses to our draft determination

16.363 We did not receive responses to the draft determination with respect to the FOL charge.

Our determination of the freight only line charge

16.364 The FOL charge will continue to be levied on ESI coal and spent nuclear fuel traffic in CP5. In addition it will be levied on iron ore traffic. For each year, the charge will be flat rate per kgtm, irrespective of the location of the traffic on the GB rail network.

16.365 It is regrettable that the correct traffic levels for spent nuclear fuel were not applied in PR08 to calculate the appropriate charge, resulting in a substantial error in the scale of the CP4 charge. We think it is appropriate to correct the error now, in order to ensure that the charges send the correct signals to Network Rail and to those hauling spent nuclear fuel.

[390] *Draft price lists for CP5 consistent with ORR's draft determination*, Network Rail, July 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786915.

16.366 But the scale of the increase means that, in order to allow time for users to adapt to it, we consider Network Rail's approach to phasing in the large increase in charge which results from correcting this error to be appropriate. We have also phased in the FOL charge for iron ore to give train operators time to adjust.

16.367 We have decided not to levy a FOL charge on biomass in CP5. The commodities to which the FOL charge applies are consistent with those to which the FSC applies, and, as explained, we have decided not to levy a FSC for biomass in CP5. As part of our wider work in the beginning of CP5 to improve our understanding of costs and how they should be reflected in the structure of charges, we will ensure we involve biomass stakeholders.

16.368 We are content with the way in which Network Rail calculated its freight only line prices and we have used these estimates as the basis of our determination of forecast income for this charge.

16.369 Table 16.37 shows our determination of the estimated FOL charges for CP5, accurate to the number of decimal places shown. Network Rail will publish actual charges, to a greater number of decimal places, in its price lists. Table 16.38 shows our determination of forecast FOL charge income for CP5, including adjustment for our determination of efficiency, as set out in the relevant section of this chapter.

16.370 In addition to changes in our efficiency assumptions as discussed above, the FOL charges increased slightly relative to our draft determination following our decision to approve lower rates for the VUC. This is because the FOL charge is calculated net of income from the VUC.

Table 16.37: Our determination of FOL charges for CP5

Commodity (£ per kgtm, 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19
ESI Coal	0.52	0.52	0.52	0.52	0.52
Spent nuclear fuel	5.34	5. 34	5.54	16.63	27.72
Iron ore	0.00	0.00	0.17	0.50	0.84

Table 16.38: Our forecast of FOL charges income for CP5 (with growth in traffic)

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain							
Freight	4.2	3.8	3.8	3.8	4.2	4.5	20.1
England & Wales							
Freight	3.3	3.0	3.0	3.0	3.3	3.7	16.0
Scotland							
Freight	0.9	0.8	0.8	0.8	0.8	0.9	4.1

Note: numbers may not reconcile due to rounding.

Freight specific charge

Background

16.371 We are keen to improve the extent to which the charges that Network Rail's customers pay reflect the costs they impose on the network. More cost reflective prices help to drive efficiencies and send better signals to Network Rail and its customers for the efficient provision and use of access to the network, which is itself a scarce resource. More cost reflective charges also improve transparency – making it clearer who pays for what and what they receive in return. In our view, the new freight specific charge (FSC) on which we concluded in January 2013[391] is an important step in improving value for money.

16.372 Some of the public financial support for the rail industry benefits rail freight. All train operators pay a variable usage charge for each vehicle they run on the network. But only franchised passenger train operators pay FTAC, which contributes to infrastructure costs beyond the costs generated simply by running additional vehicles. In 2011-12 passenger train operators paid £887m (£913m in 2012-13 prices) to Network Rail in fixed charges. The comparable charge that freight operators pay (the FOL charge) amounted to around £4m in 2011-12.

16.373 There are good reasons to subsidise rail freight. This is because there are wider economic and social benefits of moving freight by rail rather than road. Without rail freight, there would have been an additional 7.56m road journeys in 2012-13. Switching from road to rail reduces CO_2 emissions by 70% per tonne moved and generates benefits in terms of reduced road congestion equivalent to 28 pence per HGV mile avoided. This is why the UK and Scottish Governments have consistently supported rail freight, and have funded substantial investments to improve rail freight infrastructure – for example gauge enhancements on Felixstowe to Nuneaton and Southampton to West Midlands to allow large containers to be carried by intermodal traffic and the Grangemouth branch improvement.

16.374 But the wider economic and social benefits that underlie the subsidy to rail freight are generated principally when freight that would otherwise have travelled by road travels by rail. To date, rail freight has benefited from subsidy, even where, as is the case for ESI coal, spent nuclear fuel and iron ore, it cannot easily or economically switch to road. By introducing a FSC for these commodities, we will increase the extent to which they contribute to the costs that freight imposes on the rail network. And in doing so, we will reduce the overall size of the subsidy that Network Rail receives

[391] *Periodic Review 2013 Rail freight: conclusion on the average variable usage charge and a freight specific charge*, Office of Rail Regulation, January 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/freight-conclusions-jan-2013.pdf.

(through grant directly from government in lieu of franchised passenger operators FTAC) and the FTAC paid by franchised passenger train operators.

Our January 2013 decisions on the FSC and Network Rail's conclusions

16.375 Following extensive consultation with our stakeholders, we concluded, in January 2013, that we would introduce a new charge, the FSC, in CP5. The purpose of the charge is to recover infrastructure costs caused by freight operating on the network that are not currently recovered through other freight charges. The introduction of this charge means that rail freight will make a greater contribution to the costs that it imposes on the network.

16.376 The FSC is to be levied as a mark-up on the VUC and recover freight avoidable costs. The Access & Management Regulations establish the legal framework for levying a mark-up. In addition to this legislation, we also must consider any proposed mark-up against our statutory duties which are primarily set out in section 4 of the Railways Act 1993. We set out the legal test that we applied in reaching our decision on the FSC in our January 2013 decisions document.

16.377 The FSC improves the extent to which the charges that freight operators pay reflect the costs they impose on the network. To be consistent with the Access & Management Regulations the charge is recovered from the commodity markets assessed by us to be able to bear a mark-up on the variable usage charge. We undertook extensive market analysis to inform our decision making process.

16.378 In 2012, Network Rail commissioned consultants L.E.K to estimate freight avoidable costs. L.E.K engaged extensively with the rail freight industry and used Network Rail modelling and analysis in order to estimate freight avoidable costs. L.E.K also developed an allocation of these costs between freight commodities (or market segments). We used this work as an input to our decisions on capping the FSC in January. The caps were set to reflect the low end of the range of our estimate of freight avoidable cost, which consisted of L.E.K's analysis adjusted by us following our own analyses and input from the reporter.

16.379 Our January 2013 conclusions document did not set FSCs as such, rather it set a cap on the FSC i.e. the maximum level of the charge to be levied in CP5, by commodity. We also concluded that the unit of the charge would be a charge per thousand gross tonne mile (per kgtm), reflecting the fact that the two principal drivers of freight avoidable costs are weight and distance travelled. The caps are shown in Table 16.39.

Table 16.39: January 2013 conclusions document FSC cap by commodity (2011-12 prices)

Commodity	FSC cap (per kgtm)
ESI coal	4.04
Spent nuclear fuel	11.64
Iron ore	2.96
Biomass	We consulted on whether to levy a FSC on biomass
Other commodities	No FSC

16.380 We indicated in January 2013 that further work would be required in order to set charges and asked Network Rail to take this work forward.

16.381 In order to address concerns raised during our extensive stakeholder engagement, in particular about the ability of some users to cope with the imposition of this new charge, we also determined that the FSC would be phased in over the course of CP5 to allow freight businesses time to adapt.

16.382 In our January 2013 document, we concluded that the charge would not be introduced until 2016 and then would be phased in gradually over the course of the remainder of CP5. We provided an indicative profile for phasing and asked Network Rail to consult on the phasing in of the charge which it did in February 2013.

16.383 Network Rail's conclusions were published on 23 April 2013[392]. In this document Network Rail confirmed its proposals to levy no charge in the first two years of CP5 and then to phase in the FSC at 20%, 60% and 100% over the last three years of CP5 (i.e. no change in 2014-15 and 2015-16 and phasing in between 2016-17 and 2018-19). This would have had the effect of setting the charge to equate to the annual caps as set out in Table 16.40 consistent with our conclusions in January 2013.

[392] Network Rail letter of 23 April 2013, *Network Rail conclusion letter on the 'phasing-in' profile of the freight-specific charge, applying the variable usage charge cap, updating our estimate of freight avoidable costs and updating / phasing in the freight-only line charge*. This may be accessed at http://www.networkrail.co.uk/Conclusions-on-the-phasing-of-freight-specific-charge.pdf.

Table 16.40: Network Rail's annual caps on the FSC in CP5 following our January 2013 conclusions (2011-12 prices)[393]

Commodity	FSC cap, 2014-15	FSC cap, 2015-16	FSC cap, 2016-17	FSC cap, 2017-18	FSC cap, 2018-19
Phasing	0%	0%	20%	60%	100%
ESI coal	0.00	0.00	0.80	2.40	4.04
Spent nuclear fuel	0.00	0.00	2.15	6.98	11.64
Iron ore	0.00	0.00	0.59	1.77	2.96

Extending the FSC to biomass

16.384 As part of the market assessment undertaken ahead of our January 2013 conclusions we began the process of considering whether or not the charge should apply to trains carrying biomass. We had previously said we would not levy a charge on biomass but would revisit the policy to coincide with DECC's recalculation of subsidy from 2017. We changed this stance in our January 2013 decision document because respondents to the May consultation had explained that investments made now would be subject to the existing subsidy regime, not a 2017 revision, and they wanted certainty about the charging regime to inform imminent investment decisions. We subsequently consulted on a proposal to introduce the FSC for biomass, setting out what this could be.

Further work carried out by Network Rail following our January 2013 decisions

16.385 The aim of the FSC is to recover freight avoidable costs (FACs). We define FACs as the infrastructure costs that would be foregone if commercial freight services were no longer to use the network (where commercial freight services are those run for third party customers, as opposed to the infrastructure trains providing services to Network Rail).

16.386 Following our January 2013 conclusions, Network Rail re-commissioned L.E.K to update its earlier work to take account of our comments and in particular to:

(a) incorporate changes in the underlying growth forecasts to reflect the SBP traffic forecasts;

(b) incorporate Network Rail's latest VTISM run in line with Arup's recommendations;

(c) update for the latest view on enhancements; and

(d) consider incorporating other changes as recommend by ORR / reporters where appropriate.

[393] This table sets out the caps on which we concluded in January 2013, using the phasing on which Network Rail concluded.

16.387 As part of re-commissioning L.E.K., Network Rail consulted on its proposed approach to the update as part of an industry letter in February 2013 on various freight charges (including a possible approach to calculating FOL charges for biomass). L.E.K's updated report can be accessed via Network Rail's periodic review 2013 webpage[394].

16.388 A key concern about the original estimate of FACs reported by L.E.K previously was that the range of potential costs was extremely wide. The effect of the adjustments made in the final report was to narrow the range significantly; the low end increased by 41% and the high end increased by 14%. L.E.K's revised estimate of gross FACs (prior to revenue from other charges being netted off) was £215-£428m per annum. This was a 35 year average figure, and accounted for forecast freight traffic[395].

16.389 The principal drivers of the increase in L.E.K's FAC estimates were:

(a) increases in track maintenance and renewal cost estimate as a result of new VTISM results supplied by Network Rail, following recommendations from the independent reporter: this increased the track variable usage cost estimate by £78m at the low end of the range and £36m at the high end; and

(b) the inclusion of redundant freight property assets cost estimate: this increased the redundant freight property asset cost range by £22m at the high end of the freight avoidable cost estimate range.

16.390 Other updates that had a less significant impact on the FAC estimate included updating the analysis with Network Rail's SBP traffic forecast; revisions to FOL costs and variable usage costs, updates to Network Rail's review of freight enhancement projects, and refinement of the estimation of Schedule 4 costs with respect to spent nuclear fuel.

16.391 L.E.K's updated estimate of gross freight avoidable costs is provided in Table 16.41.

Table 16.41: L.E.K's updated estimated gross freight avoidable cost over 35 years (2011-12 prices)

Cost category	L.E.K. initial estimates (£m)		Updated estimates (£m)		Change (£m)		Change (%)	
	Low	High	Low	High	Low	High	Low	High
FOL costs	14	21	11	19	(3)	(3)	(21%)	(16%)
Redundant freight assets costs	6	12	5	32	(1)	20	(21%)	175%

[394] This may be accessed at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

[395] This is consistent with the calculation of costs for other charges, so that renewal costs are averaged over a long time period.

Cost category	L.E.K. initial estimates (£m)		Updated estimates (£m)		Change (£m)		Change (%)	
Variable usage costs	96	215	173	249	77	35	80%	16%
Redundant enhancement costs	64	87	56	86	(7)	(1)	(12%)	(1%)
Consequential costs reductions	58	77	55	78	(3)	1	(5%)	1%
Consequential cost increases	(88)	(39)	(88)	(39)	0	0	0%	0%
Network Rail staff costs	4	5	4	5	0	0	0%	0%
Total	**152**	**377**	**215**	**428**	**63**	**51**	**41%**	**14%**

Note: numbers may not reconcile due to rounding.

16.392 From its updated estimate of gross FACs L.E.K deducted revenue accruing from other charges on the freight industry. The most significant current charge is the variable usage charge which generates £63m p.a. of revenue from freight operators. After adjustment for revenue generated by all other charges the Network Rail / L.E.K updated estimate of net FACs was £130m to £311m per annum.

16.393 Many of the changes made by L.E.K in the final version of its report reflected suggestions and/ or adjustments that we made to its work previously. We note however that L.E.K had not adopted all of the changes that we proposed e.g. the changes that we suggested relating to the costs of acquiring additional engineering trains to support Network Rail's own maintenance renewal and enhancement of the network had not been adopted.

16.394 In addition, there are inevitably some discrepancies between these estimates of costs and charges and those assumed in our determination, simply because work has been carried out subsequent to L.E.K's report.

16.395 However, taking the changes made in the report in the round, we have concluded that the analysis is sufficiently robust to inform the setting of charges. Using the estimates of net FACs Network Rail/ L.E.K's analysis suggested that the FSC should be set at: £2.08 per kgtm for coal, £1.53 per kgtm for iron ore and £5.99 per kgtm for spent nuclear fuel.

Our draft determination on the FSC and Network Rail's price lists

16.396 In our draft determination we approved FSC rates considerably below our January 2013 caps and below the charges implied by L.E.K's assessment of costs. They amounted to approximately 25% of the January 2013 caps and 50% of a low-end estimate of L.E.K's costs. In concluding on these rates we were very conscious of the

point made by many freight stakeholders that freight charges must be viewed in their entirety not on a charge by charge basis. In addition, we concluded not to levy a FSC on biomass. In July 2013 Network Rail published its draft FSC price list taking account of our draft determination.

Responses to our draft determination

16.397 Rail freight operators welcomed our decision not to levy a FSC on biomass in CP5, as well as our decision to phase in the charge on those commodities on which we have decided to levy the charge on, and at a lower level than we proposed in January 2013. Freightliner said it considered that there was considerable merit in reviewing the metric of the charge in CP6, in particular so that it be levied on a per tonne basis.

16.398 The Freight Transport Association (FTA) expressed concern about ORR's decision to increase charges so that rail freight would pay more of its costs of operating on the network, stating that this represented a departure from previous periodic reviews which had reduced freight track access charges. It also expressed freight customers' concern about ORR's apparent policy of increasing charges on "captive markets" which was leading customers to question whether ORR would increases charges in other markets should in future reviews ORR determine these markets able to support higher charges. FTA stated both these issues created uncertainty, potentially affecting decisions to invest in rail freight and putting customers off increasing their use of rail freight.

16.399 We consider it is important that rail users pay, as far as practicable, the costs of using the network. Over the long-term this will encourage users to make more efficient use of the network as well as, through greater costs transparency, help rail users to challenge Network Rail to reduce its costs.

16.400 Freightliner and RFG asked ORR to improve on the work undertaken by Network Rail to determine FAC. Freightliner and GB Railfreight set out a number of areas where they wished to see improvements, for example the use of VTISM to estimate the impact of large incremental changes in traffic levels, cost estimates based on 35-year averages and the inclusion of some enhancement schemes as freight avoidable costs.

16.401 Freightliner, GB Railfreight and RFG also highlighted the need for care in how any freight avoidable cost estimate might be interpreted and presented, as the current estimates were already being interpreted as the level of freight subsidy. They also said the avoidable cost estimate should be presented alongside estimates of the benefits of rail freight to provide a balanced context in which to present freight's costs.

16.402 The work to estimate freight's avoidable costs was commissioned by Network Rail with consultation and input from the rail freight industry and other key stakeholders. We understand there is significant uncertainly associated with estimates of FAC. This has informed our decisions to approve charges with reference to the low end of the range. We agree there is a need to improve our understanding of freight's costs of

operating on the network and we aim to do this through our work to improve the cost reflectivity of charges as part of our track access charges review during CP5.

Our determination of the FSC

16.403 Our decision on the FSC is the same as that for our draft determination. We explain our reasoning below.

16.404 In January 2013 we set the caps on the FSC on a conservative basis i.e. at the low end of the adjusted range of net FACs. Consistent with this decision, charges for CP5 will also be set on a conservative basis. Our start point for this has been the revised estimate of net FACs calculated for Network Rail.

16.405 However we are very conscious of the point made by many freight stakeholders that freight charges must be viewed in their entirety not on a charge by charge basis. In reaching our decision we have had regard to the cumulative impact on freight stakeholders of the various changes to freight charges. In reaching our conclusion on the FSC we have had regard to the requirements of the Access & Management Regulations and also considered our broader statutory duties.

16.406 In this context, our review of charges for CP5 has resulted in a significant number of changes many of which increase the overall quantum of charges imposed on the freight sector.

16.407 We have reviewed the overall package of changes to freight charges and the likely impact of this package on freight operators and those of their customers who would be most affected. As part of this we have considered whether the package in the round alters the analysis of the FSC that we undertook ahead of our January 2013 conclusions document. In this context we consider that the increase in variable usage charges implied by the work that Serco undertook for Network Rail is material to the levying of the FSC. This is because the freight commodities that we are levying the FSC on will also face larger than average increases in variable usage charge. Although we anticipate that the FSC will, in large part, be passed on to freight customers, we have given weight to the fact that the freight commodities subject to the FSC will need time to adapt to the increases in the VUC and FSC as a package.

16.408 Taking into account the changes to variable charges, we have concluded that even introducing the FSC on the basis of the latest estimates of FAC and a gradual profile would have an unacceptably high impact on some users. We have considered whether we should phase the FSC in over a 10 year period (through CP5 and CP6) but concluded that we should not seek to constrain our thinking in PR18 in this way. We therefore concluded that by the time it is fully implemented in CP5 (and we discuss phasing below) the FSC should represent around 50% of what its full level would be based on a conservative assessment of the latest Network Rail/ L.E.K analysis. This amounts to 25% of the caps we set out in our January 2013 conclusions.

16.409 The FSC which we approve for CP5 is set out in Table 16.42. In our January 2013 conclusions, we explained that the FSC would apply to ESI coal, iron ore, spent nuclear fuel and potentially biomass. As explained in Annex B of our draft determination, we subsequently concluded not to levy a FSC on biomass for CP5.

Table 16.42: Our determination of the FSC for CP5, prior to phasing (2012-13 prices)

Commodity	FSC charge (£/kgtm)
ESI Coal	1.04
Spent nuclear fuel	3.00
Iron Ore	0.76
Other commodities	0.00

16.410 Setting the FSC at this level reflects movement towards greater cost reflectivity; freight will pay a greater share of the costs it imposes on the railway. However, the increase in the share of its costs that are recovered through charges is set to reflect our judgement of the appropriate balance of our statutory duties. On the one hand we have considered the need to promote efficiency and economy and have had regard to the funds available to the Secretary of State; on the other we have considered the need to both protect the interests of freight operators and their customers, to enable them to plan their businesses and our desire, and that of the governments (reflected in their guidance to us), to facilitate a strong freight sector.

16.411 When we announced our intention to introduce the FSC earlier this year we also concluded that the charge should be phased in over the course of CP5. Network Rail's conclusions on phasing are that it will follow the profile zero percent in years one and two, 20% in year three, 60% in year 4 and 100% in year 5. We have decided that this phasing profile should be retained in order to allow businesses time to adapt to the introduction of the charge. But as noted above 100% implementation now refers to full implementation of the CP5 level of the charge, which represents only around 50% of the full charge implied by the latest Network Rail/ L.E.K analysis. The FSC will therefore be phased in as outlined in Table 16.43 (subject to Network Rail's calculations).

Table 16.43: Our determination of the FSC by year for CP5

Commodity (£ per kgtm, 2012-13 prices)	FSC charge, 2014-15	FSC charge, 2015-16	FSC Charge, 2016-17	FSC Charge, 2017-18	FSC Charge, 2018-19
Phasing	0%	0%	20%	60%	100%
ESI coal	0.00	0.00	0.21	0.62	1.04
Spent nuclear fuel	0.00	0.00	0.60	1.80	3.00
Iron ore	0.00	0.00	0.15	0.46	0.76

16.412 A significant benefit of our analysis to support the FSC is that it has given us a much clearer picture of the level of subsidy that the governments provide to freight which can then be weighed against the broader benefits that the freight sector delivers.

16.413 We have worked with freight operators to secure commitment to reducing the avoidable costs that they impose on the network, including insufficient use of capacity. We expect to do more work with Network Rail, with freight operators and freight customers early in CP5 to get a better understanding of freight costs, to better inform PR18. In our forthcoming review of the structure of charges, working with the industry, we expect to consider how best to reflect the impact of freight traffic on the network in charges. We will also seek to move further towards our goal of greater cost reflectivity and understand more clearly the range of options that the freight sector has to reduce its impact on the network.

16.414 Table 16.44 sets out our forecast revenues from the FSC using Network Rail's SBP traffic forecast.

Table 16.44: Our forecast of FSC income in CP5 (with growth in traffic)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Great Britain						
Freight	0.0	0.0	1.5	4.6	7.6	13.7
England & Wales						
Freight	0.0	0.0	1.2	3.6	6.0	10.8
Scotland						
Freight	0.0	0.0	0.3	1.0	1.6	2.9

Note: numbers may not reconcile due to rounding.

Fixed track access charge

16.415 The fixed track access charge (FTAC) recovers Network Rail's net revenue requirement. The net revenue requirement is the revenue required by Network Rail to run its business, after accounting for the income received from variable track access charges, regulated station charges, other single till income and the network grant; it is explained further in chapter 14. The FTAC is only paid by franchised passenger train operators.

16.416 We consider that the way in which the fixed charge is allocated between franchised passenger operators is important, because if Network Rail makes the charge as cost reflective as possible, so that costs are recovered from those who cause them, it has important incentive properties.

Calculating the charge in CP4

16.417 The framework for calculating and allocating the FTAC was last reviewed as part of PR08 when we accepted Network Rail's proposal to disaggregate the net revenue requirement on a more cost reflective basis.

16.418 In calculating the FTAC for CP4, we calculated the net revenue requirement for England & Wales and separately for Scotland. In Scotland, the net revenue requirement, less the network grant from Transport Scotland, became the total FTAC which was then allocated to the Scottish franchised operator.

16.419 For England & Wales, the same approach was applied; the net revenue requirement, less the network grant from DfT, became the total FTAC which was then allocated to the franchised passenger operators in England & Wales.

16.420 Network Rail allocated FTACs to operators using the following steps:

(a) the infrastructure cost model (ICM) was used to calculate and allocate the relevant costs and income to each of the Strategic Route Sections (SRS). Some common costs types, for example British Transport Police costs, continued to be allocated between franchised passenger operators at a national level;

(b) the most relevant traffic metrics (e.g. train km, vehicle km, tonne km, electric train km) were used to divide each cost item between the operators using, or expected to use, that SRS;

(c) appropriate metrics were used to allocate national level costs to individual franchised passenger operators;

(d) any elements that should be ring-fenced and recovered from specific franchised operators, for example, costs related to particular enhancement projects were identified; and

(e) the elements for each franchised operator were summed to give the level of FTAC by franchised operator.

16.421 Regulatory Asset Base (RAB) related costs, such as amortisation and rate of return, also contribute to Network Rail's net revenue requirement and therefore are required to be allocated to franchised operators for recovery through the FTAC. For CP4, we accepted Network Rail's suggestion that the allocation of the RAB related costs should remain high level based on SRS level percentage splits of the long run renewals forecast. These costs, for CP4, were then allocated to operators based on the appropriate traffic metric.

16.422 The above approach resulted in the net revenue requirement for Scotland, recovered through the FTAC, being allocated to the Scottish TOC only. Similarly, the net revenue requirement for England & Wales, recovered through the FTAC, was allocated to franchised passenger operators specified by DfT only i.e. excluding ScotRail since it is specified by Transport Scotland.

16.423 An effect of the CP4 allocation approach was that ScotRail paid no FTAC for usage of the network in England & Wales and cross-border services running into Scotland paid no FTAC for their use of the Scottish network.

Calculating the charge in CP5

16.424 As part of the process for calculating charges in CP5, we indicated to Network Rail that further progress should be made towards cost reflective allocation[396] and transparency. Network Rail therefore developed proposals, specifically in relation to the FTAC allocation, for consultation with stakeholders[397]. In this FTAC consultation we asked Network Rail to:

(a) explore greater transparency in the allocation process e.g. through an increased level of disaggregation at route level[398]; and

(b) improve transparency by explaining the allocation of the charge between England & Wales and Scotland.

16.425 In its consultation, Network Rail proposed to build upon the approach taken to calculate the FTAC for CP4. The key proposed difference for CP5 is that, the majority of cost and income forecasts have been developed at a route level, consistent with Network Rail's newly devolved structure. Network Rail included a new step in its methodology to split the FTAC by route before allocating it to franchised passenger operators.

16.426 In relation to the RAB, Network Rail suggested that the approach should remain high level with allocation to routes based on route level percentage splits of the long run renewals forecast. In its consultation, Network Rail also made the following proposals:

(a) to retain the current approach to the allocation between England & Wales and Scotland;

(b) to calculate FTACs based on vehicle kms for remapped franchises in CP5;

(c) that facility charges should remain in place until the end of the agreed period as opposed to being incorporated into FTACs at control period changes;

(d) that the Welsh Valley Lines electrification project be funded through a facility charge via the operators benefitting from the investment rather than through an increased FTAC;

(e) that Crossrail costs be treated as a franchise re-mapping in order that FTAC is paid by Crossrail services upon their introduction;

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[396] *Setting the financial and incentive framework for Network Rail in CP5*, Office of Rail Regulation, May 2012. This may be accessed at http://www.rail-reg.gov.uk/pr13/publications/financial-incentives.php.

[397] *Fixed track access charges consultation*, Network Rail, November 2012. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784245.

[398] Route refers to Network Rail's ten devolved operating routes.

(f) to deduct TOC-specific facility charges and stations' long term charges from the specific operators' FTACs, to which they relate; and

(g) to provide an indicative split of the England & Wales RAB by route, which Network Rail expected to include as a memorandum item to the regulatory accounts in CP5.

Stakeholder responses to Network Rail proposals

16.427 The key points raised in response to the FTAC consultation[399] are outlined below.

16.428 FirstGroup and Transport Scotland questioned retaining the current approach to cross border services where the Scottish franchised passenger operator pays no FTAC for usage of the network in England & Wales, and English cross-border services running into Scotland pay no FTAC for their usage of the Scottish network. They suggested that Network Rail should consider an approach which allocates FTAC to operators in line with actual usage of the track.

16.429 Transport Scotland outlined its intention that the Caledonian Sleeper service be let as a new franchise. For a number of reasons, it suggested that the franchise could be treated in a manner broadly comparable with an open access operator on both sides of the border i.e. the operator would pay VUCs but no FTAC.

16.430 Go-Ahead suggested that given the proposal to create indicative route-based RABs, it would also be a positive step to calculate matching route-based single tills to improve transparency.

16.431 PTEG outlined its view that the FTAC proposals did not go far enough in improving cost reflectivity or transparency. For example, it felt that a full avoidable cost approach should be adopted and that moving to a route based approach from SRS was a backward step. TfL also took the latter view and felt that FTAC should be calculated at SRS and then aggregated to route level as required.

16.432 More generally, Northern Rail took the view that the proposed approach for CP5 was not significantly different from CP4.

Network Rail conclusions

16.433 Network Rail's conclusions[400] broadly reflected the proposals it consulted upon with two minor exceptions:

(a) small refinements to the allocation metrics for apportioning costs to operators; and

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[399] For more information on the responses, see *Conclusions on fixed track access charges consultation*, Network Rail, March 2013. This may be accessed at http://www.networkrail.co.uk/fixed-track-access-charges-consultation.pdf.

[400] *Fixed charges in CP5 – conclusions*, Network Rail, March 2013. This may be accessed at http://www.networkrail.co.uk/fixed-track-access-charges-consultation.pdf.

(b) remaining open to different options for how a new Caledonian Sleeper franchise might be charged.

Our draft determination and consultation responses

16.434 In our draft determination we welcomed the progress that Network Rail made in CP4 in significantly improving the approach to FTAC allocation by disaggregating costs and income at SRS level. We further welcomed the development of route based FTACs for CP5 which is necessary to bring the approach in line with Network Rail's newly devolved structure. Our draft determination set out our view on each of the above Network Rail proposals.

16.435 Transport Scotland provided the only response on the FTAC included in any of the consultation responses on the draft determination. Its response was focused on two issues:

(a) the approach to the allocation of the FTAC to cross-border services; and

(b) the charging treatment of the Caledonian Sleeper service.

16.436 On the former issue, Transport Scotland is of the view that a change in the approach i.e. the allocation of a portion of the Scottish FTAC to England & Wales TOCs running services north of the border and vice versa would bring Scotland into line with the rest of the GB rail network and would better align with the ORR's overall objectives for cost reflective charging and allocation. It made clear that it considers that any change to the current arrangements is a matter for ORR to determine on and that it does not consider that it requires prior agreement between the governments i.e. DfT and Transport Scotland. While Transport Scotland is clear that this is not an issue that can be deferred in full until the next periodic review, it stated that it is not its intention to destabilise current arrangements for the smooth transition into CP5 and that it would support a transitional arrangement through CP5.

16.437 On the latter issue, Transport Scotland stated that its position remains that the characteristics of the Caledonian Sleeper franchise are such that it may be more appropriate to treat it in a manner broadly comparable with an open access operator. However it was equally clear that this should in no way compromise the rights of the Caledonian Sleeper franchisee to overnight paths and station access.

Our final determination

16.438 Our final determination is unchanged from our draft determinations as set out below. However, we have provided more detailed positions in relation to the issues of cross border services and the treatment of the new Caledonian Sleeper franchise.

Cross border services

16.439 As noted above, concerns have been expressed by Transport Scotland around the current approach to FTAC allocation to cross border services. Under the current arrangements, Scottish specified franchise operators do not pay FTACs for their

usage of the English network and DfT specified franchised operators do not pay FTACs for their usage of the Scottish network.

16.440 A more cost reflective allocation to cross-border services could improve alignment with our charging objectives and create better incentives for more efficient provision and use of the network.

16.441 Since publication of the draft determination we have discussed this issue with Transport Scotland, DfT and Network Rail.

16.442 We note Transport Scotland's response stated that determining on this issue is a matter for us and that it requested transitional arrangements for CP5 be put in place.

16.443 From our recent discussions with Transport Scotland, DfT and Network Rail we understand that the current approach is consistent with the transitional arrangements put in place, agreed between the then Scottish Executive (now Scottish Government) and DfT and approved by us in 2005-06 when devolution of functions took place under the Railways Act 2005.

16.444 We consider that it is important that we, the governments and the industry understand fully the options for changing the current approach to allocation and their implications, and that we do this work as part of the overall PR18 work programme.

16.445 Therefore, we will lead the work with the governments and industry on this, starting early in 2014. Our role under the Access & Management Regulations is to set the specific charging framework and charging rules and we will take the decision on any change.

Franchise re-mapping

16.446 We support the principles of Network Rail's proposal for adopting an approach to calculating FTAC for any re-mapped franchised services. The approach should be straightforward, should reflect changes in network usage and should ensure consistency between re-mappings over the control period.

16.447 As noted above, Transport Scotland has suggested that the Caledonian Sleeper franchise could be treated in a manner broadly comparable with an open access operator i.e. the operator would pay VUCs but no FTAC. In its conclusions document Network Rail said that it remained open to different options for how a new Caledonian Sleeper service might be charged.

16.448 However, our role under Schedule 3 of the Access & Management Regulations is to set the specific charging framework and charging rules. We have decided that the new Caledonian sleeper service will be subject to a FTAC. This reflects the outcome of our recent discussions with Transport Scotland which concluded that correct and consistent application of the charging principles in the Access & Management Regulations means that if the sleeper is to be let as a separate franchise then it must be required to pay the fixed track access charge. To do otherwise would be to

discriminate not just between the sleeper and ScotRail but all other franchises let across the network (as the charging principles apply across the network as a whole).

Facility charges

16.449 Network Rail has proposed that facility charges should remain in place until the end of the recovery period rather than rolled into FTAC at the beginning of new control periods. Consistent with the investment framework, facility charges should continue to be paid by a new franchisee when a current franchise ends to reflect the benefit transferred to operators that run services on areas of the network that have been enhanced.

Welsh Valley Lines electrification

16.450 In its consultation response, the Welsh Government stated that it and DfT would provide us with a joint agreement on the principles of funding that have been agreed in relation to the Welsh Valley Lines electrification project. We understand that DfT will pay the costs in CP5 during construction, with relevant operators paying a facility charge once the enhancement comes into operation. DfT will recover its CP5 costs from the Welsh Government from the start of CP6. The agreement will therefore have no impact on the level of FTAC allocated to, and payable in, Wales during CP5.

Crossrail

16.451 We understand that some Crossrail services will start in CP5. For example, in March 2013, TfL announced the letting of a concession for the operation of existing rail services between London Liverpool Street and Shenfield from May 2015. This will result in the successful bidding operator taking over the stopping services currently operated by Greater Anglia. We would expect this transfer of services to Crossrail, and any other subsequent transfers, to be treated as a franchise re-mapping in order that FTAC is paid by Crossrail services upon their introduction.

Deductions

16.452 We agree with the proposal to deduct station long term charges and facility charges from the specific operator's FTAC to which they relate, as it improves cost reflectivity and incentives.

Indicative RAB split

16.453 We set out our approach to disaggregation in our May 2012 'Setting the financial and incentive framework for Network Rail in CP5' document. Greater disaggregation of price controls is in line with our desire to increase transparency of costs and revenues, support better whole-industry incentives and will in particular facilitate more local decision making (localism). Greater disaggregation, especially when combined with the increasing autonomy of routes under Network Rail's 'devolution' strategy, could also, in CP6, allow us to move towards a more comparative approach to regulation. Further disaggregation is also a key enabler for facilitating change in the rail industry, e.g. through devolution, alliances and potentially concessions.

16.454 Consistent with our approach, in our determination in Annex G we have included calculations of Network Rail's revenue requirement (including charges), debt and RAB by operating route. This will aid transparency and provide a basis for further development.

Our decision

16.455 Tables 16.45 to 16.48 show our determination of FTAC income for CP5 under a range of scenarios[401] given Network Rail's net revenue requirement:

(a) FTAC based on the adjusted WACC[402] approach after network grant is taken into account (this is our decision)[403];

(b) FTAC based on the cost of capital approach after network grant is taken into account (provided for information since the adjusted WACC is a 'short-term' change for CP5);

(c) FTAC based on the adjusted WACC approach assuming zero network grant (provided for information to illustrate the contrast if network grant were not paid); and

(d) FTAC based on the cost of capital approach assuming zero network grant (provided for information since the adjusted WACC is a 'short-term' change for CP5 and to illustrate the contrast if network grant were not paid).

16.456 It should be noted that the equivalent values for the FTAC included in the draft determination were significantly higher. For example, FTAC based on the adjusted WACC approach after network grant for GB included in the draft determination was £4.4bn. The equivalent final determination amount is £2.4bn. This difference can be accounted for by the following factors:

(a) the draft determination FTAC value did not split out Schedule 4 income – this has now been corrected for (reducing the FTAC by approximately £1bn over CP5). This did not affect the calculation of Network Rail's revenue requirements; and

(b) variable charges income has gone up, mostly accounted for by the increase in capacity charge income from franchised passenger operators, which has more than doubled between the draft and final determination.

[401] Our determination does not include any possible changes to the cross-border approach to paying FTAC.

[402] WACC is weighted average cost of capital. Please refer to chapter 12 for more information.

[403] Please refer to chapter 17 for our decisions on network grant.

Table 16.45: Our determination of fixed track access charge income for CP5 based on the adjusted WACC approach after network grant is taken into account (our decision)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain						
Fixed track access charge	406	326	343	449	855	2,379
England & Wales						
Fixed track access charge	319	242	257	308	635	1,760
Scotland						
Fixed track access charge	88	84	86	141	221	620

Note: Numbers may not reconcile due to rounding.

Table 16.46: Our determination of fixed track access charge income for CP5 based on the cost of capital approach after network grant is taken into account (provided for information)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain						
Fixed track access charge	501	428	362	462	1,579	3,331
England & Wales						
Fixed track access charge	388	319	263	234	1,257	2,462
Scotland						
Fixed track access charge	112	109	98	228	322	870

Note: Numbers may not reconcile due to rounding.

Table 16.47: Our determination of fixed track access charge income for CP5 based on the adjusted WACC approach assuming zero network grant (provided for information)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain						
Fixed track access charge	4,358	4,311	4,376	4,486	4,434	21,966
England & Wales						
Fixed track access charge	3,866	3,811	3,863	3,962	3,919	19,421
Scotland						
Fixed track access charge	492	500	513	525	515	2,545

Note: numbers may not reconcile due to rounding.

Table 16.48: Our determination of fixed track access charge income for CP5 based on the cost of capital approach assuming zero network grant (provided for information)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain						
Fixed track access charge	4,995	5,038	5,041	5,084	5,157	25,315
England & Wales						
Fixed track access charge	4,425	4,450	4,446	4,472	4,541	22,334
Scotland						
Fixed track access charge	570	588	595	612	616	2,981

Note: numbers may not reconcile due to rounding.

16.457 Once the network grant is established for CP5, Network Rail should continue to present the fixed track access charges on a gross basis (as if there were no network grant) as well as on an actual basis (with the network grant).

Station long term charge (LTC)

Background

16.458 Network Rail is responsible for the maintenance, repair and renewal of most of the stations it owns. The Station Facility Owner (SFO) is responsible for the day-to-day management and operation of the station. Network Rail is the SFO for a small number of its larger stations, known as managed stations. For the majority of stations, the SFO is a franchised train operator.

16.459 Network Rail is to continue to receive regulated income from stations in CP5 in the form of the station long term charge (LTC). This allows Network Rail to recover its efficient maintenance, renewal and repair costs associated with the franchised stations and managed stations that it owns.

16.460 Network Rail also receives income from managed stations qualifying expenditure (QX) and from franchised stations leases. However, with the exception of the management fee element of QX[404], these charges are not regulated by ORR. QX covers the cost of the SFO's day-to-day running and operation of its stations. It also covers the reasonable costs incurred by the SFO for procuring or providing the services and

[404] The SFO may levy the QX management fee on train operators using its stations. The management fee is set to recover two elements: central overheads in respect of operating, or procuring the operation of, the station, and a percentage profit that is applied to the entire QX charge. In CP4, it amounted to around £2.5m income to Network Rail in total for the whole control period.

amenities, which all users share. These charges are covered in more detail in Annex C.

Franchised station LTC for CP4

16.461 The franchised station LTC has been set separately for each station but has been designed to reflect a long run efficient maintenance, repair and renewal (MRR) spend over the course of the control period at the level of the group of stations operated by each SFO, referred to as the portfolio of stations.

16.462 Individual station charges are not intended to be fully reflective of the specific spend at each station within the control period. They are instead designed to represent the proportion of the MRR expenditure for the portfolio of stations that would be spent on each station in the long run (over 35 years). It is therefore important to emphasise that it is unlikely that for an individual franchised station, the LTC revenue will be equal to MRR expenditure at that station. We are of the view it would not be helpful for train operators to link the two.

16.463 With the exception of managed stations, the SFO at the majority of stations is a franchised train operator. Other railway undertakings (Beneficiaries) using a station pay the SFO a proportion of the station LTC and a QX charge (covering a proportion of the costs incurred by the SFO in running the station). The proportion of the station LTC payable by a Beneficiary is usually based on its proportion of vehicle departures at that station, calculated in accordance with the methodology set out in the Station Access Conditions.

16.464 Until recently Network Rail was responsible for the MRR of all its stations. In February 2012, Abellio Greater Anglia became SFO at stations previously operated by London Eastern Railway Limited. Abellio Greater Anglia has taken over the management and operation of the stations (with the exception of Stratford station) on a full repairing lease and pays only a peppercorn rent to Network Rail. There is a possibility that a similar reallocation of responsibility may take place for other new franchises, and in these instances charges may need adjusting to reflect reallocation of responsibility within the control period. The effect of these transfers of responsibilities would be neutral for Network Rail as we would adjust for them and log them up through the opex memorandum account and RAB as appropriate.

Managed station LTC for CP4

16.465 The managed station LTC has been calculated separately for each managed station. It has been calculated as the annual average of long run efficient MRR expenditure projected over a long time period (100 years). This was longer than for franchised stations in order to even out some of the extremes of spend found at these very large facilities. These extremes are more material for managed stations due to the scale of renewals costs at each station and the fact that there is no possibility to average across a larger portfolio.

Methodology for calculating the charge in CP5

16.466 In September 2012, Network Rail consulted with the industry on the structure of the station LTC at both franchised and managed stations in CP5. In January 2013, it concluded on this consultation.

16.467 Network Rail concluded that it would retain the station LTC structure in broadly its current form in CP5. This included continuing to:

(a) base the franchised station LTC on total MRR expenditure in CP5 at SFO portfolio level;

(b) calculate separate charges for each franchised station within each portfolio to reflect long term (35 year) average spend at individual station level;

(c) calculate the managed station LTC based on the annual average of long run efficient MRR expenditure projected over 100 years;

(d) levy the annual station LTC (for both franchised and managed stations) at a constant level for each year in CP5, albeit with uplifts for RPI; and

(e) exclude the cost of capital associated with stations from the station LTC. This was to give a more meaningful cost reflective charge, i.e. reflective of expected expenditure across the relevant SFO's stations portfolio during CP5.

16.468 The main change to the methodology for CP5 was that Network Rail concluded that it would recover Stations Information and Security Systems (SISS) maintenance, renewal and repair costs from the station LTC for franchised stations rather than FTAC.

16.469 Network Rail also proposed to include SISS maintenance, renewals and repair expenditure in the station LTC in CP5 for managed stations. In CP4 the maintenance and repair costs in relation to SISS assets at managed stations have been captured through the stations QX charge and FTAC respectively. It proposed this change in an e-mail to stakeholders in October 2012, shortly after the publication of its consultation letter.

16.470 In its consultation document, Network Rail proposed to charge at the portfolio level, rather than by station. This would involve each SFO receiving a bill for a single regular charge, reflecting the agreed settlement figure across its entire portfolio, rather than a charge for each station. In recognition that an SFO may need to recover some of the proposed portfolio station LTC from beneficiaries at some or all of its stations, Network Rail proposed providing a percentage breakdown of portfolio costs by station. As a result of stakeholder responses to its consultation, in its January 2013 conclusions, Network Rail stated it would not adopt this proposal. Instead, as with CP4, it concluded to levy a charge for each individual station.

Our assessment of Network Rail's methodology for calculating the station LTC

16.471 We are content with Network Rail's conclusions regarding its methodology for the station LTC for CP5. In particular we agree with Network Rail's conclusion that:

(a) the structure of the station LTC should remain broadly the same in CP5 as in CP4. This is a view shared by the majority of stakeholders that responded to Network Rail's consultation;

(b) SISS expenditure should be included within the station LTC. This is more transparent and cost reflective than recovering SISS expenditure through the FTAC, since SISS expenditure can accurately be allocated to individual stations;

(c) SISS maintenance and repair at managed stations is treated as a landlord responsibility. This will result in the SISS expenditure categories captured in the managed station LTC being consistent with those captured in the franchised station LTC; and

(d) it continues to charge SFOs at station level, rather than at a portfolio level. The reason Network Rail gave initially for proposing to bill at portfolio level was to simplify charging arrangements. Responses from stakeholders suggested that it would instead result in an increase in the administrative burden on stakeholders.

Network Rail's SBP station LTC income forecast

16.472 The station LTC income forecasts Network Rail proposed in its SBP were based on its forecasts of stations MRR expenditure on buildings and SISS. Network Rail applied a 16.1% efficiency overlay to the element of its pre-efficient station LTC income forecast relating to the recovery of buildings expenditure. This was inconsistent with the buildings expenditure efficiency overlay Network Rail submitted in its high-level strategic planning model (which it refers to as its 'Tier 0' model), as part of the SBP, which was 16.6%. Network Rail later confirmed that an efficiency overlay of 16.6% should have been applied, and on 23 April 2013, Network Rail published its draft station LTC price lists on this basis.

16.473 Network Rail applied an efficiency overlay of 15.0% to the element of its pre-efficient station LTC income forecast that is to recover SISS expenditure. This was consistent with the efficiency overlay in its high-level strategic planning model.

16.474 Network Rail's SBP forecast only included SISS renewal costs. Network Rail has advised that it also intended to include SISS maintenance and repair costs. It was unable to correct this error in time for inclusion in our draft determination. We agreed we would take this into consideration in our final determination. Network Rail stated that it did not believe that this error would result in a material increase to LTC income.

Our draft determination

16.475 In our draft determination we set stations LTC income so it was consistent with our view of efficient CP5 stations MRR expenditure on buildings and SISS. We calculated this by adjusting Network Rail's SBP submission on station LTC income to reflect adjustments we made to pre-efficient stations expenditure and our draft determination efficiency assumptions.

16.476 Since Network Rail had not at this stage identified the SISS maintenance and repair expenditure for the stations where it carries out these activities, our station LTC income figures did not include the element of station LTC that recovers this expenditure.

Work done since draft determination

16.477 Network Rail has now identified the SISS maintenance and repair expenditure for those stations where it is contractually responsible for carrying out these activities, and reflected these in its July 2013 draft determination consistent price lists.

16.478 Since publishing our draft determination, we identified a mistake in the modelling used to calculate Network Rail's draft price lists, for both the buildings and the SISS elements of station LTC. While it did not impact on the draft CP5 annual average LTC at the portfolio level, it did have an impact on the allocation of expenditure across each SFO's portfolio of stations on a given route. Network Rail corrected this mistake when it published its draft determination-consistent draft price lists in July 2013. Network Rail also made a few other minor adjustments to where expenditure had been classified in its SBP in respect to some stations. We have incorporated these adjustments into our final determination of stations income.

Responses to our draft determination

16.479 We received a response from First Capital Connect (FCC) stating that it understood that in the absence of us determining any station LTC rates for stations where Greater Anglia is SFO (with the exception of Stratford station), there would be no station LTC for these stations and therefore no figure to form the basis of the calculation of FCC's contribution towards the LTC in respect of the stations where FCC is a beneficiary. FCC considered that this is because the National Stations Access Conditions (NSACs) tie a beneficiary's common charges under a Station Access Contract (SAC) to the quoted Qualifying Expenditure and an LTC.

16.480 As discussed above, Network Rail no longer has MRR responsibilities at stations for which Greater Anglia is SFO (with the exception of Stratford station). We are therefore not determining the station LTC for these stations as part of PR13. We do not agree with FCC that there would be no station LTC to form the basis of the calculation of FCC's contribution towards the station LTC in respect of the Greater Anglia stations where it is a beneficiary. In December 2008, ORR issued a review notice (the "LTC review notice") specifying the relevant changes which it proposed to make to give

effect to our conclusions on a review of (a) the amount of the Long Term Charge payable in respect of each Station, and (b) the manner in which, and the dates by which, those amounts became payable. In March 2009, ORR issued a review implementation notice, which directed each of the parties to each of the Relevant Access Agreements (as defined in the earlier LTC review notice) to amend those Access Agreements so that the relevant changes specified in the LTC review notice came into operation on and from 1 April 2009. Those notices contained an effective date for the commencement of the LTC, but did not contain an end date.

16.481 In 2012, when Greater Anglia became SFO for the stations for which Network Rail no longer has MRR responsibilities in respect of the Greater Anglia franchise, the LTC for these stations continued as directed by ORR at PR08.

16.482 In light of this, and in the absence of new station LTCs being set by us in respect of these Greater Anglia stations, the LTC which is in the station access agreements between Abellio Greater Anglia and FCC will continue. As matters stand, it is for Greater Anglia and DfT to establish the station charges for the Greater Anglia stations. If the charges do change from the current station LTCs, beneficiaries at Greater Anglia stations will have to calculate their contribution to the revised station LTCs in accordance with the station access conditions and will need to amend their relevant station access agreements under section 22 of the Act to reflect the revised station LTC, and submit these for our approval.

Our determination

16.483 We have adjusted Network Rail's SBP submission on station LTC income to reflect our view of efficient CP5 stations MRR expenditure on buildings and SISS.

16.484 We did this by making an adjustment to reflect our assessment of pre-efficient expenditure on stations buildings and SISS, and applying our efficiency overlay for the final year of CP5. This is in order for the station LTC to reflect post-efficient expenditure on stations.

16.485 The efficiency overlays we applied are stated in Table 16.14. These have changed since our draft determination. Our assessment of efficient buildings and SISS MRR expenditure is described in chapter 8 in our assessment of maintenance and renewals expenditure.

16.486 In addition to these we incorporated the corrections Network Rail has made between the SBP submission and its July 2013 draft price lists, for example in relation to the inclusion of SISS maintenance and repair costs within the LTC - SISS expenditure figures.

16.487 Tables 16.49 to 16.51 show our forecast station LTC income for CP5. The figures are accurate to the number of decimal places shown: Network Rail will publish actual charges, to a greater number of decimal places, in its price lists.

Table 16.49: Our forecast of station LTC income for CP5 – Great Britain

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Managed stations							
LTC – buildings expenditure	22	25.5	25.5	25.5	25.5	25.5	127.6
LTC – SISS renewals	-	4.8	4.8	4.8	4.8	4.8	23.8
LTC – SISS maintenance and repair	-	1.5	1.5	1.5	1.5	1.5	7.5
LTC – total	**-**	**31.8**	**31.8**	**31.8**	**31.8**	**31.8**	**159.0**
Franchised stations							
LTC – buildings expenditure	134	102.8	102.8	102.8	102.8	102.8	514.0
LTC – SISS renewals	-	15.9	15.9	15.9	15.9	15.9	79.5
LTC – SISS maintenance and repair		0.7	0.7	0.7	0.7	0.7	3.4
LTC – total	**-**	**119.4**	**119.4**	**119.4**	**119.4**	**119.4**	**596.9**

Notes:

1. In CP4 SISS expenditure was not recovered through the stations long term charge. It is therefore only possible to compare CP5 stations buildings expenditure with CP4. CP4 amounts are as per our PR08 Determination.
2. Stations long term charge income for Greater Anglia stations has been removed from the CP4 figures, so CP4 and CP5 can be compared on a like for like basis.
3. Numbers may not reconcile due to rounding.

Table 16.50: Our forecast of station LTC income for CP5 – England & Wales

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Managed stations							
LTC – buildings expenditure	20	23.8	23.8	23.8	23.8	23.8	118.9
LTC – SISS renewals	-	4.3	4.3	4.3	4.3	4.3	21.3
LTC – SISS maintenance and repair	-	1.3	1.3	1.3	1.3	1.3	6.6

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
LTC – total	**-**	**29.4**	**29.4**	**29.4**	**29.4**	**29.4**	**146.9**
Franchised stations							
LTC – buildings expenditure	120	92.7	92.7	92.7	92.7	92.7	463.7
LTC – SISS renewals	-	15.2	15.2	15.2	15.2	15.2	76.0
LTC – SISS maintenance and repair		0.4	0.4	0.4	0.4	0.4	2.1
LTC – total	**-**	**108.4**	**108.4**	**108.4**	**108.4**	**108.4**	**541.9**

Notes:

1. In CP4 SISS expenditure was not recovered through the stations long term charge. It is therefore only possible to compare CP5 stations buildings expenditure with CP4. CP4 amounts are as per our PR08 Determination.
2. Stations long term charge income for Greater Anglia stations has been removed from the CP4 figures, so CP4 and CP5 can be compared on a like for like basis.
3. Numbers may not reconcile due to rounding.

Table 16.51: Our forecast of station LTC income for CP5 - Scotland

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Managed stations							
LTC – buildings expenditure	2	1.7	1.7	1.7	1.7	1.7	8.7
LTC – SISS renewals	-	0.5	0.5	0.5	0.5	0.5	2.5
LTC – SISS maintenance and repair	-	0.2	0.2	0.2	0.2	0.2	0.9
LTC – total	**-**	**2.4**	**2.4**	**2.4**	**2.4**	**2.4**	**12.1**
Franchised stations							
LTC – buildings expenditure	15	10.1	10.1	10.1	10.1	10.1	50.3
LTC – SISS renewals	-	0.7	0.7	0.7	0.7	0.7	3.5
LTC – SISS maintenance and repair	-	0.3	0.3	0.3	0.3	0.3	1.3

£m (2012-13 prices)	2013-14 (CP4)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
LTC – total	**-**	**11.0**	**11.0**	**11.0**	**11.0**	**11.0**	**55.1**

Note: In CP4, SISS expenditure was not recovered through the stations long term charge. It is therefore only possible to compare CP5 stations buildings expenditure with CP4. CP4 amounts are as per our PR08 Determination.

16.488 Included within Network Rail's July 2013 draft price lists were draft stations charges consistent with our draft determination of stations charges income. We agree with the methodology used to allocate its charges across stations and estimate the following stations LTCs based on Network Rail's allocation, but adjusted so they are consistent with our final determination of stations charges income.

16.489 Table 16.52 shows our estimate of the station LTC for each managed station.

Table 16.52: Our forecast of managed station LTCs, broken down by station

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
London Fenchurch Street	0.7	0.7	0.7	0.7	0.7	3.3
London Liverpool Street	3.3	3.3	3.3	3.3	3.3	16.4
London St. Pancras (low level)	0.5	0.5	0.5	0.5	0.5	2.5
London Charing Cross	0.9	0.9	0.9	0.9	0.9	4.7
London Bridge	1.3	1.3	1.3	1.3	1.3	6.4
London Cannon Street	0.5	0.5	0.5	0.5	0.5	2.5
Leeds	3.2	3.2	3.2	3.2	3.2	15.9
London King's Cross	1.9	1.9	1.9	1.9	1.9	9.6
Birmingham New Street	2.5	2.5	2.5	2.5	2.5	12.3
Liverpool Lime Street	1.0	1.0	1.0	1.0	1.0	5.1
Manchester Piccadilly	1.7	1.7	1.7	1.7	1.7	8.5
London Euston	1.6	1.6	1.6	1.6	1.6	8.1
Edinburgh Waverley	1.2	1.2	1.2	1.2	1.2	6.0
Glasgow Central	1.2	1.2	1.2	1.2	1.2	6.2
London Victoria	4.5	4.5	4.5	4.5	4.5	22.6

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
London Waterloo	2.7	2.7	2.7	2.7	2.7	13.3
London Paddington	3.1	3.1	3.1	3.1	3.1	15.6
Total	**31.8**	**31.8**	**31.8**	**31.8**	**31.8**	**159.0**

Note: Numbers may not reconcile due to rounding.

16.490 Table 16.53 shows our estimate of the station LTC totals by SFO.

Table 16.53: Our forecast of franchised station LTCs, broken down by SFO

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Arriva Trains Wales	8.1	8.1	8.1	8.1	8.1	40.3
c2c	2.4	2.4	2.4	2.4	2.4	12.0
Chiltern Railways	2.7	2.7	2.7	2.7	2.7	13.6
East Coast	2.6	2.6	2.6	2.6	2.6	12.8
East Midlands Trains	3.2	3.2	3.2	3.2	3.2	16.0
First Capital Connect	4.1	4.1	4.1	4.1	4.1	20.4
First Great Western	10.6	10.6	10.6	10.6	10.6	53.1
First ScotRail	11.0	11.0	11.0	11.0	11.0	55.0
First/Keolis Transpennine	1.4	1.4	1.4	1.4	1.4	7.2
Greater Anglia	0.01	0.01	0.01	0.01	0.01	0.1
London Midland	6.8	6.8	6.8	6.8	6.8	33.8
London Overground	3.0	3.0	3.0	3.0	3.0	14.9
London Underground	1.1	1.1	1.1	1.1	1.1	5.5
Merseyrail	7.1	7.1	7.1	7.1	7.1	35.4
Northern Rail	11.3	11.3	11.3	11.3	11.3	56.5
South West Trains	11.3	11.3	11.3	11.3	11.3	56.4
Southeastern	15.0	15.0	15.0	15.0	15.0	74.8
Southern Railway	12.4	12.4	12.4	12.4	12.4	62.0

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	Total CP5
Virgin (West Coast)	5.4	5.4	5.4	5.4	5.4	26.9
Total	**119.4**	**119.4**	**119.4**	**119.4**	**119.4**	**596.9**

Note: Numbers may not reconcile due to rounding.

Decision on charges and on-rail competition

Draft determination

16.491 In the draft determination we explained our plans to issue a further consultation about on-rail competition. We subsequently published this[405] on 14 June 2013.

16.492 On-rail competition is direct competition between rival train operating companies competing against each other to attract passengers. Our consultation outlined options for change in allowing access to open access operators, who must presently pass a test that their access will not be primarily abstractive (NPA), i.e. that it will generate new-to-rail business rather than merely abstracting business from existing operators. Under our current approach we would not expect to approve applications with ratios of generation to abstraction below 0.3 to 1.

16.493 The options we proposed in our consultation paper involved increasing the opportunities available to open access operators, but at the cost of their bearing additional charges in the form of a mark-up over and above the variable access charges they currently pay to Network Rail.

16.494 We presented two options for reform (Options 2 and 3) which were compared with Option 1, where we would not impose mark-ups on open access services and consequently would retain the NPA test in broadly its current form. Options 2 and 3 differ in the method of calculation of the mark-up as follows:

(a) under Option 2 an open access operator would, in return for a partial relaxation of the NPA test, pay a mark-up as a contribution to Network Rail's fixed costs calculated on the basis of the level of abstraction that its services would bring over and above the permitted level; and

(b) under Option 3 an open access operator would, in return for a partial relaxation of the NPA test, pay a mark-up calculated in a similar manner to the way that charges are currently calculated for franchised passenger services and/or similar to the ways in which we envisage these charges evolving in the future on all of its services. Two potential variants of Option 3 were discussed. They involved aligning the charging structure for open access operators failing the NPA test

[405] *Periodic review 2013: on-rail competition: consultation on options for change in open access*, Office of Rail Regulation, June 2013. This may be accessed at http://www.rail-reg.gov.uk/pr13/consultations/open-access.php.

with, in the case of 3A, the charging regime that franchised passenger operators currently face and, in the case of 3B, an estimate of the avoidable costs caused by open access.

Related issues

16.495 Several other issues are likely to affect developments in open access in CP5.

16.496 Open access is limited, less than 1% of train km, in part because there are substantial other barriers to entry including the governments' current approach to the quantity of franchise services, uncertainty about factors including future access rights and levels of charges, and the way in which Network Rail manages network capacity and the timetabling process.

16.497 Secondly, as described earlier in this chapter there has been a recalculation of the rates of the capacity charge, which are paid by operators on train kilometres to compensate Network Rail for the increase in the Schedule 8 performance payments it is likely to have to make if traffic increases. If this recalculated capacity charge were applied in full to existing open access operators their combined annual bill would increase several fold. We have put arrangements in place to protect existing open access operators (OAOs) and to assist new entrants but the new rates may still act as a deterrent to open access entry or to expansion of existing services in CP5.

16.498 Also, as described earlier in this document, following PR13 there will be an extensive review of the structure of charges in the early part of CP5 with a view to improving cost reflectivity. This review will address a number of issues of importance to open access but it may mean both that a new open access system could be rapidly superseded and that uncertainty over the future of the charging regime would tend to deter open access entry while the review is taking place.

16.499 Lastly, changes are likely at the European level. Earlier this year, the European Commission published proposals for its fourth railway package. We expect the final text of the fourth package to require the opening up of domestic passenger services with a view to encouraging increased competition, albeit Member States would have the option of limiting such rights of access where they would compromise the economic equilibrium of public service contracts. We will be monitoring these developments and reviewing our policies during CP5 to ensure consistency with any final measures.

Responses to our consultation

16.500 We met with key stakeholders during July 2013 and received 21 written responses to our on-rail competition consultation early in August 2013. We were particularly keen to establish whether the possible changes would create real commercial opportunities and how they interacted with other changes that will affect open access.

16.501 The responses fell into three main groups. First, a small number of responses made general pro-competition arguments, urging us to promote open access. These

included detailed analysis of the benefits of competition by the Centre for Policy Studies and a letter of support for more open access from a group of MPs.

16.502 The second group were broadly supportive of on-rail competition and mainly from members of the industry (including actual or potential open access operators). They directly addressed the detailed consultation questions. This group showed little enthusiasm for major changes now in advance of a review of the structure of charges, but some support for more cost-reflective charges. For existing OAOs, FirstGroup (the parent company of Hull Trains) said it would prefer the retention of the current system pending the forthcoming structure of charges review while Arriva (the parent company of Grand Central/Alliance) was the main advocate of significant change now, arguing in favour of a modified version of the consultation's Option 3 based on a mark-up equivalent to the volume incentive plus a margin on the variable track access charge. OAOs also wanted us to reconsider certain technical aspects of our approach to the NPA test. They argued that the present method underestimates the true generation to abstraction ratios and that the test should also consider other factors, such as differences in customer benefit. They were also concerned that the EU's proposed economic equilibrium test, which could replace the NPA test, may be too narrowly defined, focussing on the cost to public service contracts and ignoring wider economic benefits.

16.503 The third group consisted of a number of responses that expressed concerns about relaxation of the NPA test and expansion of open access. These included arguments from funders and others that the risk of additional abstraction may reduce franchise revenue and so the funds available, arguments that the present system of charges understates the costs of open access and that open access has pre-empted other more advantageous options, and responses supportive of central management and/or public funding and opposing increased open access on principle.

16.504 Only TfL favoured Option 2, but on the basis that the mark-up should be 100% of the value of the excess abstraction and paid to the funders affected. Most other respondents were opposed to Option 2, FirstGroup calling it a "non-starter". Consultees said it was complex and unpredictable, placed too much weight on the precise outcome of uncertain NPA test modelling, would involve them in bilateral negotiation with Network Rail, would make OAO business planning more difficult and would not necessarily fit with a transition to a new charging structure.

16.505 Consultees were generally more receptive to cost based mark-ups (Option 3) but there was considerable variation in views as to how this option should work. There was some support for the idea of OAOs and franchisees paying the same charges but with different interpretations as to what that meant, e.g. whether it included covering a franchise premium. Some thought that comparable charges might emerge from the review of the structure of charges and that the review might result in higher variable charges that depended on the features of particular paths. Doubts were expressed about the use of the FTAC as a mark-up because it varies from year to year, is an

"artificial construct" resulting from decisions on other factors, and is not paid by franchisees on additional trains. However, some supported a mark-up of some kind, partly because it would help incentivise Network Rail to provide capacity.

Assessment of the options

16.506 The criteria we apply in assessing the options were set out fully in the consultation paper. We consider them in the light of our strategic objectives - such as supporting a better service for customers, securing value for money from the railway and promoting an increasingly dynamic and commercially sustainable sector - and in the light of our statutory duties. Relevant duties include those to promote competition, to have regard to the funds available to ministers, to provide efficiency and economy on the part of railway service providers and to enable those providers to plan their services.

16.507 Since both options 2 and 3 involve adjustment to access charges we also need to consider the Access & Management Regulations and their requirements that a mark-up should promote efficiency, be transparent and non-discriminatory, ensure optimum competitiveness and not exclude the market segment.

16.508 While other considerations are also relevant the core question is whether any change would:

(a) meet the legal requirements;

(b) create real commercial opportunities for the benefit of consumers;

(c) be practical and capable of being implemented with a burden that is proportionate to the benefit; and

(d) without being unduly damaging to the resources of funders of franchises.

16.509 Option 2 does not appear to be likely to create real commercial opportunities. OAOs have told us that they consider it to be uncertain, subjective and not transparent. It would make their planning more difficult and they fear that it would result in a lengthy and uncertain process of negotiation. Even if we were able to specify the process to make it more transparent and allay some of these concerns, we think it likely that Option 2 would not create more opportunities and could not be simply implemented.

16.510 The various forms of Option 3 differ in complexity of calculation and implementation of the mark-up. They might create commercial opportunities particularly if the charge was set at a relatively low level, as it might be if it was based (as possibly in 3B) on a narrow definition of open access avoidable costs. However, such opportunities might well involve high abstraction rates, the risk of which could deter bidders for franchises and lead them to lower the premia they were willing to pay significantly. Indeed, given the need for a new project to fund both a mark-up and variable charges (including the capacity charge), it may be the case that projects would need to have particularly high abstraction to be viable.

16.511 We are not in a position to predict accurately the degree of abstraction that might take place if the NPA test is completely removed when an OAO is willing to pay the mark-up. It is possible that it might include considerable abstraction or, at least, that potential franchisees might fear that that could be the case. This could have a substantial impact on the governments' revenue from franchising. If we did not relax the test to that extent, but said that there may still be degrees of abstraction or particular cases that would be excessive, we should need to set up an additional, cost benefit, test to determine whether that was the case. That would be difficult to specify, introduce uncertainty and hinder transparency.

Decision

16.512 On balance we consider that it would not now be appropriate to introduce a mark-up that potential OAOs could opt to pay in exchange for a relaxation of the NPA test. The options for the form of the mark-up both have drawbacks and we cannot be confident that they would provide significant commercial opportunities. They would require further specification and there is a risk that they may not be transparent. Any change introduced now would be likely to be seen as temporary, pending the review of the structure of charges during CP5. There is a potential concern about operators' ability to bear any mark-up, particularly given the potential increases in the capacity charge.

16.513 In these circumstances we are deciding to maintain option 1 but in the context of:

(a) reviewing the operation of the NPA test;

(b) the CP5 review of the structure of charges; and

(c) continuing work to promote the efficiency of use of capacity and transparency in decisions about its provision.

16.514 We intend to review the operation of the NPA test and consider the criticisms that have been made of it by OAOs and others. This is likely to include consideration of whether:

(a) it adequately captures the effects of the increase in advance ticket purchases that are tied to a particular operator;

(b) the likely competitive reaction of franchisees to open access entry should be taken into account;

(c) the models being used are the most appropriate;

(d) the forecasting record of NPA tests can be assessed;

(e) differing customer or social benefits associated with a particular scheme might warrant access with differing NPA test results; and

(f) adaptation might be required in the light of likely developments related to the proposed EU equilibrium assessment.

16.515 As noted above, as part of the development work for PR18, we will be working with the industry to review the existing structure of charges and to consider how it might be improved, including how the incentive properties of charges might be strengthened. The project will have a number of aspects but one will be consideration of the scope for charges to send better signals for efficient provision and use of network capacity. This is likely to have implications for the allocation of capacity to open access.

16.516 As described elsewhere including chapters 3 and 19, this determination includes measures to promote the efficiency of use of capacity and transparency in decisions about its provision. In particular, Network Rail's volume incentive is being strengthened and an illustrative dashboard to measure its system operator performance has been drawn up and is being developed with Network Rail and the wider industry.

Miscellaneous charges

Freight incremental costs provision

16.517 In our July 2013 consultation on implementation, we noted that the incremental costs provision in paragraph 2.8 of Schedule 7 of freight track access contracts required updating to reset the date for the baseline capability of the network (which is currently listed in the contract as 1 April 2001). No consultee objected to this being updated and we will amend this date to be consistent with the baseline capability of the network we set through PR13.

Charter services

Introduction

16.518 Our conclusions on charges for charter operators will improve consistency between charter track access contracts and those of other passenger and freight operators, and ensure that the prices charter services will pay to Network Rail are more reflective of cost. On average, our analysis shows that this package will result in charter operators being marginally better off financially than they have been in CP4.

16.519 Charter services generally consist of excursion trains or privately hired trips which do not carry passengers at ordinary fares and which operate on a bespoke basis. The structure of charges for these operators is consistent with that for other operators, but takes account of the scale of charter operations so that the administrative burden associated with billing track access charges is not disproportionate. This is set out in the model charter passenger track access contract.

16.520 In 2013, five train operators holding charter passenger track access contracts operate charter services: DB Schenker, West Coast Railway Company, Direct Rail Services, GB Railfreight and First Great Western.

16.521 Charter services run approximately 410,000 train miles per year on Network Rail infrastructure. That represents less than 0.2% of total passenger (franchised and open access) mileage. Network Rail's income from these operators in 2012-13 was approximately £1m.

16.522 The ORR is responsible for developing the charging framework, including consulting on changes to charging policy. Network Rail is responsible for calculating all existing track access charges, including charges for charter operators, in accordance with the charging objectives and general guidance that we specify. As part of this, it consults on its charging proposals and then concludes on them. We review all Network Rail's charging proposals and conclusions.

16.523 Network Rail consulted on the structure of charges for charter operators on 28 May 2013[406].

16.524 We published our draft determination on 12 June 2013, and in this document we discussed some proposals in relation to charter operators. On 24 June 2013 we hosted a workshop with charter operators and Network Rail, to discuss some of these issues in more detail.

16.525 On 1 August 2013, Network Rail published its conclusions on the structure of charges for charter operators[407]. Subsequently, we hosted another workshop with charter operators and Network Rail on 8 August 2013.

16.526 On 23 August 2013 we published a letter outlining our draft conclusions on the structure of charges and Schedule 8 regime for charter operators in CP5[408].

16.527 We also published a charter implementation consultation on 13 September 2013, which outlined the specific changes we would need to make to charter track access contracts to implement our August 2013 proposals[409].

16.528 The rest of this section is structured as follows:

(a) charges for charter services in CP4;

(b) Network Rail's conclusions on charges for charter operators;

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[406] *Network Rail consultation: Structure of charges for charter operators in CP5*, Network Rail, May 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064786015.

[407] *Network Rail conclusions: Structure of charges for charter operators in CP5*, Network Rail, August 2013. This may be accessed at http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064787226.

[408] ORR letter of 23 August 2013, *Draft conclusions on structure of charges and Schedule 8 performance regime for charter operators*. This may be accessed at http://www.rail-reg.gov.uk/pr13/consultations/charter-operators.php.

[409] ORR letter of 13 September 2013, *Proposed contractual provisions to implement our draft conclusions on structure of charges and Schedule 8 performance regime for charter operators*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/charter-implementation-2013-09-13.pdf.

(c) our draft conclusions;

(d) responses to our draft conclusions; and

(e) our determination.

Charges for charter services in CP4

16.529 The regulated track access charges for charter operators in CP4 have consisted of the following:

(a) variable usage charge (VUC);

(b) traction electricity charge (EC4T);

(c) electrification asset usage charge (EAUC);

(d) slot charges; and

(e) cancellation charges.

16.530 The VUC is designed to recover Network Rail's operating, maintenance and renewal costs which vary with traffic. While the VUC for scheduled passenger services has been charged per vehicle mile, for charter services it has been charged per train mile in order to reduce the administrative complexity of the charge.

16.531 In CP4, three VUC rates applied to charter operators according to the following categories:

(a) non-steam-hauled charter train;

(b) steam-hauled charter train; and

(c) light locomotive movements (to which no charge applied).

16.532 These were consistent with other VUCs, but reflected the mixture of vehicles used in charter traffic. This simplification was intended to reduce administrative burden.

16.533 Light locomotive movements were defined as the movement of a single locomotive or two coupled together before working, or after having worked a relevant service. In CP4, light locomotive movements were not charged. If a locomotive carried one or more support coaches, however, they were no longer classified as light locomotives for the purposes of charging the VUC.

16.534 EC4T charges are used to recover the costs of traction electricity supplied by Network Rail to train operators. In practice, only around 1% of total charter traffic mileage is run with electric trains. In CP4, the charter model contract included provisions for EC4T charging on the basis of modelled rates and, as with freight services, an indexed electricity price. It did not include provisions for the year-end volume reconciliation applied in the case of other operators (passenger and freight).

16.535 In CP4, Network Rail deemed it administratively inefficient to put in place a robust process to charge charter operators for their EC4T, due to the very small amount of electric train miles operated by charter operators.

16.536 The EAUC is designed to recover the variable maintenance and renewal costs associated with electrification assets. The charter model contract in CP4 included provisions to collect the EAUC. As with the EC4T charges, however, Network Rail has historically deemed it to be administratively inefficient to levy the EAUC on charter operators.

16.537 In CP4, the capacity charge was not levied on charter operators. PR08 did not review the charging framework for charter operators, because at the time of the review, charter operators' track access contracts did not contain an access charges review re-opener to apply any changes to charges to implement PR08. The PR08 work for the CP4 capacity charge therefore did not look at whether and how the charge should be applied to charter operators. When we developed the model charter track access contract during CP4, rather than seeking to include a capacity charge immediately and in isolation outside of a periodic review, we decided it would be better to consider this in the round as part of PR13. We included an access charges review re-opener in the model charter track access contract so that a capacity charge (and other changes to charges) could be levied as part of PR13.

16.538 Slot charges recover Network Rail's costs for activities undertaken specifically for charter services for which it is not otherwise funded.

16.539 Cancellation charges are designed to recover the proportion of the slot charge that has already been incurred before the decision has been taken to cancel the train.

Network Rail's conclusions on charges for charter operators

16.540 As noted above, Network Rail consulted on the structure of charges for charter operators on 28 May 2013, and published its conclusions on 1 August 2013.

16.541 In its conclusions document, Network Rail proposed retaining the CP4 approach in a number of areas, namely: slot and cancellation charges, and continuing not to levy the capacity charge and station charges.

16.542 The changes it proposed are outlined below, and cover: VUC, EC4T charges and EAUC.

16.543 Network Rail concluded on four main changes for calculating the VUC in CP5 compared with CP4:

(a) updating the rate for all charter coaches, to be consistent with the Mark 1 coach rate on the CP5 published price list. This would replace the approach used in CP4 of averaging the rates for Mark 1, 2 and 3 coaches, due to the overwhelming majority of coaches used by charter operators being Mark 1;

(b) significantly amending the methodology for calculating the charge rate for a steam locomotive by updating the charge rate for a steam locomotive to be consistent with the average of the published rates for Class 98/5 and Class 98/8 steam locomotives, with a 2:1 weighting in favour of the Class 98/8, reflecting frequency of use; and

(c) refining the vehicle characteristics for the Class 98/5 and 98/8 steam locomotives, following engagement with charter operators and Network Rail's own analysis of vehicle characteristic information[410].

(d) calculating a VUC rate for charter light locomotive movements consistent with other charter journeys. For steam light locomotive movements, this would include locomotives travelling with a support coach.

16.544 Network Rail concluded that, notwithstanding the very small scale of electric charter traffic, charter services should be charged for EC4T on a consistent basis with other services in CP5. Subject to a sufficiently practical billing mechanism, the new arrangements were to include:

(a) the billing of charter services based on metered or modelled rates;

(b) using actual unit electricity rates paid by Network Rail, instead of indexed rates; and

(c) incorporating charter operators in the volume reconciliation.

16.545 Network Rail also concluded that it would charge the EAUC for charter services in CP5, at the same rates as that which applied to other passenger services. This was on a consistent basis with their conclusions on EC4T outlined above.

Our draft conclusions

16.546 We published our draft conclusions on the structure of charges and Schedule 8 performance regime for charter operators in our letter of 23 August 2013, where we outlined our conclusions in a number of different areas.

16.547 Our key conclusions were to:

(a) introduce benchmarks for the charter Schedule 8 regime calibrated on the basis of all delay minutes, and introduce a menu of incident caps and access charge supplements (ACS) options, which would deliver financial neutrality of the regime if performance benchmarks are met (discussed in chapter 20);

(b) broadly accept Network Rail's conclusions on structure of charges, while considering practicalities of implementing EC4T;

(c) bring charter services in line with other services with respect to levying a capacity charge; and

(d) retain CP4 arrangements in relation to Schedule 4.

[410] The refinements included:

a) Class 98/5 locomotive: increasing the number of axles from 4 to 6, resulting in an axle load of approximately 20 tonnes; and

b) Class 98/8 locomotive: increasing the vehicle weight from 142 tonnes to 150 tonnes and increasing the number of axles from 4 to 7, resulting in an axle load of approximately 21 tonnes.

16.548 In our consultation we also set out some initial analysis that indicated that the package of changes proposed would result in charter operators being marginally better off financially than they had been in CP4.

Responses to our draft conclusions and other developments

16.549 We received two responses to our 23 August 2013 consultation, from Network Rail and DB Schenker. These responses raised, amongst other things, certain issues on implementation that Network Rail then addressed in a 10 October 2013 letter to the industry[411].

16.550 The respondents welcomed our proposals in most areas. Some specific comments are outlined below. Our response to the issues raised is outlined in the following section in which we set out our decisions.

16.551 With respect to VUC, both Network Rail and DB Schenker were concerned that Network Rail's conclusions regarding billing steam light locomotives may not be feasible from a billing perspective. In Network Rail's October letter, it confirmed that for CP5 it would be able to identify and charge light locomotive movements, including steam light locomotive movements travelling with a support coach, consistent with its August conclusions document and ORR's draft conclusions. Specifically, it would do this through a manual process outside TABS.

16.552 With respect to EC4T, both DB Schenker and Network Rail raised concerns regarding the administrative complexity of Network Rail's original conclusions. Then in its October letter, Network Rail stated that the costs of including charter operators into TABS for the purpose of billing EC4T in CP5 would be disproportionately high in the short-term. Instead, Network Rail proposed to charge charter operators for their use of EC4T using modelled rates but not including them in the volume and cost wash-up for CP5. Network Rail planned to bring charging charter operators for EC4T into TABS in CP6.

16.553 DB Schenker noted the ORR's proposal in the draft conclusions in relation to the capacity charge, and said it would expect any capacity charge to be introduced in a similar way to the proposal put forward by freight operators in respect of the capacity charge for freight services. DB Schenker also said it would expect the level of flexibility Network Rail has in the timetabling of charter services to be taken into account in the level of any capacity charge rate through an appropriate discount. Network Rail said that it thought there should be a single wash-up for all charter services.

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[411] *Network Rail's revised proposal for EC4T and confirmation of the proposed treatment of light locomotive movements in CP5*, Network Rail, October 2013. The letter may be accessed at: http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/revised-proposal-for-EC4T.pdf.

16.554 DB Schenker also noted the ORR's comments around station charges and said it was pleased to note that Network Rail intended to develop and publish a tariff of standard charges for commonly requested services offered at its managed stations.

Our determination

Variable usage charge

16.555 On the VUC we reviewed the changes Network Rail made concerning vehicle characteristics of steam locomotives. Taking account of input from stakeholders, we are satisfied that the values it has used are appropriate with respect to axle load and weight distribution, and also with respect to dynamic forces. As a result, we are content that the refinements in the estimation of VUC which Network Rail has made are an improvement in terms of reflecting the costs that charter trains impose on the network.

16.556 We confirm Network Rail's conclusions (see Network Rail's August 2013 conclusion letter for further details) on three main changes for calculating the VUC in CP5 compared with CP4. These were:

(a) updating the rate for all charter coaches, consistent with its consultation proposal;

(b) significantly amending the methodology for calculating the charge rate for a steam locomotive; and

(c) estimating a VUC for a light locomotive movement that is consistent with other charter journeys.

16.557 We decided to introduce the VUC rates proposed by Network Rail. Our estimates of these rates are given in Table 16.54.

Table 16.54: Our determination of charter operator VUC rates by service types

Service type (2012-13 prices)	CP4 VUC rate (£/ train mile)	CP5 VUC rate as per our draft conclusions (£/ train mile)	Final CP5 VUC rate (£/ train mile)
Diesel or electric equipment	1.21	1.05	1.06
Steam equipment	1.45	1.05	1.06
Diesel or electric light locomotive	N/A	0.56	0.56
Steam light locomotive	N/A	0.60	0.61

Charges for EC4T and EAUC

16.558 We conclude that charter services should be charged for EC4T on a consistent basis with other services in CP5 and therefore confirm Network Rail's conclusions in this regard. We also confirm Network Rail's conclusions in its letter of 10 October 2013

with respect to EC4T, namely not to include charter operators in the volume and cost reconciliations as we agree with it that a pragmatic approach to billing EC4T for charter operators in CP5 is necessary.

16.559 We confirm Network Rail's conclusions to charge the EAUC for charter services at the same rates as that which applied to other passenger services. This approach brings charter operators into line with other operators. Network Rail has explained that it will charge the EAUC per vehicle mile, unlike other charges for charter which are typically per train mile. Our estimates of these charges are set out in Table 16.55.

Table 16.55: Our determination of passenger EAUC rates for CP5

(2012-13 prices)	DC (third rail)	AC (OLE)
CP5 passenger (pence/ electrified vehicle mile)	0.72	1.62

Capacity charge and links to Schedule 8

16.560 We confirm our draft conclusion to introduce a capacity charge for charter operators, to reflect their impact on capacity utilisation and hence costs they impose on Network Rail in relation to Schedule 8 payments.

16.561 With the introduction of benchmarks in the Schedule 8 charter regime, set out in chapter 20, on the basis of CP4 delays, we expect charter operators to be marginally better off than they are currently (see Table 16.9), even with the introduction of a capacity charge. Through this package of measures we are bringing the charter industry more in line with the other operators, with minimum disruption to charter operators' businesses.

16.562 As part of PR13, Network Rail has recalibrated the capacity charge. This would result in a very substantial increase in the charge for charter traffic. In light of our statutory duties and our assessment of the cumulative impact of PR13 on charter operators, we think it is appropriate to mitigate the impact of the full CP5 capacity charge rates for charter operators. We agree with consultation responses that it is appropriate to adopt a similar approach to mitigation to that which we have concluded on for freight. We explain this approach below.

Network Rail's estimate of the capacity charge

16.563 We asked Network Rail to prepare capacity charges for charter traffic in preparation for our final determination. Network Rail developed a pragmatic approach with reference to the capacity charge for freight operators, recognising the similarities in the use of capacity by the two groups of traffic.

16.564 Network Rail used the freight CP4 capacity charge rate as a starting point for calculating the charter CP4 capacity charge rate. It multiplied the freight rate by the ratio of the CP4 charter operator Schedule 8 payment rate and the CP4 freight operator Schedule 8 payment rate. Because in CP4 the charter operator Schedule 8

payment rate was the same as the freight operator rate, in practice this ratio was one and Network Rail therefore set the charter CP4 capacity charge rate to be equal to the freight CP4 capacity charge rate.

16.565 For the CP5 rate, the freight CP5 capacity charge rate, calculated by Arup as part of the PR13 recalibration, was used as a starting point. This was multiplied by the ratio of the CP5 charter operator Schedule 8 payment rate and the CP5 freight operator Schedule 8 payment rate. The Schedule 8 rates are explained in chapter 20 of this document.

16.566 Table 16.56 sets out the capacity charge rates which would apply for charter operators, based on the approach outlined above. These are estimates and the final values which will be levied on the operators will be set out in Network Rail's price lists which it will publish on 20 December 2013.

Table 16.56: Our determination of charter capacity charge rates for CP5

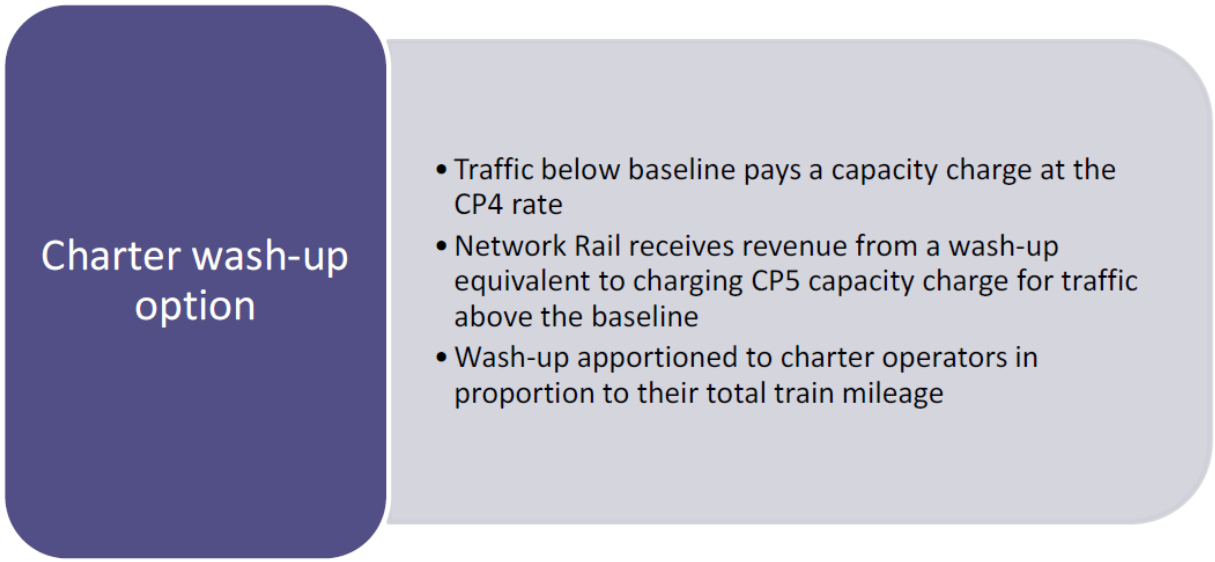
£ / train mile (2012-13 prices)	Weekday rate	Weekend rate
CP4 charter rate (to apply to traffic below baseline)	0.17	0.13
CP5 charter rate (to apply to traffic above baseline and apportioned to all traffic in the wash-up)	1.00	0.67

Our conclusions on implementing the capacity charge for charter traffic

16.567 We will implement a capacity charge which uses a wash-up as shown in Figure 16.3. This mechanism was included in our 30 September 2013 consultation on contractual provisions to implement options for the capacity charge in CP5[412].

[412] ORR letter of 30 September 2013, *Consultation on contractual provisions to implement options for the capacity charge in CP5*. This may be accessed at http://www.rail-reg.gov.uk/pr13/PDF/implementing-pr13-capacity-charge.pdf.

Figure 16.3: Outline of the charter wash-up option for the capacity charge



16.568 The mechanism means that:

(a) during the year, charter operators will pay the capacity charge at CP4 rates;

(b) at the end of the year, a reconciliation (or 'wash-up') will be carried out;

(c) for the purposes of the reconciliation, a baseline will be set across all charter operators using 2012-13 actual charter train miles;

(d) the reconciliation will determine the difference between the revenue that Network Rail would have received if full CP5 rates were applied to the actual charter traffic above the baseline and the revenue it has actually received;

(e) the reconciliation will be apportioned to charter operators, and each charter operator's proportion of the wash-up will be equal to the miles it runs relative to total miles run by all charter services; and

(f) the reconciliation will work so that where the charter traffic for that year corresponds to or is less than its 2012-13 level, the reconciliation will be zero.

Assessment of cumulative impact for charter

16.569 We have undertaken high level financial analysis to understand the impact of the overall package of changes for charter operators. Our financial analysis is shown in Table 16.49. Table 16.49 shows CP4 income for Network Rail from charter operators, and forecast CP5 annual average income. A positive net difference means a reduction in the total income paid by operators to Network Rail between CP4 and CP5.

16.570 To do this financial analysis, we have made the following assumptions:

(a) we have assumed CP4 Schedule 8 performance for charter operators;

(b) we have used average annual charter traffic in CP4 to calculate the values in Table 16.49, both with CP4 and with CP5 charges; and

(c) the analysis excludes income from slot and cancellations charges, for which no change is proposed.

16.571 Table 16.49 shows that overall we would expect a reduction in the total income received by Network Rail from charter operators, following the changes we have determined with respect to the charter Schedule 8 regime and track access charges. As per the SBP, in our determination of Network Rail's funding, we have included an assumption for charter income, but we have not modelled it in this level of detail.

Table 16.49: Our forecast of income from charter operators for CP5 (with constant traffic)

£'000 (2012-13 prices)	VUC	EC4T	Schedule 8	Capacity charge	Total
CP4 income	521	0	174	0	695
Forecast CP5 income	482	30	0	73	585
Net difference between CP4 and CP5 income	**39**	**-30**	**174**	**-73**	**110**

Note: with the introduction of benchmarks, the expected financial value of Schedule 8 would be zero at expected levels of performance.

Implementation

Implementation through the track access contracts

16.572 We have consulted on the changes to track access contracts that we considered necessary to implement our determination (based on the draft determination)[413]. Alongside taking into account the comments that were raised by stakeholders, in finalising these provisions we will also need to reflect any changes to policy we have made since the draft determination. We do not expect to consult again on the contractual changes that we will make to implement the determination, though we may seek views on specific issues if we consider this to be particularly necessary.

Price lists and new/amended charges during CP5

16.573 Alongside our review notices, on 20 December 2013, Network Rail will publish its final price lists which will apply for the whole of CP5. These will be consistent with our determination, and will be referenced in the track access contracts

16.574 Inevitably, following the issue of the final price lists for CP5, there will be situations during the control period when new or amended charges need to be set, for example, following the introduction of new rolling stock or where vehicles are modified. The existing model passenger and freight track access contracts currently provide for this, by allowing bilateral supplements to be made to the price lists through a process in Schedule 7.

[413] These consultations may be accessed via the PR13 consultation page: http://www.rail-reg.gov.uk/pr13/consultations/index.php.

16.575 We consulted on proposed changes to these price list supplement provisions in July 2013 with the aim of improving the process. We will take into account the comments we received on these (including those raised at the VTAC group) when we finalise the revised provisions for inclusion in the new Schedule 7 for CP5.

Implementation through the station access contracts

16.576 On 20 December 2013, Network Rail will publish a station long term charge price list consistent with our determination. Through our review notices, as part of the changes we make to stations access agreements for PR13, we will direct changes to update the stations long term charge for each station and to reflect the changes to how the costs for SISS are recovered.

Adjusting access charges for inflation

Background

16.577 Consistent with our approach to risk and uncertainty, as presented the financial framework chapter (chapter 12), in CP5 Network Rail's track access charges and station long term charges will continue to be adjusted each year for general inflation, as measured by the retail price index (RPI).

16.578 Network Rail's access charges, regulated station charges and Schedules 4 and 8 payment rates, caps and thresholds are set in real terms in our determination (i.e. 2012-13 prices for PR13) and are indexed each year in the control period to adjust for general inflation. The methodology used to index access charges is outlined in Schedule 7 of the various freight and passenger track access contracts. It is also set out in Part F of the National Station Access Conditions[414] and Part 6 of the Independent Station Access Conditions in relation to the station long term charge. The methodology used to index Schedule 4 & 8 payment rates, caps and thresholds is also included in the various freight and passenger track access contracts.

16.579 In CP4, freight and passenger track access contracts include slightly different indexation methodologies to adjust charges and Schedules 4 and 8 payment rates, caps and thresholds. Passenger track access contracts are adjusted for inflation using a November to November RPI adjustment, whereas freight track access use the average annual (January to December) RPI indexation rate. The indexation methodology used to adjust regulated station charges, as stated in the station access conditions, is consistent with the approach used in the passenger track access contracts.

16.580 In our draft determination, we said that we would set out our proposed indexation methodology in our consultation on implementing PR13, published on 12 July 2013.

[414] National Station Access Conditions (England & Wales) and National Station Access Conditions (Scotland).

16.581 In our consultation on implementing PR13, we said that the CP4, simple, indexation methodologies do not create a significant mismatch between the indexation adjustment and actual general inflation when changes in actual general inflation in the control period do not vary significantly. However, when general inflation is not stable, the mismatch between the indexation adjustment and actual general inflation could be more significant. This is because one of the weaknesses in the CP4 approach is that actual general inflation in 2008-09 is counted twice in the indexation factors for CP4 and actual general inflation in 2013-14 is not included. This could have an impact on Network Rail's revenues, particularly when general inflation rates are volatile.

16.582 In the consultation, we set out the formula that we proposed to use to index access charges to help address these issues. We proposed two changes to the way we index charges in CP5:

(a) to use a consistent indexation approach based on an annual average change in the Retail Prices Index (RPI) for all operators (passenger and freight); and

(b) to introduce a 'true-up' mechanism to more accurately take account of the general inflation risk that Network Rail faces. A 'true-up' mechanism would adjust forecast inflation assumptions for the actual financial effect that has been experienced.

Responses to our draft determination

16.583 Network Rail welcomed our thinking on the indexation methodology for CP5. It thought that this was an important issue as the choice of methodology would have a material impact on its CP5 income. Network Rail supported our proposal to move to an annual average approach as it thought that this should reduce its exposure to exogenous inflation risk and potential windfall gains / losses, as well as reduce the volatility of its customers' prices. Network Rail's own analysis suggested that the 'true-up' mechanism would typically result in closer alignment between its nominal costs and nominal revenue, over the control period. It also asked that we confirm whether this approach would apply to the network grant.

16.584 ATOC's response noted that the simple, RPI-based indexation approach that has operated since privatisation is both transparent and implementable, especially in the context of any changes to the franchising process and the potential exposure of TOCs to changes in charges at future periodic reviews. It also suggested that an RPI approach, based on a specific month before the start of the financial year, was more appropriate. Also, train operators, such as East Midlands Trains, thought that the proposed changes would have significant financial implications for franchisees.

16.585 Freight operators were also opposed to our proposals. GB Railfreight considered that the 'true-up' calculation method went against the principle of periodic reviews, i.e. of giving as much certainty as possible to operators and their customers over a five year period. Similarly, Freightliner considered that the 'true up' mechanism would add volatility to charges with a disproportionate increase in risk to operators (who it

considered were less able to bear volatility) from swings in forecast versus actual and that it created a timing mismatch between costs and revenues. Freightliner also thought that there would be an additional administrative cost as a result of the proposal.

Our comments on the responses to our draft determination

16.586 Network Rail supported our proposed approach to the indexation of access charges. However, the train operating companies did not support us and they have some concerns about the effects of our proposal on its accounts, e.g. the volatility of their profits.

16.587 As a result, we considered an alternative to our proposal, where we would log up the differences between actual inflation and our PR13 inflation assumptions to Network Rail's opex memorandum account. This would have meant that we could have retained the same approach to access charges as in PR08 but still ensured that Network Rail did not unduly gain/lose as a result of how we index its revenues for inflation. However, Network Rail was concerned with the effects of this proposal on its accounts, e.g. potential volatility in reported numbers.

16.588 Given the complexity of the effects on the industry of our proposed 'true-up' mechanism, we consider that is better not to use our proposed approach in CP5. However, we still consider there are benefits to the industry from revising the indexation methodology, so we will consider this issue in our PR18 development work.

Our determination

16.589 Having had regard to the consultation responses and our statutory duties, we have decided to maintain the existing CP4 approaches to indexation in the access contracts. However, given the tight timescales and difficulties arising from the publication by ONS in mid-December of the RPI November to November index, we will adopt the following arrangement to indexation in access contracts (and in the deed of grant):

(a) Network Rail will publish its price list in 2012-13 prices on 20 December 2013 (rather than in forecast 2014-15 prices). Access contracts and deeds of grant will then include provisions for prices to be uplifted to 2014-15 prices for the start of CP5[415];

[415] In PR08, Network Rail published its CP4 price list in 2009-10 prices (i.e. the price base for the first year of CP4). As such, access contracts did not require provisions to uplift charges from the PR08 determination price base (2006-07 prices) to 2009-10 prices. Instead, this inflation adjustment was done before the price list was published, i.e. outside of access contracts. In CP5, Network Rail will publish its price list in 2012-13 prices and so the inflation adjustment used to calculate charges in 2014-15 prices (the price base for the first year of CP5) will be set out within access contracts. This will make the calculation of inflation adjustments more transparent and should also provide a more direct link back to our PR13 determination.

(b) to assist its customers, we are asking that Network Rail issue a consolidated version of the price list uprated with 2014-15 prices by the start of CP5 for the first year of CP5 (and potentially a similar document for each subsequent year of CP5)[416]; and

(c) there are no other changes (and no true-up for network grant).

[416] These documents would have no status in the contract; the official price lists will remain those issued on 20 December 2013.

17. Network grant

Key messages in this chapter

- Network grants are paid directly by DfT and Transport Scotland to Network Rail 'in lieu of' some fixed track access charges.
- Our preferred method of funding Network Rail is for all of its income to come from train operators and other customers and not through network grant, but we recognise the governments' reporting issues and that in their budgets, they classify spend according to whether it is a capital or operating cost (operating spend is also referred to as current or resource) and network grant is treated as a capital cost, so our decision on the level of network grant affects the split between their capital and operating budgets, which could affect affordability.
- Therefore, we have decided to allow part of Network Rail's income to be provided directly by the governments through network grants, which will be set ex-ante for each year of CP5, as we did in CP4.
- To provide better transparency, we have set out clearly in Annex F, what the level of fixed track access charges would be in the absence of direct network grant payments for each of Network Rail's operating routes.

Main changes since our draft determination

- We have considered the responses to our draft determination and had further discussions with Network Rail and the governments and have decided that the network grants should be £17.7bn for England & Wales and £1.9bn for Scotland. In total for Great Britain the network grants will be £19.6bn, which is 3% lower than in CP4. This is substantially below the forecast level of Network Rail's capital expenditure in CP5 (£24.9bn).

Introduction

17.1 This section sets out our decisions on the level of network grant payments that we will allow Network Rail to receive from DfT and Transport Scotland in CP5 'in lieu of' some fixed track access charges.

Background

17.2 A proportion of Network Rail's revenue requirements have in the past been paid directly by DfT and Transport Scotland in the form of network grants in lieu of some fixed track access charges, on a pound-for-pound basis.

17.3 Our preferred method of funding Network Rail is for all of its income to come from train operators and other customers and not through network grants, but we recognise

the governments' reporting issues and that in their budgets, they classify spend according to whether it is capital or operating (operating spend is also referred to as current or resource) and network grant is treated as a capital cost, so our decision on the level of network grant affects the split between their capital and operating budgets, which could affect affordability.

17.4 Therefore, we decided in December 2012, to allow part of Network Rail's income to be provided directly by the governments through network grants, which will be set ex-ante for each year of CP5, as we did in CP4. The policy issues relevant to this decision are discussed in the financial framework chapter (chapter 12) and in our December 2012 financial issues decision document.

17.5 In PR08, we set the level of network grants with reference to the governments' reporting rules, which say that direct grants paid to Network Rail are accounted for as capital expenditure in the governments' accounts, whereas the equivalent money paid to train operating companies (who in turn pay track access charges to Network Rail) is accounted for as operating expenditure, i.e. current or resource expenditure. The two relevant financial tests that we used, which relate to the governments' budgeting and statistical reporting, were:

(a) **investment test**: this states that network grants that are accounted for as capital expenditure in the governments' accounts, cannot exceed Network Rail's capital investment (i.e. renewals and enhancements). Any network grants paid in excess of capital investment are accounted for as resource expenditure. This test applies in respect of the governments in England & Wales and in Scotland separately[417]; and

(b) **market body test**: this test requires that to be classified as a market body, Network Rail's annual income from sales (equal to access charges plus other single till income) covers at least half of the company's production costs (equal to operating and maintenance expenditure and statutory depreciation). This test applies to Network Rail as a whole and separate calculations do not need to be made for England & Wales and Scotland.

Summary of our draft determination

17.6 In our December 2012 financial issues decisions document, we said that given the importance of driving more commercial relationships in the industry, we are keen to see the level of network grants decline in CP5. Therefore, we did not strictly apply the governments' reporting rules in identifying the scenarios in the draft determination, but used them as a reference point. In particular, we looked at different approaches to how we can factor headroom into the calculation. The adjustment for headroom

[417] The level of the network grants in CP4 is similar to our PR08 forecast of Network Rail's capital expenditure.

recognised that Network Rail's actual income and expenditure in CP5 could be different to our forecast and, everything else being equal, the headroom reduces the maximum level of the network grants in our calculations.

17.7 In PR08, we only applied headroom to the market body test to increase the threshold required for the test from 50% to 55% (i.e. we applied a headroom of 5%). For PR13, we thought it was more appropriate to apply headroom to both the investment test and the market body test. Therefore, we have shown below the levels of grant that we could allow for England & Wales and Scotland in CP5 based on headroom assumptions of 5%, 15% and 25%. These assumptions were derived from our work on modelling the limits on financial indebtedness and our analysis of the potential variance in Network Rail's expenditure in CP5.

17.8 We also said that we were considering how forthcoming changes to the governments' budgeting and statistical reporting, may affect the calculation and use of the market body test[418].

17.9 Tables 17.1, 17.2, 17.3 set out our assessment of the options for the level of network grant payments in CP5, calculated on the basis set out above.

Table 17.1: Our assessment of the options for CP5 network grant payments in Great Britain

£m (2012-13 prices)	Great Britain					
PR08	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**CP4 total**
Network grant	4,127	4,142	4,221	4,016	3,680	20,186
PR13	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**CP5 total**
Scenario 1: 5%	3,952	3,985	4,034	4,037	3,578	19,586
Scenario 2: 15%	3,549	3,569	3,613	3,613	3,202	17,544
Scenario 3: 25%	3,146	3,152	3,192	3,189	2,825	15,504

Table 17.2: Our assessment of the options for CP5 network grant payments in England & Wales

£m (2012-13 prices)	England & Wales					
PR08	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**CP4 total**
Network grant	3,724	3,746	3,774	3,703	3,398	18,344
PR13	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**CP5 total**
Scenario 1: 5%	3,547	3,569	3,607	3,654	3,284	17,661
Scenario 2: 15%	3,183	3,194	3,228	3,270	2,939	15,813
Scenario 3: 25%	2,819	2,819	2,849	2,886	2,593	13,966

[418] The European System of Accounts 2010 (ESA10) will replace the European System of Accounts 1995 (ESA95) for reporting of the UK National Accounts from 2014. ESA10 includes a different definition of production costs to ESA95.

Table 17.3: Our assessment of the options for CP5 network grant payments in Scotland

£m (2012-13 prices)	Scotland					
PR08	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**CP4 total**
Network grant	403	396	447	313	282	1,842
PR13	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**CP5 total**
Scenario 1: 5%	405	416	427	383	294	1,925
Scenario 2: 15%	366	375	385	343	263	1,731
Scenario 3: 25%	327	333	343	303	232	1,538

Responses to our draft determination

17.10 Train and freight operating companies generally considered that network grants being paid to Network Rail in 'lieu of' access charges is not a problem. They noted that if access charges increased to replace network grants there would be a structural imbalance with road funding, that may make it more difficult for train and freight operating companies to raise capital and that it may increase regulatory burden.

17.11 Railfuture supported replacing network grants with charges from train operators. Chiltern Railways considered that replacing network grants with charges from train operators would help to reinforce the message that train operating companies are Network Rail's customers.

17.12 DfT noted that it wants to come to a shared view with us of the appropriate split between network grants and access charges. Transport Scotland said it strongly preferred our scenario 1 (lower headroom), as any movement towards a higher balance of funding direct through franchise operators will constrain Transport Scotland's ability to meet Scottish Government accounting and reporting rules and threaten overall programme affordability.

Our comments on the responses to our draft determination

17.13 As we note above, the provision of network grants by the governments, and the lack of clarity over exactly what the governments are buying can undermine Network Rail's accountability to its customers. This is not consistent with the more commercial relationships we would like to see drive behaviour in the industry. We would like to see more of Network Rail's funding coming from train operators and other customers, with greater clarity over what the governments' financial contribution is buying. This is in line with our preference for transparency and cost-reflective charges, which will send better signals for the efficient usage and provision of the network. It would also help avoid blurring the roles and responsibilities of Network Rail and the governments.

17.14 However, we recognise the governments' reporting issues and that in their budgets, they classify spend according to whether it is a capital or operating cost and network grant is treated as a capital cost, so our decision on the level of network grant affects the split between their capital and operating budgets, which could affect affordability.

Our determination

17.15 In determining the level of network grants, we have to balance our statutory duties including our duty to have regard to the funds available to the Secretary of State and our duty that requires us, in summary, when having regard to guidance from the Scottish Ministers, to have regard to the expenditure that is to be incurred by them.

17.16 It was therefore important to consider the application of the governments' accounting and reporting rules as a reference point in determining our assumptions on the level of network grants but we note that there is uncertainty over the calculation of the market body test. If the governments' approach to reporting changes we can reconsider our own approach.

17.17 Taking into account our general duties and the consultation responses above, we have decided to set the levels of network grants at the levels in scenario 1 of our draft determination, as overall those network grants are smaller than in CP4, which is consistent with our direction of travel on network grants, (i.e. we would prefer lower network grants in the future).

17.18 In the access charges chapter (chapter 16), we discuss how we will improve our approach to the indexation of Network Rail's track access charges in CP5, compared to the approach in CP4. Given that network grants are paid to Network Rail in lieu of track access charges, we consider that the same indexation method used for access charges should be used to calculate annual network grant payments.

17.19 Table 17.4 outlines our final determination of CP5 network grant payments.

Table 17.4: Our assessment of the CP5 network grant payments in Great Britain, England & Wales and Scotland

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
GB	3,952	3,985	4,034	4,037	3,578	19,586
England & Wales	3,547	3,569	3,607	3,654	3,284	17,661
Scotland	405	416	427	383	294	1,925

17.20 Table 17.5 shows a comparison of the CP5 network grant to CP4.

Table 17.5: Comparison of our assessment of the CP5 network grant payments in Great Britain, England & Wales and Scotland to CP4

£m (2012-13 prices)	CP4	CP5	CP5-CP4	%
GB	20,186	19,586	(600)	-3%
England & Wales	18,345	17,661	(684)	-4%
Scotland	1,841	1,925	84	4%

17.21 The network grants in CP5 are 61.9% of Network Rail's gross revenue requirement in Great Britain, 62.1% of Network Rail's gross revenue requirement in England & Wales and 60.0% in Scotland. This is £600m lower than the PR08 level in Great Britain £684m lower than the PR08 level in England & Wales and £84m higher than the PR08 level in Scotland.

17.22 Although the network grant payments represent a significant revenue stream for Network Rail, the company will still receive a large amount of funding directly from train operators as shown in the access charges chapter (chapter 16).

17.23 To provide better transparency, we have set out clearly in Annex F, what the level of fixed track access charges would be in the absence of direct network grant payments for each of Network Rail's operating routes. In this way, it is clearer where the network grants go, and, through our work in setting and monitoring outputs and key performance indicators (KPIs), what taxpayers are getting for their financial contribution.

18. Other single till income

Key messages in this chapter

- The elements of other single till income (OSTI) covered in this chapter mainly relate to Network Rail's property business and income from some enhancements undertaken by Network Rail, such as Crossrail. We also cover non-regulated charges in this chapter. The other elements of OSTI, e.g. freight charges and stations income are included in the access charges chapter (chapter 16). Annex C provides a reconciliation of the elements of OSTI included in this chapter and the elements of OSTI included in chapter 16, to our assumption of OSTI in the calculation of the net revenue requirement in Network Rail's revenue requirement chapter (chapter 14).
- A review of Network Rail's property income forecasts in its SBP shows that Network Rail may be able to generate a higher level of income in CP5 compared to the assumptions in its SBP. For example, in its SBP, Network Rail does not take sufficient account of the potential growth in its income from its property portfolio as a result of forecast passenger growth. Also, Network Rail's SBP forecast of income from property sales and other opportunities was conservative.
- The cost of capital used for the return on investment framework projects has been reduced from 6.00% in CP4 to 4.93% in CP5. This is consistent with our determination of Network Rail's cost of capital as discussed in the financial framework chapter (chapter 12).
- We have included additional income (and the corresponding capital expenditure) in our determination to reflect investments that Network Rail could make in CP5 in its property portfolio as well as on stations. Network Rail's forecast in its SBP was based only on schemes that had been identified at the time it prepared its SBP.

Main changes since the draft determination

- We have reduced the property income assumption for Great Britain by £92m over CP5 due to concerns about the deliverability of our property income forecasts and in particular our assumptions on projects with low probability but high potential income.
- We have added open access income of £90m over CP5 for Great Britain and England & Wales to our income forecasts, as it was excluded by error in our draft determination.
- We have included our assessment of non-regulated charges in this chapter.

Introduction

18.1 This chapter sets out our assessment of Network Rail's likely income from sources other than regulated access charges in CP5. Other single till income (OSTI) is subtracted from Network Rail's gross revenue requirement pound for pound to calculate its net revenue requirement.

18.2 The elements of OSTI that we assess in this chapter are:

(c) Network Rail's property portfolio (e.g. income from station retail outlets and property sales);

(d) income from some enhancements undertaken by Network Rail such as Crossrail; and

(e) non-regulated income from managed stations qualifying expenditure, franchise station leases, open access fixed contractual contributions and depots.

18.3 This chapter excludes the elements of OSTI related to charges from freight and open access operators and station long term charges which are assessed in the access charges chapter (chapter 16).

18.4 Annex C provides a reconciliation of the elements of OSTI included in this chapter and the elements of OSTI included in chapter 16, to our assumption of total OSTI in the calculation of the net revenue requirement in the Network Rail's revenue requirement chapter (chapter 14) and the executive summary.

18.5 OSTI as noted in the SBP has been restated in this chapter and in Annex C to improve comparability to our determination. The SBP OSTI assumption in chapter 14 and the executive summary has not been changed because we would also need to change the net revenue requirements. These adjustments are summarised in Table 18.4 and explained in more detail in Annex C.

OSTI included in Network Rail's SBP

18.6 Network Rail's SBP focused on the three main areas of OSTI that are covered in this chapter: property rental and property sales; finance charges for the Crossrail and Welsh Valley projects and facility charges on investment framework schemes. These are summarised in Tables 18.1, 18.2 and 18.3 for Great Britain, England & Wales, and Scotland. All numbers have been rounded to the nearest £100k.

18.7 Network Rail's SBP forecasts presented in Tables 18.1, 18.2 and 18.3 have been adjusted to be on a consistent basis with our determination. These adjustments are shown in Table 18.4 and explained in Annex C.

Table 18.1: Network Rail's SBP forecast of other single till income (non-charge related income and non-regulated income) for Great Britain in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	292.0	267.7	283.1	294.5	306.6	325.1	1,293.0	1,477.1
Property sales		19.7	20.5	20.5	21.0	19.9		101.6
Adjustment for commercial opex[419]	(31.7)	(29.4)	(30.1)	(30.7)	(31.3)	(31.9)	(180.2)	(153.3)
Crossrail finance charge	-	32.1	51.9	70.6	83.4	89.7	-	327.7
Welsh Valleys finance charge	-	0.6	1.6	3.7	8.4	13.5	-	27.8
Facility charges – station depot and track	44.0	50.8	54.1	53.8	53.6	53.3	147.0	265.6
Other	13.0	13.6	9.7	9.7	9.7	9.7	78.0	52.6
Total non-charge related income	**317.3**	**355.2**	**390.9**	**422.1**	**451.4**	**479.4**	**1,337.8**	**2,099.1**
Managed stations qualifying expenditure	43.0	43.0	43.0	43.0	43.0	43.0	226.0	215.0
Franchised stations lease income	43.7	44.1	44.1	44.1	44.2	44.7	234.7	221.2
Open access fixed contractual contributions	17.9	17.9	17.9	17.9	17.9	17.9	116.9	89.3
Depots	59.6	59.9	59.9	59.9	59.9	59.9	317.6	299.4
Total non-regulated income	**164.2**	**164.8**	**164.8**	**164.9**	**164.9**	**165.5**	**895.2**	**824.9**

[419] This represents income transferred to support costs and maintenance, i.e. it reduces support costs and maintenance.

Table 18.2: Network Rail's SBP forecast of other single till income (non-charge related income and non-regulated income) for England & Wales in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	274.5	251.6	266.1	276.8	288.1	305.6	1,214.0	1,388.2
Property sales		18.5	19.2	19.2	19.8	18.7		95.5
Adjustment for commercial opex	(28.9)	(27.6)	(28.2)	(28.8)	(29.4)	(30.0)	(169.4)	(144.1)
Crossrail finance charge	-	32.1	51.9	70.6	83.4	89.7	-	327.7
Welsh Valleys finance charge	-	0.6	1.6	3.7	8.4	13.5	-	27.8
Facility Charges –station depot and track	43.3	50.1	53.4	53.1	52.8	52.5	145.0	261.7
Other	12.7	13.3	9.4	9.4	9.4	9.4	77.0	51.0
Total non-charge related income	**300.7**	**338.6**	**373.4**	**403.9**	**432.5**	**459.4**	**1,266.6**	**2,007.8**
Managed stations qualifying expenditure	38.6	38.6	38.6	38.6	38.6	38.6	204.6	193.2
Franchised stations lease income	41.6	42.0	42.0	42.1	42.1	42.7	223.6	210.8
Open access fixed contractual contributions	17.9	17.9	17.9	17.9	17.9	17.9	116.9	89.3
Depots	53.0	53.3	53.3	53.3	53.3	53.3	281.0	266.4
Total non-regulated income	**151.1**	**151.8**	**151.8**	**151.9**	**151.9**	**152.5**	**826.1**	**759.7**

Table 18.3: Network Rail's SBP forecast of other single till income (non-charge related income and non-regulated income) for Scotland in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	17.5	16.1	17.0	17.7	18.4	19.6	79.0	88.9
Property sales		1.2	1.2	1.2	1.3	1.2		6.1
Adjustment for commercial opex	(1.9)	(1.8)	(1.8)	(1.8)	(1.9)	(1.9)	(10.8)	(9.2)
Facility charges –station depot and track	0.7	0.8	0.8	0.8	0.8	0.8	2.0	3.9
Other	0.3	0.3	0.3	0.3	0.3	0.3	1.0	1.6
Total non-charge related income	**16.6**	**16.6**	**17.6**	**18.2**	**18.9**	**19.9**	**71.2**	**91.3**
Managed stations qualifying expenditure	4.4	4.4	4.4	4.4	4.4	4.4	21.4	21.9
Franchised stations lease income	2.1	2.1	2.1	2.1	2.1	2.1	11.1	10.4
Depots	6.6	6.6	6.6	6.6	6.6	6.6	36.6	32.9
Total non-regulated income	**13.1**	**13.0**	**13.0**	**13.0**	**13.0**	**13.0**	**69.1**	**65.2**

Table 18.4: Our adjustments to Network Rail's SBP numbers for consistency with our assessment

£m (2012-13 prices)	Great Britain	England & Wales	Scotland
Franchised stations lease income	23.5	31.2	(7.7)
Non-Periodic Review income in property income	119.7	112.5	7.2
Total adjustments	**143.2**	**143.7**	**(0.5)**

Property income (property rental and property sales)

18.8 Network Rail stated in its SBP that its property division's role is to provide "high quality professional property services to support the railway, delight our customers and stakeholders and help to reduce industry costs". Network Rail pointed out that although maximising revenue for the property division is important, it should not be seen in isolation from the rail network. For example, if a railway arch tenant causes a

fire, the resulting compensation that is paid is likely to exceed the rental income received. Furthermore, Network Rail stated that the requirement for access to the railway infrastructure limits its ability to securitise rental streams.

18.9 Network Rail's forecast of total property income for Great Britain in its SBP has reduced compared to its prior forecasts. It stated that this reflects the contraction in the property market and the subdued economic outlook. The effect of this was:

(a) a lower baseline at the start of CP5;

(b) a reduction in the number of developments to open up revenue streams at major stations; and

(c) lower growth assumptions based on long term economic forecasts for CP5.

18.10 The SBP included £1,477m of forecast property rental income for Great Britain in CP5. It forecast that income from managed station retail units (which is included in property rentals income) will increase on average by 1.95% per annum. This is driven mainly by property market forecasts, which in Network Rail's view will continue to be subdued during CP5.

18.11 Potential property sales in CP5 have been identified by Network Rail on a project by project basis. Network Rail has then applied a probability of success factor to each project to derive total forecast property sales of £102m for Great Britain in CP5.

Crossrail and Welsh Valleys finance charges

18.12 Government sponsored investment framework schemes are funded by a finance charge which is levied by Network Rail to compensate it for the capital invested in the project.

Crossrail finance charge

18.13 This charge relates to upgrade works (referred to as on-network works) on existing Network Rail track required in order to carry Crossrail trains across the non-tunnel sections of the Crossrail route.

18.14 Network Rail's SBP included £1,444m of capital expenditure on the Crossrail project. To ensure that the costs of the project are borne by the co-sponsors (DfT and Transport for London (TfL)), Network Rail will be remunerated by Crossrail Limited by an investment framework "financing charge", which is based upon the project's phased capital profile and Network Rail's WACC for government sponsored investment framework schemes in CP4.

18.15 The income forecast in Network Rail's SBP is based on the forecast profile of the capital programme[420].

[420] The estimated income from this project of £328m in CP5 is only included in England & Wales and Great Britain.

Welsh Valley Lines finance charge

18.16 In its SBP, Network Rail also used a 4.75% WACC for the Welsh Valley Lines project. The sponsor is the Welsh Government and the project relates to the electrification of the Valleys line and the Great Western Main Line between Cardiff and Bridgend.

18.17 The capital cost associated with the Welsh Valley Lines project in CP5 is included in enhancement expenditure in Network Rail's SBP. This forecast is a Network Rail mid-point GRIP 2 estimate, which is based on the Welsh Government's Outline Business Case (OBC). However, as the scheme progresses the forecast is expected to be refined[421].

Facility charges (station, depots and track)

18.18 Network Rail generates income from investment framework projects where it carries out capital works which are not planned as part of the periodic review process. This income is received through facility charges paid to Network Rail by the project sponsors.

18.19 Network Rail's SBP for Great Britain included £266m of income in relation to investment framework projects that had been identified by Network Rail at the time it prepared its SBP[422]. In Great Britain, stations and depots facility charge income was forecast to be £209m and track facility charge income was forecast to be £57m.

Other charges (HS1 and TOC insurance)

18.20 High Speed 1 (HS1) income is received for Network Rail's activities on the HS1 network under a management contract. Network Rail does not own the HS1 network but it carries out the asset management, operation (including timetabling), maintenance and renewal of the HS1 network. Network Rail has assumed in its SBP that net revenues from HS1 will fall from £10.4m to £6.5m per annum. However, this is uncertain as we will not determine HS1's access charges until 2014.

18.21 Network Rail purchases some insurance cover on behalf of TOCs and the £3m per annum cost of the cover for Great Britain is re-charged to the TOCs.

Other non-regulated income

18.22 Network Rail receives income to cover managed stations qualifying expenditure (QX), income from franchised stations leases, fixed contractual contributions for open access contracts and depot lease income.

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[421] The estimated income from this project of £28m in CP5 is only included in England & Wales and Great Britain.

[422] Network Rail used a 6% WACC assumption to calculate the charges, which is the rate of return allowed under the CP4 regulatory settlement for these schemes.

18.23 QX covers: operations expenditure such as station cleaning, refuse collection and disposal, insurance, utilities, other staff costs, central support costs and a reasonable level of profit that is applied to the QX charge.

18.24 The majority of the QX charge covers operations expenditure. We do not regulate this element of the QX charge. However, we do regulate the central support costs and profit elements of the QX charge. Collectively these two elements are known as the QX management fee. We do not determine the QX management fee as part of PR13, but we will approve it before the beginning of CP5.

18.25 Franchised stations lease income covers First Reserve Rent (retail car park income, along with some amounts relating to other lease arrangements) and represents a share of the income received under these arrangements. This income stream is not regulated by us.

18.26 Network Rail receives fixed contractual contributions for open access contracts from Heathrow Express, Nexus and London Underground. Network Rail also receives depot lease income, which is made up of rents for land & buildings and plant & machinery at depots owned by Network Rail. These income streams are not regulated by us.

Our view of the SBP

Property income (rental and sales)

Summary of our draft determination

18.27 Network Rail's SBP property forecasts for CP5 and the methodology underlying them were reviewed by our consultants, DTZ, to obtain an independent view on the robustness of its assumptions and forecasts of property income.

18.28 DTZ found the SBP forecasts to be broadly reasonable. However, overall it considers that the forecasts were too conservative. DTZ considered that:

(a) as much of Network Rail's property is located within stations, which service the rail network, Network Rail's retail operations should benefit from the considerable growth in the number of railway passengers forecast over CP5 (projected at 4% per annum);

(b) Network Rail could improve its tenant mix and make greater use of rents based on the turnover of the lessee. It could increase revenue by reducing the number of protected leases (i.e. leases within the security of tenure provisions of the 1954 Landlord & Tenant Act), which represent 28% of its managed stations units;

(c) Network Rail's forecasts for property sales in CP5 were relatively conservative and it considered there was scope to significantly increase the income from property sales. For example, through more use of joint venture agreements; and

(d) Network Rail's SBP forecasts did not include income from projects that have a low probability of happening but that can generate high income. Precedent at Network Rail indicates that, on a portfolio basis, some of these low probability but potentially high income projects can succeed, for example, the Victoria Place project is contributing to Network Rail's income but was not identified in PR08. Also, a proposed acquisition by Network Rail of freight sites has not come to fruition but could become a source of income in the future. Therefore, some income from low probability but potentially high income projects was included in DTZ's property income assumptions.

18.29 DTZ presented a range for Network Rail's property income in CP5 from £1,539m to £1,833m for Great Britain with a base forecast of £1,645m for Great Britain. This compares to Network Rail's SBP assumption for Great Britain of £1,579m (£1,477m property rental and £102m property sales)[423]. Also, DTZ considered that the high end of its range does not represent the limit of what is achievable.

18.30 We agreed with DTZ's reasoning and considered that DTZ's range was based on reasonable adjustments to Network Rail's assumptions although some of those adjustments may have been too cautious.

18.31 Therefore, we decided in our draft determination we would use the "upper" end of DTZ's range of property income for Great Britain. The total income of £1,833m (£1,656m of property rental and £177m of property sales) for Great Britain was 13.9% or £254m higher than Network Rail's SBP.

18.32 Also, Network Rail's SBP forecast income excluded income relating to projects which were not specifically identified by Network Rail at the time it prepared its SBP, but nevertheless based on previous experience, it can be reasonably predicted that some opportunities for future developments will materialise. Therefore, in our draft determination we included an estimate of the future income from these schemes of £122m for Great Britain in our draft determination in Table 18.4 below (based on DTZ's 'high' scenario, which was uplifted from its base forecast of £120m). In our enhancements determination in the enhancements chapter (chapter 9), we included Network Rail's forecast of £231m of capital expenditure required to deliver these projects.

18.33 For our determination numbers to be comparable with the SBP, we have updated Network Rail's SBP assumptions in Tables 18.1, 18.2 and 18.3 to include this income of £120m for Great Britain, £113m for England & Wales and £7m for Scotland.

Responses to our draft determination

18.34 Network Rail was concerned that our property income assumption is £251m higher than its SBP. This is due to a combination of variances for property rental income

[423] Both DTZ's and Network Rail's SBP assumptions are shown gross of the commercial opex adjustment (£144m over CP5).

(£97m), property sales income (£75m), managed stations income (£59m) and other differences (£20m).

18.35 On property rental income, Network Rail was concerned about the deliverability of our assumptions for income associated with low probability but high potential income projects, especially as we had not provided additional funding for the capital expenditure that may be required for these projects.

18.36 On property sales income, Network Rail was concerned with the conversion rate (i.e. the percentage of the schemes that result in a sale compared to the total potential schemes identified in the early stages of a plan) for sales in DTZ's upper end assumption being almost double its SBP assumption. Network Rail argued that the assumptions must take account of the difficulty associated with the physical location and nature of the properties and the current state of the property sales market.

18.37 On managed stations income, Network Rail was concerned about its ability to transfer existing lease agreements from protected leases to non-protected leases and that our assumption did not include the additional expenditure needed to buy tenants out of their leases.

18.38 We also received a number of responses that stated property sales should not go ahead if they risk impacting future growth of the railway and the current use of the railway.

Our comments on the responses to our draft determination

18.39 Following further discussions with Network Rail about low probability but high potential income projects, we agree with Network Rail that it may be too challenging for Network Rail to deliver all this income in addition to our other income assumptions. We have therefore reduced our income assumption by £92m for these projects.

18.40 In relation to the conversion rate on property sales we consider that Network Rail is being too pessimistic on the difficulties associated with the physical location and nature of the properties and the current state of the property sales market.

18.41 Network Rail has a more pessimistic view of the property development part of the economy than it does when forecasting interest rates for its financing cost assumptions, where it assumes that the economy in Great Britain will improve over CP5 and that interest rates will therefore rise.

18.42 We have discussed this matter further with DTZ who do not agree with Network Rail's views because they consider that:

(a) Network Rail's property is often located in prime locations and that Network Rail has an ability to create a step change in property income through changing access arrangements and exploiting other key synergies with the railway. Network Rail's database of assets with potential for development and/or sale, only includes sites which have the potential to be disposed of or developed. As an upper estimate it therefore thinks their assumption is a realistic stretch target;

(b) Network Rail's database only includes sites which either do not impact on the operational railway or can be 'sensibly' arranged not to impact on the operational railway; and

(c) that the prospects for the property development market (across Great Britain) have improved markedly over the last year. For example, over the next five years, prime headline rents are forecast to rise in all regional markets for office space, with Edinburgh, Leeds and Manchester standing out as having good prospects. This is likely to increase development opportunities.

18.43 We note concerns about the potential impact of property sales on the operational railway. However, we consider that the requirements of condition 7 of Network Rail's network licence adequately ensures that land which may be critical to the continuing operation and future development of the railway remains available.

18.44 We have considered Network Rail's concerns about the assumptions on protected leases in conjunction with the low probability but high potential income schemes issue discussed above. Overall, we think that by reducing our property income assumption by £92m, we have addressed Network Rail's deliverability issues in a reasonable way.

18.45 We still consider that Network Rail can generate some additional income from low probability but high potential income schemes but we recognise that our capital expenditure assumptions do not include additional expenditure to pay tenants a lump sum payment to compensate them for the change in their contract. These potential payments are uncertain but likely to be relatively small and our spend to save framework can be used to fund these payments.

Our determination

18.46 Our determination is a package, which means that not all of our assumptions will be equally hard to achieve and we have also de-risked a number of areas of our determination, e.g. civils renewals and enhancements.

18.47 In particular, there are a number of areas such as VAT rebates, corporation tax, telecoms income, grant income (e.g. Network Rail has received a grant from the European Union of around £45m in CP4) and other de-minimis income, where Network Rail may receive additional income in CP5. For example, in PR08, we assumed that Network Rail would receive no income from VAT rebates in CP4, but it has received £90m.

18.48 We also consider that our facility charge income assumption is conservative. This is because the number of schemes that we assume will go ahead is based on an investment framework cost of capital of 6%, whereas in our determination we are reducing the investment framework cost of capital to 4.93% for CP5. This should mean that more schemes go ahead because the cost of the scheme to the TOC will be lower. A number of TOCs in their responses to our draft determination also noted that a lower cost of capital is likely to mean that more schemes will go ahead.

18.49 Given these issues it is necessary to have challenging assumptions in other areas of the package such as property income in order for our determination to be a balanced package. Overall, we consider that our property income assumption of £1,741m (£1,564m of property rental and £177m of property sales for Great Britain) is appropriate and is within DTZ's range.

Crossrail finance charge and Welsh Valley Lines finance charge

Summary of our draft determination

18.50 In our draft determination we amended the financing charge assumption for the Crossrail project to reflect Network Rail's real "vanilla" WACC of 4.31% for CP5, as described in chapter 13. In comparison, Network Rail's assumed real "vanilla" WACC was 4.75%.

18.51 For the Welsh Valley Lines finance charge, we also used a 4.31% real "vanilla" WACC and we reduced the finance charge assumption in our draft determination to reflect our adjustment to the project's efficient capital expenditure in CP5. This is discussed in chapter 9.

Responses to our draft determination

18.52 TfL noted that we should ensure that Network Rail would not be over-recovering income from Crossrail as TfL will be paying a financing charge to Network Rail during construction of Crossrail and when services commence, TfL will be paying supplementary access charges to Network Rail.

Our comments on the responses to our draft determination and our determination

18.53 We have had a number of discussions with DfT and TfL about a charge that will apply for Crossrail once that service is fully operational, and similarly with DfT and the Welsh Government about the Welsh Valley Lines. As the final form of these charges has not yet been agreed, and the date of any transition from the current charges to the future charges is uncertain, for our final determination we have continued to assume that the existing charges will be applied across the whole control period.

18.54 We note TfL's comment and the consistency between the income that Network Rail recovers through charges for Crossrail and its costs, is one of the issues we are currently discussing with Network Rail, DfT and TfL.

Facility charges – station, depots and track

Summary of our draft determination

18.55 For those projects that generate station, depot and track facility charges which were included in Network Rail's SBP, we used Network Rail's income estimates but adjusted the income to reflect our 4.91% (real, pre-tax) cost of capital assumption, instead of the 6% cost of capital used by Network Rail (which is unchanged from CP4). There are also speculative projects which were not known at the time of Network Rail's SBP and were therefore not included in it. We thought that it is important that our determination reflects as closely as possible Network Rail's likely

income in CP5 and the associated capital expenditure even when the project is not yet specifically known.

18.56 We based our facility charge assumptions for Network Rail's speculative projects on Network Rail's "central" scenario, which was based on £185m (2012-13 prices) of capital expenditure in CP5 for Great Britain. This is a reasonable assumption given the uncertainty involved in this forecast and is based on the level of capital expenditure in CP4 but excludes large one-off projects like Evergreen 3 and the Nottingham hub, as projects of this scale are unlikely to occur with such frequency during CP5. Based on the 4.91% cost of capital (real, pre-tax), we estimated this would yield total facility charges income for Great Britain of £58m (2012-13 prices) in CP5.

18.57 We apply a real "vanilla" WACC to government sponsored projects and a pre-tax WACC to other projects. This is because our approach to the calculation of our corporation tax assumptions, in our calculation of Network Rail's revenue requirement, is to base them on forecast cash corporation tax payments in CP5 rather than a notional amount.

18.58 This means that the governments fund the corporation tax consequences of government sponsored projects over the long-term through the corporation tax assumptions in the revenue requirements. However, other sponsors of investment framework projects may not still be in place in the future to fund the cash corporation tax payments when they materialise, so for those projects, we assume a simple approach to corporation tax, by including an estimate of the corporation tax effect of the project in the pre-tax cost of capital.

Responses to our draft determination

18.59 A number of train operators noted that a lower cost of capital is likely to mean that more schemes will go ahead, which will increase Network Rail's income.

Our comments on the responses to our draft determination

18.60 We consider that our facility charge income assumption is conservative given that it is based on the number of schemes that were assumed would go ahead with an investment framework cost of capital of 6%. We have reduced the investment framework cost of capital to 4.93% for CP5, which should increase the number of schemes that go ahead.

Our determination

18.61 As we have not seen any representations or further evidence to persuade us to change the approach set out in our draft determination, we consider that this remains appropriate for CP5. We have slightly amended our assessment of Network Rail's investment framework cost of capital from 4.91% to 4.93% for our final determination.

Other non-charge income (HS1 and the TOC insurance recharge)

Summary of our draft determination

18.62 Network Rail assumed in its SBP that net revenues from HS1 will fall from £10.4m to £6.5m in CP5. In our draft determination we considered that it was not appropriate to prejudge our 2014 periodic review of HS1. Therefore, our assumption in the draft determination was that the income Network Rail would receive from HS1 would be unchanged at £10.4m per annum.

18.63 Our draft determination of the insurance recharge to TOCs was the same as Network Rail's SBP (£3m per annum).

Responses to the draft determination

18.64 Network Rail noted that some discussions on PR14 have already taken place and it thinks an assumption of £6.5m would therefore be a more appropriate assumption for its HS1 income.

Our comments on the responses to our draft determination and our determination

18.65 We still consider that it is appropriate not to prejudge the PR14 determination of HS1. If there is a difference between the outcome of PR14 and our assumptions for Network Rail's income in PR13, the difference will be logged up to the opex memorandum account.

18.66 The TOC insurance recharge is cost reflective and we have assumed a higher level of efficiency in insurance costs than Network Rail. We have therefore reduced our assumptions for the insurance recharge from TOCs by £1.8m over CP5.

Other non-regulated income

Background

18.67 In our draft determination, Network Rail's non-regulated income was only included in Annex C. Network Rail noted that we had not included open access non-regulated income in our draft determination of OSTI and we have now included this income in the final determination.

Our determination

18.68 Our assumption for Network Rail's managed stations QX income in CP5 of £212m for Great Britain is consistent with our estimate of managed stations expenditure and is similar to Network Rail's SBP estimate of managed stations QX income (£215m). Network Rail has provided us with an estimate of what its CP5 QX management fee proposal will be, which we have included in our managed station income forecasts, as we think it is a reasonable assumption for the purpose of our final determination.

18.69 We have assumed that franchised stations lease income (£223m for Great Britain) and depots lease income (£300m) in CP5 will be the same as Network Rail included

in its SBP submission, which is broadly the same as the income received from these two sources in the final year of CP4[424]. This is because the vast majority of this income is related to leases/contracts that are fixed and are uplifted by RPI each year. The only change we have made to Network Rail's SBP assumptions is where Network Rail has identified an error in the classification of its income between stations lease income and the station long term charge in relation to a particular station[425].

18.70 We have not changed our assumptions in relation to Network Rail's open access charges in CP5 (£90m for Great Britain), as we consider that Network Rail's SBP assumption is reasonable.

Our assessments

18.71 Our assessments of OSTI covered in this chapter for Great Britain, England & Wales, and Scotland in CP5 are summarised in Tables 18.5, 18.6 and 18.7.

Table 18.5: Our assessment of other single till income (non-charge related income and non-regulated income) for Great Britain in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	292.0	272.1	290.1	311.0	331.8	359.6	1,293.0	1,564.6
Property sales		34.7	35.5	35.5	36.0	34.9		176.6
Adjustment for commercial opex	(31.7)	(29.4)	(30.1)	(30.7)	(31.3)	(31.9)	(180.2)	(153.3)
Crossrail finance charge	-	29.2	47.2	64.2	75.9	81.6	-	297.7
Welsh Valley Lines finance charge	-	0.5	1.3	3.0	6.9	11.1	-	22.8
Facility charges – station, depot and track	44.0	47.4	53.0	55.7	58.3	61.0	147.0	275.4
Other	13.0	13.6	13.5	13.3	13.2	13.1	78.0	66.7
Total non-charge related income	**317.3**	**368.1**	**410.5**	**452.0**	**490.8**	**529.4**	**1,337.8**	**2,250.5**

[424] Franchised stations lease income increases slightly throughout CP5 to reflect an arrangement in relation to building car parks at a particular station

[425] Network Rail has advised us that, for stations on the Isle of Wight, maintenance, repair and renewals expenditure is recovered through stations lease income rather than the station long term charge but this income was shown incorrectly in its SBP. We therefore made an adjustment of £0.3m to our determination of station lease income and franchised station long term charge income to correct this.

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Managed stations qualifying expenditure	43.0	42.6	42.4	42.3	42.3	42.3	226.0	211.9
Franchised stations lease income	43.7	44.4	44.4	44.5	44.5	45.1	234.7	222.9
Open access fixed contractual contributions	17.9	17.9	17.9	17.9	17.9	17.9	116.9	89.5
Depots	59.6	59.9	59.9	59.9	59.9	59.9	317.6	299.5
Total non-regulated income	**164.2**	**164.8**	**164.6**	**164.6**	**164.6**	**165.2**	**895.2**	**823.8**

Table 18.6: Our assessment of other single till income (non-charge related income and non-regulated income) for England & Wales in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	274.5	255.7	272.6	292.3	311.9	338.0	1,215.4	1,470.5
Property sales		32.6	33.4	33.4	33.8	32.8		166.0
Adjustment for commercial opex	(29.8)	(27.6)	(28.2)	(28.8)	(29.4)	(30.0)	(169.4)	(144.1)
Crossrail finance charge	-	29.2	47.2	64.2	75.9	81.6	-	297.7
Welsh Valley Lines finance charge	-	0.5	1.3	3.0	6.9	11.1	-	22.8
Facility charges – station, depot and track	43	46.5	51.9	54.4	57.0	59.5	145.0	269.3
Other	12.7	13.3	13.2	13.1	13.0	12.9	77.0	65.5
Total non-charge related income	**300.7**	**350.2**	**391.3**	**431.6**	**469.1**	**505.9**	**1,266.6**	**2,147.7**
Managed stations qualifying expenditure	38.6	38.3	38.0	38.0	38.0	37.9	204.6	190.2
Franchised stations lease income	41.6	42.3	42.3	42.4	42.4	43.0	223.6	212.4
Open access fixed contractual contributions	17.9	17.9	17.9	17.9	17.9	17.9	116.9	89.5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Depots	53.0	53.3	53.3	53.3	53.3	53.3	281.0	266.5
Total non-regulated income	**151.1**	**151.8**	**151.5**	**151.6**	**151.6**	**152.1**	**826.1**	**758.6**

Table 18.7: Our assessment of other single till income (non-charge related income and non-regulated income) for Scotland in CP5

£m (2012-13 prices)	CP4	CP5					CP4 Total	CP5 Total
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19		
Property rental	17.5	16.4	17.5	18.7	20.0	21.6	79.0	94.2
Property sales		2.1	2.1	2.1	2.2	2.1		10.6
Adjustment for commercial opex	(1.9)	(1.8)	(1.8)	(1.8)	(1.9)	(1.9)	(10.8)	(9.2)
Facility Charges – Station depot and Track	0.7	0.9	1.1	1.2	1.4	1.5	2.0	6.1
Other	0.3	0.3	0.3	0.3	0.3	0.3	1.0	1.5
Total non-charge related income	**16.6**	**17.9**	**19.2**	**20.5**	**22.0**	**23.6**	**71.2**	**103.2**
Managed stations qualifying expenditure	4.4	4.3	4.3	4.3	4.3	4.3	21.4	21.5
Franchised stations lease income	2.1	2.1	2.1	2.1	2.1	2.1	11.1	10.5
Depots	6.6	6.6	6.6	6.6	6.6	6.6	36.6	33.0
Total non-regulated income	**13.1**	**13.0**	**13.0**	**13.0**	**13.0**	**13.0**	**69.1**	**65.0**

Note: There is no Crossrail income, Welsh Valley Lines income or open access fixed contractual contributions in Scotland.

18.72 The differences in OSTI between Network Rail's SBP and our final determination are summarised in Table 18.8. These differences are explained in detail above and largely reflect our more optimistic view than Network Rail of the property income that it can achieve in CP5.

Table 18.8: Difference in OSTI between Network Rail SBP and our final determination for Great Britain, England & Wales and Scotland

£m (2012-13 prices)	Great Britain			England & Wales			Scotland		
	SBP	FD	FD - SBP	SBP	FD	FD - SBP	SBP	FD	FD - SBP
Property rental	1,477.1	1,564.6	87.5	1,388.2	1,470.5	82.3	88.9	94.2	5.3
Property sales	101.6	176.6	75.0	95.5	166.0	70.5	6.1	10.6	4.5
Adjustment for commercial opex	(153.3)	(153.3)	-	(144.1)	(144.1)	-	(9.2)	(9.2)	-
Crossrail finance charge	327.7	297.7	(30.0)	327.7	297.7	(30.0)	-	-	-
Welsh Valley Lines finance charge	27.8	22.8	(5.0)	27.8	22.8	(5.0)	-	-	-
Facility charges – station, depot and track	265.6	275.4	9.8	261.7	269.3	7.6	3.9	6.1	2.2
Other non-charge income	52.6	66.7	14.1	51.0	65.5	14.5	1.6	1.5	(0.1)
Total non-charge income	**2,099.1**	**2,250.5**	**151.4**	**2,007.8**	**2,147.7**	**139.9**	**91.3**	**103.2**	**11.9**
Managed stations qualifying expenditure	215.0	211.9	(3.1)	193.2	190.2	(3.0)	21.9	21.5	(0.4)
Franchised stations lease income	221.2	222.9	1.7	210.8	212.4	1.6	10.4	10.5	0.1
Open access fixed contractual contributions	89.3	89.5	0.2	89.3	89.5	0.2	0.0	0.0	-
Depots income	299.4	299.5	0.1	266.4	266.5	-	32.9	33.0	0.1
Total non-regulated income	**824.9**	**823.8**	**(1.1)**	**759.7**	**758.6**	**(1.1)**	**65.2**	**65.0**	**(0.2)**

18.73 The differences in OSTI between our draft and final determination are summarised in Table 18.9. These differences are explained in more detail in Annex C (summary of other single till income). The main differences are the inclusion of the fixed contractual contribution from open access operators of £90m, a reduction in income from low probability but high potential income projects of £92m and the removal of £23m of income from freight connection agreements as this is also included in other operating income.

Table 18.9: Differences in OSTI between our draft and final determination for Great Britain, England & Wales and Scotland

£m (2012-13 prices)	Great Britain			England & Wales			Scotland		
	DD	FD	FD - DD	DD	FD	FD - DD	DD	FD	FD - DD
Property rental	1,656.4	1,564.6	(91.8)	1,557.0	1,470.5	(86.5)	99.4	94.2	(5.2)
Property sales	176.6	176.6	-	166.0	166.0	-	10.6	10.6	-
Adjustment for commercial opex	(153.8)	(153.3)	0.5	(144.8)	(144.0)	0.8	(9.4)	(9.2)	0.2
Crossrail finance charge	298.1	297.7	(0.4)	298.1	297.7	(0.4)	-	-	-
Welsh Valley Lines finance charge	22.8	22.8	-	22.8	22.8	-	-	-	-
Facility charges – station, depot and track	274.4	275.4	1.0	268.3	269.3	1.0	6.1	6.1	-
Other non-charge income	68.5	66.7	(1.8)	67.0	65.5	(1.5)	1.5	1.5	-
Total non-charge income	**2,343.0**	**2,250.5**	**(92.5)**	**2,234.4**	**2,147.7**	**(86.7)**	**108.2**	**103.2**	**(5.0)**
Freight connection agreements and other non-regulated income	22.5	-	(22.5)	20.5	-	(20.5)	2.5	-	(2.5)
Managed stations qualifying expenditure	215.0	211.9	(3.1)	193.0	190.2	(2.8)	22.0	21.5	(0.5)
Franchised stations lease income	221.1	222.9	1.8	210.9	212.4	1.5	10.5	10.5	-
Open access fixed contractual contributions	-	89.5	89.5	-	89.5	89.5	-	-	-
Total depots income	299.0	299.5	0.5	266.5	266.5	-	33.0	33.0	-
Total non-regulated income	**757.6**	**823.8**	**66.2**	**690.9**	**758.6**	**67.7**	**68.0**	**65.0**	**(3.0)**

19. Financial incentives

Key messages in this chapter

- We are encouraging the industry to work together to improve productivity, reduce costs and to deliver better value for its customers. We are doing this by strengthening and developing incentives to better align the interests of Network Rail and its customers, the train operators, and to make Network Rail more commercially responsive to the needs of its customers.
- We are improving the existing efficiency benefit sharing mechanism by replacing it with a route level incentive mechanism. This route level incentive will encourage Network Rail and the operators to work together and allow both to share in efficiency gains or losses on an annual basis.
- To encourage franchised operators to take a more active interest in periodic reviews, we have asked franchising authorities to expose new franchises to changes that we make to the variable usage charge at future periodic reviews. We will also work with governments to explore how we can increase franchised train operators' exposure to the fixed charge and changes to it. These are decisions for the governments. DfT has said that it will consider exposure to changes in the variable usage charge for future franchises. However Transport Scotland has confirmed that it does not intend to expose the new Scottish franchises to changes in access charges.
- We are strengthening the incentives for the industry to work together to drive down the costs of enhancements. We want Network Rail and operators to enter into commercial agreements that will reward operators if real cost savings are achieved.
- We support research and development (R&D) and innovation as means of improving Network Rail's productivity and reducing its costs in the medium to long term. We are introducing a matched-funding financial incentive whereby we will make provision in the settlement for up to £50m of additional Network Rail expenditure on R&D or innovation to be matched.
- We are encouraging Network Rail to act more like a commercial organisation – which makes informed judgements about the amount of capacity to provide, at what cost and to whom. We are doing this by improving the existing volume incentive mechanism. Network Rail has confirmed its commitment to introducing a range of measures to strengthen the way in which it acts on the incentive in its decision making. The incentive will be disaggregated to a route level and we are introducing a downside and increasing incentive payment rates to increase its impact.

Introduction

19.1 This chapter relates to financial incentives. As we described in the overall incentives chapter, if Network Rail's income is set at a level which is equal to its costs, since it does not face competition, it has limited incentive to improve its productivity and control its costs. Further, as Network Rail's variable charges do not cover all the costs of providing capacity, the company does not have an incentive to act commercially when making judgements about whether to accommodate unexpected additional demand for the use of its network.

19.2 A possible remedy is to design individual charges in a way that provides these incentives. As the current structure of charges does not do this, we are establishing a longer–term project to work with the industry to review the existing structure of charges and to consider how it might be improved, including how the incentive properties of the charges might be strengthened. But, at present, financial incentives are required to supplement the structure of charges and to provide these incentives. In PR13, we have reviewed the existing financial incentives framework and decided to modify this for CP5 to improve its incentive properties by:

(a) developing the existing efficiency benefit sharing mechanism into a **route-level efficiency benefit sharing (REBS) mechanism.** This incentive is designed to strengthen the alignment of incentives between Network Rail and train operators – through the development of a default mechanism in CP5 for Network Rail to share efficiencies with train operators – in order to support greater co-operation to drive down industry costs. It works by allowing efficiency gains or losses to be shared between Network Rail and its customers (i.e. operators) on an annual basis;

(b) asking franchising authorities to provide new franchises with **exposure to technical or cost-reflective (as opposed to policy related) changes in the variable usage charge** at future periodic reviews. We will work also with governments to explore how we can increase franchised train operators' exposure to the fixed charge and to changes in it. The rationale is similar to that for REBS but the mechanism works by giving operators a greater interest in infrastructure costs at a periodic review;

(c) strengthening the incentives for the industry to work together to drive down the costs of enhancements and to align scope, specification and delivery of projects better with the needs of the operational railway and its customers. We want Network Rail and operators to enter into **commercial agreements** that will help Network Rail to achieve improvements and reward both parties if these are achieved;

(d) supporting investment in R&D and innovation by introducing a **matched-funding financial incentive**; and

(e) developing the **existing volume incentive mechanism** in terms of both its design and payment rates in order to improve its effectiveness. The volume incentive is designed to encourage Network Rail to consider unexpected demand from its customers and in doing so to make trade-offs similar to those made by a company operating in a more commercial setting.

Route-level efficiency benefit sharing

Overview

19.3 In December 2012, we published our decisions on the route-level efficiency benefit sharing (REBS) mechanism[426]. This mechanism is intended to strengthen the incentive to reduce infrastructure costs. It works by increasing passenger and freight train operators' interest in these costs by exposing them to these costs in each year of the control period.

Rationale

19.4 In a normal competitive market, when a company reduces its costs, its customers should benefit over time as a result of the lower prices or better service they receive. There are market incentives in place for firms to work together with their suppliers to help reduce their suppliers' costs and for suppliers to encourage them to do so. In the rail industry these normal market incentives are not present, primarily because franchise agreements provide franchisees with a high degree of insulation from the financial impact of changes to access charges, both upwards and downwards, at a periodic review.

19.5 Ultimately, we want to see the relationships between Network Rail and train operators put on to a more commercial footing, in which operators are exposed to changes in Network Rail's costs (through the charging framework) and so have an incentive to help the company to reduce them. There are already cases where train operators are fully exposed to costs, e.g. traction electricity costs and freight and open access operators' exposure to changes in variable charges.

19.6 This exposure has led those train operators to put considerable effort into investigating and challenging Network Rail's costs and efficiency in those areas. But only a small proportion of Network Rail's total cost base is affected. We are keen to see the level of engagement and challenge that these operators bring, and the extent to which Network Rail and operators work together to identify and achieve cost savings, extended.

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[426] *Aligning incentives: decisions on route-level efficiency benefit sharing (REBS) and train operator exposure to Network Rail's costs at a periodic review*, December 2012, available at http://www.rail-reg.gov.uk/pr13/PDF/aligning-incentives-decisions-dec12.pdf.

Previous decisions

19.7 In our draft determination we explained that we had decided to replace the existing efficiency benefit sharing mechanism (EBSM) with a REBS mechanism. This mechanism will expose train operators to Network Rail's costs in each year of the control period and will:

(a) **operate at a Network Rail operating route level:** EBSM operated at a national level but REBS will operate at a route level to strengthen the relationship between the effort of individual train operators to reduce Network Rail's costs and the payments they receive;

(b) **provide operators with upside (25% share) and downside (10% share) exposure to Network Rail's financial performance, which is capped at 10% of the REBS baseline:** caps limit the risk of gains and losses for operators and the upside/downside exposure incentivises operators to work with Network Rail regardless of whether it is underperforming or outperforming our determination assumptions;

(c) **have payments which take into account efficiencies achieved in alliances:** this will support industry cost reductions as it provides incentives on Network Rail, the alliance partner, and secondary operators to support route-level cost savings, both inside and outside of alliance arrangements; and

(d) **provide train operators with an opt-out from the mechanism (by route)[427]:** an opt-out provides train operators with the opportunity (but not the obligation) to enter into arrangements to share in Network Rail's performance. Network Rail will be required to make REBS available to all train operators. The opt-out[428] gives train operators the opportunity to evaluate the risks involved before deciding whether to participate in REBS during CP5.

19.8 REBS provides train operators with the opportunity to receive short-term financial benefits in return for helping Network Rail to deliver long-term industry cost reductions. We consider that the capped payments under REBS represent value for money, in terms of the wider efficiencies they will generate. For example, EBSM payments to train operators totalled £16.4m (2012-13 prices) for the first four years of CP4 but the outperformance achieved is likely to generate significantly higher

[427] We understand that the governments will allow new franchised train operators to retain the rewards and costs of participating in REBS but it is unlikely that this will apply for existing franchised or negotiated direct awards with existing franchises. This decision does not affect the ability of open access operators (passenger and freight) to retain the rewards and costs from REBS as they are not covered by franchise agreements. We discuss this issue in more detail later in this chapter.

[428] In our draft determination we said that train operators would be able to opt-out of REBS at the start of CP5 but also in other circumstances, e.g. when they start a new franchise on that route. We discuss the opt-out in more detail later in this chapter.

long-term savings for passengers, freight customers and funders[429]. Furthermore, although the focus of REBS is on outperformance, train operators will also be at risk from underperformance. It is not simply a 'no-lose' situation for train operators.

19.9 We see REBS in CP5 as a default mechanism for those train operators that do not want to enter into direct commercial agreements with Network Rail, as well as a stepping stone to the development of more commercial relationships within the industry. As our preference is for more commercial arrangements, we would be content to see train operators opting out of REBS to pursue their own commercially negotiated risk and reward sharing agreements with Network Rail, provided such arrangements were transparent and non-discriminatory[430]. Indeed, we do not necessarily expect REBS to be a long-term regulatory mechanism, but see it as a stimulus to change the behaviour of Network Rail and the train operators that will become self-sustaining in the longer term.

Issues raised in draft determination

19.10 We set out our decisions on REBS early in the periodic review process (in December 2012) to help the industry factor them into its plans and to provide the industry with greater certainty. But this meant that there were some aspects of the incentive mechanism that were still to be decided. In our draft determination we set out our proposals on the remaining outstanding issues:

(a) approach to setting REBS baselines;

(b) methodology for calculating and reporting REBS performance in CP5; and

(c) elements of Network Rail's income and costs that will be included in REBS.

Work completed since draft determination

19.11 Since we published the draft determination, we have continued to discuss our REBS proposals with the industry:

(a) as part of our **consultation on PR13 implementation**, published in July 2013, we set out additional information on how we expected REBS to operate in CP5, e.g. the form of REBS payments and how the opt-out provision would work. As part of this consultation, we set out the amendments to track access contracts that would be required to implement REBS in CP5;

(b) we held a **small workshop** on 24 July 2013 with representatives from train operators (passenger and freight), ATOC, governments, and Network Rail. The

[429] This is because, whilst train operators benefit immediately from cost savings (via REBS), funders and passengers will benefit in the longer term, i.e. from CP6 onwards from Network Rail's lower cost base and hence lower funding requirement.

[430] Our statement on alliancing, published in March 2012 is available at: http://www.rail-reg.gov.uk/server/show/ConWebDoc.10854.

focus of the workshop was our approach to setting REBS baselines and measuring REBS performance; and

(c) we have discussed our REBS proposals at **industry forums** such as Rail Delivery Group meetings.

Overview of general consultation responses on REBS

Summary of consultation responses

19.12 In the next section, we summarise consultation responses to the main issues on REBS that we raised in our draft determination and consultation on implementing PR13. However, a number of consultees made broader comments about our REBS proposals. We have summarised these general comments below.

19.13 The responses from the majority of train operators, including East Coast, Greater Anglia, Northern and Virgin, agreed with ATOC's response which stated that it was not supportive of full-cost risk-sharing between Network Rail and train operators through REBS. ATOC suggested that train operators did not have the necessary control of those risks and costs and hence were unlikely to enter into voluntary arrangements.

19.14 Although some train operators supported the principles of REBS, almost all train operators considered that alliancing arrangements would bring greater benefits than REBS in CP5. Freight operators reiterated the concerns that they have previously raised about the inclusion of downside risk in REBS. However, many responses welcomed our decision to allow train operators to opt-out of the mechanism.

19.15 Operators such as Arriva, DB Schenker and Freightliner did not think that there is sufficient information available to make an informed decision about entering into REBS. Similarly, PTEG was sceptical about the practicality and effectiveness of the proposed REBS, without greater transparency and disaggregation of infrastructure cost data.

19.16 TSSA opposed REBS because it did not consider it to be appropriate to allow additional taxpayer money to go to private companies, and it was concerned that REBS may introduce a profit motive into the day-to-day running of the rail infrastructure.

Our response

19.17 We acknowledge the concerns of stakeholders in relation to our REBS proposals and agree that alliancing arrangements are more likely to deliver industry savings and better working relationships than a regulatory mechanism. We have said previously that we are content to see train operators opting out of REBS to pursue their own commercially negotiated risk and reward sharing agreements with Network Rail, provided such arrangements are transparent and non-discriminatory. However, we consider that REBS can act as a default mechanism.

19.18 We do not consider that REBS is a full-cost risk sharing mechanism. We have excluded elements of Network Rail's income and expenditure, where we consider that

train operators are not able to influence Network Rail, e.g. Network Rail's financing costs.

19.19 We and Network Rail publish a significant amount of information on Network Rail's income, expenditure and assets. For example, a substantial amount of route level financial information is already presented in Network Rail's regulatory financial statements. Given that train operators engage with Network Rail on a daily basis on operational and planning issues, we consider that train operators are well placed to develop improved ways of working to deliver efficiencies and provide additional challenge on its plans, e.g. to advise on the scope and timing of renewals projects.

19.20 We note concerns from some operators about downside risk exposure in REBS. Whilst the general purpose of REBS is to drive outperformance, and the expectation is generally of cost reduction, we consider that incentives are significantly strengthened if there is also some downside exposure.

19.21 We consider that the capped payments under REBS represent value for money, in terms of the wider efficiencies they will generate. Where Network Rail has not delivered its regulatory outputs, e.g. long-term sustainability of the network or PPM targets, we will consider adjusting REBS performance (impacting the value of any REBS payments). We think that this will limit the incentive on train operators to seek unsustainable infrastructure cost savings in exchange for payments via REBS.

Our decisions on outstanding issues

19.22 In this section, we set out the background to each of the outstanding issues in relation to REBS, summarise consultees' responses, provide our responses to the issues raised by consultees, and then confirm our decisions.

Approach to setting REBS baselines

Background

19.23 In December 2012, we wrote to Network Rail setting out our current thinking on setting REBS baselines[431]. We explained that our main aim was to be able to determine how Network Rail is performing in CP5 relative to our PR13 assumptions.

19.24 In its response to our letter[432], Network Rail suggested that it should have flexibility to set route-level baselines (through the delivery plan); that REBS baselines should not be fixed for the entire control period; and that REBS should include Schedules 4 & 8 costs and variable usage charge income (to reflect changes in traffic volumes) but exclude property and other income sources.

19.25 Our draft determination confirmed that our PR13 final determination cost assumptions for England & Wales and for Scotland would act as REBS baselines in CP5. Network

[431] This letter is available at http://www.rail-reg.gov.uk/pr13/PDF/rebs-letter-171212.pdf.

[432] Network Rail's response can be found via the following link: http://www.networkrail.co.uk/WorkArea/DownloadAsset.aspx?id=30064784819.

Rail would then be able to set REBS route baselines for the nine England & Wales operating routes, as long as they reconciled, in total, back to our national England & Wales determination assumptions. As we have a separate determination for Scotland, our CP5 REBS baseline assumptions will act as the final REBS route baseline for Scotland.

19.26 We also said that Network Rail would be required to agree REBS route baselines for CP5 by the start of the control period so that train operators had sufficient time to decide on whether to enter into REBS. We understand the rationale for allowing changes to REBS baselines to reflect factors such as the re-profiling of a major cost-saving (or income generating) scheme within the control period. However, we explained in our draft determination that we did not agree that Network Rail should be allowed to make annual adjustments to REBS route baselines.

19.27 Setting REBS route baselines at the start of CP5 provides certainty for train operators, whilst allowing Network Rail and train operators to propose and, after having consulted, refine the route-level income and expenditure assumptions prior to the start of the control period.

Summary of consultation responses

19.28 Only a small number of consultees commented on our approach to setting REBS route baselines.

19.29 Although Network Rail stated its preferred approach to setting REBS route baselines was for it to be able to make intra-control period adjustments, it accepted our alternative proposal to reflect any significant changes to income and expenditure in annual adjustments to REBS performance. Network Rail did, however, consider that our approach increased the complexity of reporting. Network Rail welcomed our proposal to allow it to finalise the nine England & Wales REBS route baselines.

19.30 ATOC considered that REBS route baselines needed to be transparent and that operators required assurance that there will be clear challenge and monitoring to identify genuine efficiencies and changes in scope of activities. A number of train operators agreed with ATOC's response, including East Coast and East Midlands Trains. Some train operators also thought that they would not have sufficient information to assess whether the REBS route baselines were appropriate.

19.31 Attendees at our 24 July 2013 workshop suggested that both the way in which REBS route baselines were determined and the availability of relevant information were crucial to train operators when deciding whether to opt-out of REBS.

Our response

19.32 We acknowledge that setting the correct REBS route baselines is crucial to the success of the mechanism. We also think that it is important that train operators (passenger and freight) have sufficient information about Network Rail's income, costs and asset information so that they can make informed decisions about whether to

participate in REBS. There is already a significant amount of publicly available information on Network Rail's income, costs and asset information, e.g. in Network Rail's regulatory accounts, our final determination and Network Rail's delivery plans. However, we expect Network Rail and train operators to work collaboratively in setting REBS baselines and for Network Rail to provide additional information to train operators, where reasonable and practical, to help inform their decisions on REBS participation.

19.33 REBS route baselines will be published as supporting information to Network Rail's delivery plan. As such train operators will have an opportunity to provide input into the development of REBS route baselines through the delivery plan consultation, due to be published in December 2013.

Our determination

19.34 Having considered consultees' responses, we have decided to retain the majority of our draft determination proposal for setting REBS route baselines. We consider that setting baselines at the start of the control period provides more certainty for train operators than allowing annual adjustments to baselines. We also think that fixed baselines provide transparency of any changes that Network Rail may make to its expenditure plans over CP5, as these would be clearly shown against the agreed REBS route baselines.

19.35 The only change from our draft determination proposal is that we will require Network Rail to reconcile its REBS route baselines for the nine routes in England & Wales back to our final determination for England & Wales, on a line-by-line basis[433]. We think that a line-by-line reconciliation will provide a more direct link back to our determination and better align the mechanism with the incentives Network Rail faces, i.e. it has different incentives for operating expenditure than capital expenditure.

19.36 Network Rail will use the delivery plan process[434] to consult on the REBS route baselines and should confirm them in time for the start of CP5.

Methodology for calculating and reporting REBS performance in CP5

Background

19.37 In chapter 23 of our draft determination, we set out how we intended to measure and report on Network Rail's financial performance in CP5. The wider issue of financial monitoring in CP5 is closely linked to REBS because the decisions we make on

[433] By 'line-by-line, we mean that the sum of each income and expenditure line in the agreed REBS baselines should equal the value of each line in our final determination assumptions for England & Wales. For example, the REBS baseline for operations costs in each England & Wales route can be different to our own route-level assumptions as long as the total operations cost assumption across those nine routes is equal to our determination assumptions for England & Wales.

[434] REBS baselines will be provided to us and published in a supporting document to Network Rail's 2014 delivery plan.

monitoring are likely to be a significant factor when train operators are considering whether to take part in REBS.

19.38 Chapter 23 confirms that our approach to measuring Network Rail's financial performance will focus on a comparison between Network Rail's actual income and expenditure and our PR13 determination income and expenditure assumptions. In our draft determination we said that we wanted REBS to be consistent with this wider approach so that our decisions on REBS payments are more transparent and so that they are consistent with our view on Network Rail's total financial performance. By consistency, we do not mean that REBS performance will be exactly the same as total financial performance. However, for the elements of income and expenditure that are included in REBS, our approach to measuring performance will be the same (e.g. we will use our RAB roll forward rules for calculating REBS performance on renewals expenditure)[435].

19.39 Fixed baselines provide certainty for participants in REBS. However, this approach does present risks if Network Rail makes significant changes to spend profiles on certain routes within the control period. To address this issue we said that REBS route baselines will be fixed for the control period and that any significant changes to Network Rail's income and expenditure within the control period would be reflected in annual adjustments to REBS performance.

19.40 In our draft determination, we explained how the measure of total financial performance in CP5 would include adjustments to Network Rail's overspend or underspend against our determination assumptions to better reflect Network Rail's actual performance, e.g. adjusting for rescheduling of capital schemes. REBS performance will already reflect these changes, and so to maintain a stable mechanism, we expect to only approve additional adjustments to REBS performance in exceptional circumstances, i.e. we do not anticipate significant regular annual adjustments, over and above those reflected in the wider measure of Network Rail's total financial performance.

19.41 Our draft determination set out the additional adjustments that we will consider making to the measure of REBS performance:

(a) if Network Rail makes a significant change to its spend profile in a particular route, e.g. Network Rail re-profiles the roll-out of its network operating strategy, where these changes could not have been reasonably known before the baselines were set; or

(b) if Network Rail makes material changes to the methodology for allocating costs between operating routes.

[435] In the financial monitoring section of the monitoring, enforcement and reporting chapter (chapter 23), we provide a worked example of how the RAB roll forward policy will apply to REBS.

19.42 We consider that by allowing these adjustments, we will reduce the potential for windfall gains and losses for train operators.

Summary of consultation responses

19.43 The issue of measuring REBS performance received a number of specific comments from consultees.

19.44 Network Rail agreed that there should be consistency between REBS and the wider financial framework. For example, it thought that REBS should use the same measure of renewals efficiency as is used in total financial performance. It agreed that there should be consistency with the RAB roll forward policy and that this should be extended to the calculation of REBS caps. Network Rail wanted further clarity on the treatment of accelerated / deferred renewals for REBS performance and asked that we agree a transparent and robust process for proposing adjustments to REBS performance. Network Rail also considered that REBS performance should include any output adjustments that we make to Network Rail's total financial performance. Additionally, it suggested that the annual assessment should be completed in a reasonable timeframe after it has published its regulatory financial statements, e.g. 90 days.

19.45 ATOC asked that we explain how we will manage the process of REBS benefit allocation in CP5, given the issues experienced in CP4. ATOC's response to this issue was supported by a number of train operators, including FirstGroup.

19.46 GB Railfreight asked that we provide further detail on criteria for making adjustments to REBS performance, e.g. what is the definition of a 'significant' change to Network Rail's spend profile. GB Railfreight also suggested that there should be a dispute and resolution process for resolving issues between Network Rail and train operators.

19.47 East Midlands Trains (EMT) thought that the calculation of financial performance could over complicate REBS and that our approach could be difficult for train operators to understand, and hence make it difficult to evaluate the likely benefits and risks involved in participating in REBS. EMT also asked us to consider how significant events, which could drive up Network Rail's costs, would be reflected in REBS.

19.48 DfT agreed with Network Rail that REBS performance should include adjustments that we make to Network Rail's financial performance where the company has missed its output targets.

19.49 At the 24 July 2013 workshop, attendees discussed these issues, with the majority agreeing that REBS should be consistent with the RAB roll forward approach to renewals expenditure. Attendees also considered that for REBS to be successful, train operators need to understand both how performance is measured and the reasons behind any differences between our assessment of financial performance and Network Rail's own assessment. Attendees were keen to see our criteria for making adjustments to Network Rail's own assessment of CP5 performance.

Our response

19.50 We agree that it is beneficial to have a consistent approach to measuring both Network Rail's total financial performance and REBS performance. This will help improve the alignment of incentives between train operators and Network Rail, i.e. the value of REBS payments will reflect the benefits/cost to Network Rail. We also note Network Rail's view that the RAB roll-forward policy for renewals expenditure should be reflected in how we calculate REBS caps.

19.51 We agree with Network Rail that it is important to finalise our annual efficiency and finance assessment of Network Rail in a timely manner. In CP5, we plan to issue our annual assessment in early autumn in each year. However, we want our assessment to be as robust as possible and the speed at which we can finalise our assessment will depend on the quality of information provided in Network Rail's regulatory financial statements.

19.52 In our PR13 implementation consultation, published in July 2013, we set out further details of how we will determine and allocate REBS payments to train operators.

19.53 We do not think it is appropriate to set out specific criteria for defining 'material' and 'significant' changes in relation to making adjustments to REBS performance. This is because it is difficult to capture, ex-ante, all the issues that may arise in CP5 where it may be appropriate to make adjustments.

19.54 We acknowledge that there is a balance between producing a measure of Network Rail's performance that reflects the precise level of efficiency it has achieved in each year of CP5 and a simple and straightforward measure that can easily be understood.

19.55 Significant events will be included / excluded from REBS performance, consistent with the CP5 risk and uncertainty framework, e.g. if Network Rail is at risk, then it will be included in REBS performance.

Our determination

19.56 Having considered consultees views on this issue and after further engagement with the industry, we intend to adopt the following approach to calculating REBS performance:

(a) REBS performance will be consistent with any outputs adjustments we make to total financial performance. Although this may require annual adjustments to REBS performance, we think that this approach aligns incentives between Network Rail and train operators and reduces the incentive for participants to encourage cost savings that reduce Network Rail's ability to deliver against its regulatory outputs;

(b) REBS performance will be consistent with the RAB roll forward policy for renewals, i.e. in simple terms, only 25% of renewals outperformance or underperformance will be reflected in REBS payments. Again, this is consistent with the aim of REBS, i.e. to strengthen the alignment of incentives between

Network Rail and train operators. This also has the effect of reducing risk exposure to train operators as they will only be exposed to 25% of any underperformance on renewals expenditure;

(c) caps on upside and downside exposure of 10% will be consistent with the RAB roll forward approach to renewals expenditure[436]. This maintains the consistency between the calculation of REBS payments and of the caps on financial exposure; and

(d) when calculating REBS performance, we will only consider additional adjustments to Network Rail's total finance performance, where:

(i) Network Rail had made significant changes to its spend profile in a particular route, where these changes could not have been reasonably known before the baselines were set; or

(ii) Network Rail has made material changes to the methodology for allocating costs between operating routes.

This will help to provide transparency of changes to Network Rail's income and expenditure against the fixed baseline, whilst allowing adjustments to performance that do not reflect efficiency savings, e.g. the deferral of work to the next year.

19.57 We will also publish a short guide on how REBS will work in CP5 – this should help to explain a number of process-related issues that consultees raised on REBS.

Specific elements of Network Rail's income and costs that will be included in REBS

Background

19.58 In our draft determination, we set out the elements of Network Rail's income and expenditure that would be included in the scope of the REBS mechanism, reflecting those that we consider train operators are able to influence. These were:

(a) support costs;

(b) operations costs;

(c) maintenance costs;

(d) renewals costs[437];

(e) Network Rail's share of RSSB and BTP costs;

[436] In calculating the 10% downside cap, we will reflect that train operators are exposed to 25% of any underperformance on renewals expenditure. For example, the part of the downside cap which relates to renewals will be calculated as: baseline renewals expenditure x 10% (downside cap) x 10% (share of underperformance) x 25% (share of renewals underperformance based on RAB roll forward). Please note that the cap on REBS payments applies at the total baseline level and not on a line-by-line basis for each element of income and expenditure.

[437] Due to the separate treatment of the renewal of civil structures in PR13 we will exclude the impact of volume changes of the renewal of civil structures in CP5 for financial performance purposes.

(f) Schedule 4 & 8 costs;

(g) property income[438]; and

(h) variable usage charge income[439].

Summary of consultation responses

19.59 Few responses commented on the specific elements of Network Rail's income and expenditure included in our REBS proposal.

19.60 Network Rail welcomed the inclusion of Schedule 4 & 8 costs and variable usage charge income within REBS. However, it thought that there was a strong case for including additional elements of income that reflect traffic growth, e.g. capacity charge and electrification asset usage charge income. Network Rail also reiterated its view that property income should be excluded, suggesting that it is more suited to bespoke arrangements.

19.61 EMT agreed with Network Rail that we should include capacity charge income within REBS. Both EMT and Freightliner thought that Network Rail's central support costs should be excluded from REBS.

19.62 The majority of attendees at our 24 July 2013 workshop agreed that additional elements of Network Rail's income relating to network usage e.g. additional variable charges income, should be included within the scope of REBS, as this would partly offset any additional costs from higher network usage. The group also discussed the removal of renewals volume savings from the scope of REBS. The consensus was that removing volume savings would be likely to dis-incentivise train operators from supporting savings in these areas.

Our response

19.63 We consider that there is merit to including additional elements of Network Rail's income that reflect changes in network usage. For example, if Network Rail's costs increased due to an increase in traffic, this would be offset by the increase in charging income. However, we still consider that train operators have some ability to influence Network Rail's property income and think it is appropriate to include this income in the REBS baselines.

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[438] In our draft determination, we excluded Network Rail's telecoms property income because we do not consider that train operators can sufficiently influence this income. We also excluded Network Rail's non-periodic review income because this category of income is included in the spend-to-save mechanism in CP5.

[439] We have excluded volume incentive income from the measure of REBS performance. The volume incentive is in place to incentivise Network Rail to improve its responsiveness to unexpected demand for network capacity. The benefits of accommodating this extra demand should flow to operators through increased revenue. Given our view that REBS should include costs and income that train operators are able to influence, and to avoid the possible double counting of the benefits of additional access to capacity, we think that it is appropriate to exclude volume incentive income from REBS.

19.64 Our view is that train operators are well placed to influence Network Rail's central support costs because train operators run their own corporate services and can support Network Rail in improving efficiencies in this area and can draw on their own experience.

Our determination

19.65 We have considered consultees' views on this issue and have reviewed the elements of Network Rail's income and expenditure that should be included within the scope of REBS.

19.66 We have decided to include, within REBS baselines, all of the elements of Network Rail's costs that we included in our draft determination proposal because we think that train operators can have sufficient influence over these costs. However, we have decided to exclude Network Rail's information management renewals expenditure from REBS baselines because this category of expenditure is included in the spend-to-save mechanism[440].

19.67 We have reviewed the elements of Network Rail's income included within REBS. We agree with consultees that, in addition to Network Rail's property income and variable usage charge income, capacity charge and electrification asset usage charge income should also be included within REBS as these also reflect network usage.

19.68 We have set out the indicative REBS baselines for CP5 in Annex D. This shows the line-by-line assumptions we have made on Network Rail's route-level income and expenditure for each year of CP5.

Approach to determining REBS payments

Background

19.69 Our July 2013 consultation on implementing PR13 set out the changes that we would need to make to track access contracts to implement REBS in CP5.

19.70 In both our draft determination and in the proposed amendments to contractual provisions we said that REBS payments would be determined in the same way as the current EBSM, i.e. the value of any REBS payments will be determined each year in our annual efficiency and finance assessment of Network Rail. We consider that for REBS to provide a real incentive to train operators, it is important that payments are made on an annual basis.

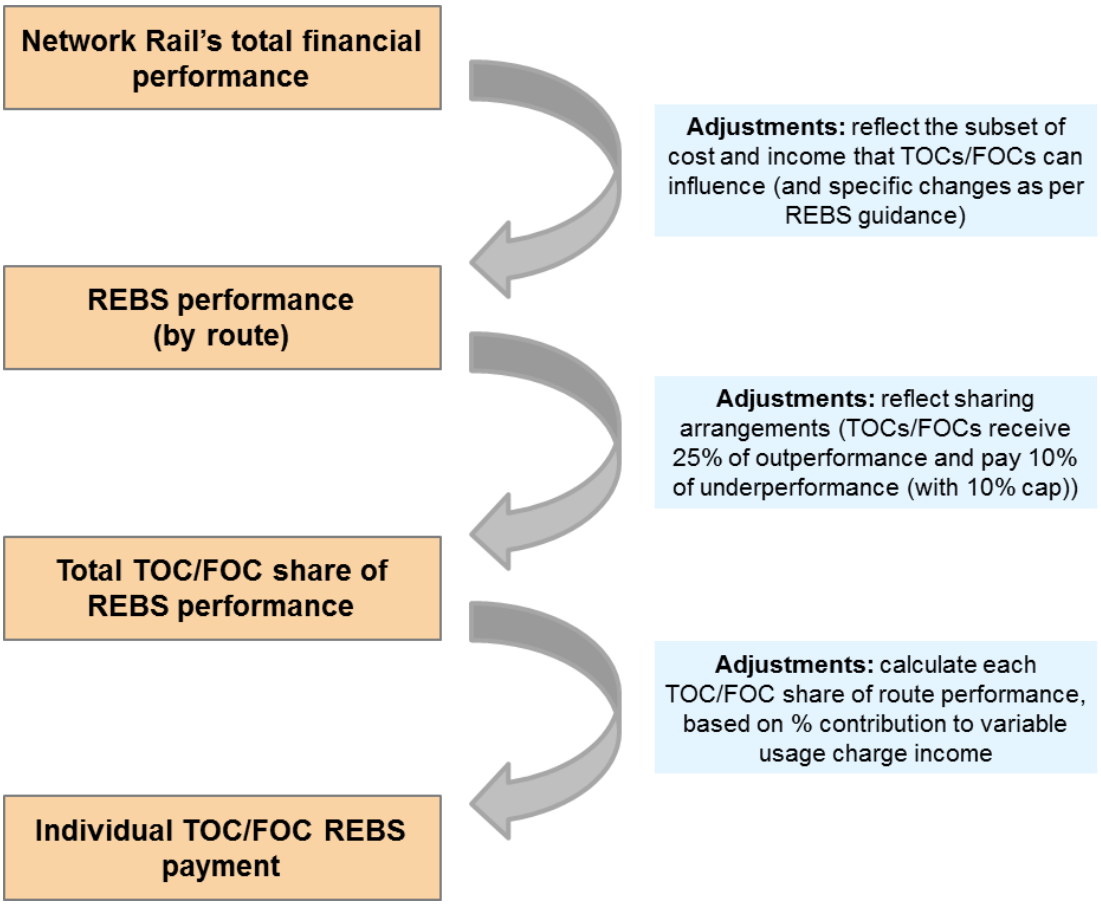
19.71 We also said that REBS performance will be consistent with our assessment of Network Rail's cumulative performance, compared to REBS route baselines, for the control period up to the point of each assessment. We expect that REBS payments

[440] Through the spend-to-save mechanism, Network Rail faces different incentives on its expenditure on information management renewals because we do not think that an overspend in this area is necessarily inefficient. We further discuss the spend-to-save mechanism in the financial framework chapter (chapter 12).

relating to the prior year will be made soon after we have published our annual assessment (usually in the autumn).

19.72 Figure 19.1 shows the steps for calculating REBS payments between Network Rail and train operators.

Figure 19.1: Steps to calculating REBS performance and payments



19.73 In our consultation on implementing PR13, we said that, like EBSM, any REBS payments will be in cash as this will provide a strong incentive to operators and is administratively straightforward. Each train operator's REBS payments will be based on their share of variable usage charge income on each route. This approach has the benefit of capturing an element of the scale of an operator's services.

Summary of our implementation consultation responses

19.74 Only ATOC and Network Rail provided comments in this area of our REBS proposals.

19.75 ATOC asked us to clarify the different scenarios under which train operators can opt-out of REBS and how REBS payments would be apportioned where a new operator, mid-year, took on an existing track access agreement.

19.76 Most of Network Rail's comments related to the interaction of REBS with alliance arrangements. Network Rail considered that our current definition of an alliance agreement is too broad and that it should only apply where an alliance would be likely

to have a material direct financial impact on a REBS route baseline. It also asked us to clarify the information that we would require to assess whether a particular alliance was likely to have a material direct financial impact on a REBS route. Network Rail considered that we should widen the current opt-out provision to include the operator that enters into an alliance.

19.77 Network Rail also suggested that we should increase the period of time for which train operators and Network Rail have to make REBS payments following our decision. It suggested that this is increased from 28 days to two months.

Our response

19.78 We confirm the situations in which opt-outs are permitted below.

19.79 We have reviewed the notification we require from Network Rail when it enters into alliance arrangements. Given that Network Rail enters into a large number of very small alliance arrangements across the network, we think that it is appropriate for Network Rail to only notify us (and affected train operators) when it considers that a new alliance arrangement would be likely to have a material direct financial impact on a REBS route baseline. However, we will still have responsibility for deciding whether the alliance is likely to have a material direct financial impact on a REBS route baseline. We will address this issue in our final amendments to track access contract provisions.

19.80 We will work with Network Rail to determine the information that we will require to assess the financial impact on a REBS route baseline from a new alliance.

19.81 We consider that it is appropriate to allow two months for train operators and Network Rail to make REBS payments following our decision. More time may be required as payments will now be calculated for each operating route and because train operators may now also be required to make payments to Network Rail, given that REBS provides upside and downside exposure for train operators.

Our determination

19.82 Having regard to the issues raised in consultation responses, we have decided to maintain the general approach to determining REBS payments that we proposed in our consultation on implementing PR13. In each year of CP5, REBS payments will be determined as follows:

(a) we will publish our assessment of REBS performance in our annual efficiency and finance assessment of Network Rail. This will be based on our assessment of Network Rail's cumulative performance, compared to REBS route baselines, for the control period up to the point of each assessment;

(b) Network Rail and/or train operators will be required to make REBS payments within two months from the date that we publish our annual efficiency and finance assessment of Network Rail;

(c) REBS payments will be in cash; and

(d) each train operator's REBS payments will be based on their share of variable usage charge income on each route.

19.83 Train operators will be able to opt-out of REBS within three months of the start of CP5[441]. However, we also think that train operators should be able to opt-out from REBS on a particular route, where there is a material change in the risks faced by train operators from participating in the mechanism. Given this principle, we will also allow train operators to opt-out from REBS in the following circumstances:

(a) within two months of entering into a new franchise on that route;

(b) within two months of the start of operating train services on the route, where it has not previously done so[442]; and

(c) within two months of the start of an alliance arrangement on that route, where we consider this alliance could have a material financial impact on REBS baselines for that route (including the franchisee that enters into the alliance).

19.84 For the avoidance of doubt, except where a train operator has notified us of its intention to opt-out from REBS in CP5, train operators will be 'opted-in' to REBS in CP5.

Franchising considerations

19.85 In CP4, the majority of franchised train operators are not eligible to receive payments under EBSM because the governments did not waive the clause 18.1 / schedule 9 (no net loss, no net gain) provisions in existing franchise agreements. However, in CP4, DfT agreed to waive this provision for new franchises.

19.86 Throughout PR13, both governments have been supportive of REBS and we understand that they will both allow new franchises (let through open competition) to enter into REBS, i.e. to retain the potential benefits and costs from the mechanism. Prior to DfT issuing its revised rail franchise schedule[443], published in March 2013, this would have resulted in a significant number of franchises being eligible for REBS from the start of CP5.

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[441] In our draft amendments to track access, published in July 2013, we said that train operators could opt-out of REBS within two months of the start of CP5. We now think it is appropriate to allow more time for train operators to consider their decision on REBS and so we have now increased this to three months.

[442] A new franchisee will not be bound by the decision of the previous franchise holders with respect to REBS. We also intend this to apply where an existing franchisee takes on the responsibility for delivering the services of another franchise, e.g. where two franchises merge into one.

[443] DfT's revised rail franchised schedule is available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/170565/rail-franchise-schedule.pdf.

19.87 However, the revised England & Wales rail franchise timetable includes a number of negotiated direct awards with existing franchisees and this has the effect of reducing the number of franchised operators eligible for REBS from the start of CP5[444]. This is because DfT has said that, for new competitively let franchises, it intends to allow train operators to join REBS but this is unlikely to apply to negotiated direct awards with existing franchisees. Transport Scotland also intends to allow its new franchises to join REBS[445].

19.88 Although the latest franchise timetable may initially reduce the coverage of REBS (compared to our initial expectation), we think that it is still appropriate to implement REBS at the start of CP5 as this will allow open access operators (passenger and freight) to enter into REBS, as well as those new franchises that are due to start in the first year of CP5[446]. As franchises are re-let in CP5, the coverage of REBS should increase.

Exposing franchised train operators to changes in Network Rail's costs at a periodic review

Background

19.89 In most regulated industries, the customers of the regulated companies have an incentive to engage with a periodic review, challenging the regulated companies' costs (including scope of work and unit costs) to secure lower regulated prices. They do this because they benefit from these lower prices. In rail, franchised train operators currently do not have this incentive because they are held neutral (with some exceptions) through their franchise contracts to changes in Network Rail's access charges as a result of our periodic reviews.

19.90 To complement our decisions on REBS, in December 2012, we decided that rather than implementing a new regulatory mechanism to address this issue, we will instead ask franchise authorities to provide new franchises with exposure to cost-reflective changes in the variable usage charge[447].

19.91 This approach has broadly the same objective as REBS (i.e. to strengthen incentive alignment). But instead of incentivising within control period efficiencies, it encourages

[444] This issue does not affect open access operators (passenger and freight) as they do not have the same agreements with governments.

[445] However, Transport Scotland's consultation response highlighted that it welcomed the industry initiative to explore a "deeper alliance" as part of the ScotRail refranchising process to increase efficiency and reduce costs. As such, it is unlikely that the main Scottish franchise will participate in REBS in CP5.

[446] The DfT rail franchise schedule indicates that the following new franchises will start in the first year of CP5: Essex Thameside; Thameslink, Southern and Great Northern; and East Coast.

[447] This change would only impact new franchised train operators from CP6, i.e. as a result of changes that we may make to Network Rail's track access charges at our next periodic review.

train operators to engage with us and Network Rail during the periodic review process to drive down industry costs.

19.92 However, given the proportion of Network Rail's costs that are recovered through the fixed charge, we also explained in December 2012 that we thought that exposing franchisees to changes in the fixed charge would generate further efficiency savings by increasing train operators' interest in Network Rail's costs at a periodic review.

19.93 The decision on whether to increase franchised train operator exposure to changes in Network Rail's charges is ultimately for the governments to make. DfT has said that it will consider this for future franchises. It is interested in greater alignment between train operators and Network Rail, and thinks that this would be a good way to achieve that end since it would incentivise train operators to reduce infrastructure costs in the longer term. However, DfT is still considering how it can be implemented – and suggests that the proposal is considered further as part of the forthcoming structure of charges review which will form a key part of our forthcoming PR18 development programme. However, Transport Scotland has confirmed that it does not intend to expose the new Scottish franchises to changes in access charges.

19.94 We recognise that providing exposure to changes in Network Rail's fixed costs is a significant departure from existing industry arrangements and we would expect that any further exposure to Network Rail's costs, i.e. exposure over and above changes in the variable usage charge, would be phased in over more than one control period (i.e. from CP6 onwards).

Summary of consultation responses

19.95 Few responses specifically commented on our proposals in this area.

19.96 Network Rail's response agreed that this issue was a matter for governments and noted both DfT and Transport Scotland's views.

19.97 Rail Freight Group noted our discussions over exposing franchised operators to changes in access charges and questioned the benefit in seeking to introduce more complex regimes if franchises remain insulated from any changes.

Our response

19.98 This is not a change that can be implemented in the short term as it is likely to require significant changes to the existing approach to risk in franchise agreements and to our charging framework (e.g. being clearer about the costs that are recovered through the fixed charge and network grant). As part of our wider review of the charging structure, we will work with governments to explore the options for increasing franchised train operators' exposure to the changes we make to charges at future periodic reviews.

Enhancements efficiency benefit sharing

19.99 We want to strengthen the incentives for the industry to work together to drive down the costs of enhancements. In chapter 9, we describe how we expect Network Rail

and operators to enter into commercial agreements that will reward operators if real cost savings are achieved as a result of their involvement. We consider this is a powerful tool to enable Network Rail to outperform the PR13 settlement.

19.100 Network Rail can already enter into arrangements with train operators who want to fund additional enhancements or share the gains or savings from such investment. There are also examples where Network Rail pays for train operator input during project design and delivery. However, this arrangement does not provide any commercial incentive for the operator to drive down costs, with the risk that any new enhanced infrastructure is viewed as 'free goods'. A commercial arrangement would align incentives to reduce project costs while still achieving the outputs.

19.101 The commercial agreements would be for Network Rail and operators to agree on a case by case basis. The agreements could be at an individual project level, a route-based level, or a portfolio level. Network Rail would set a baseline enhancement project cost and would need to define a corresponding output consistent with the HLOS. We are not mandating this approach, and it is for Network Rail to decide which projects and the specific terms of any commercial agreement, but we consider it a means to reduce costs further than current industry engagement allows. This incentive is described in more detail in chapter 9.

Research & development and innovation

19.102 We support R&D and innovation. Increased emphasis on R&D and innovation is likely to improve Network Rail's productivity in the long-run. Low levels of R&D and innovation have been identified by several studies as a reason for poor productivity in the rail industry. The RVfM study identified the potential for significant annual savings from 'safety, standards and innovation' by the final year of CP5. Investment can be risky but returns on investment can be high.

19.103 The Secretary of State's HLOS included a ring-fenced fund of £140m (2011-12 prices) over CP5 to support R&D and innovation, the development of potential enhancement schemes in CP6 and Network Rail's work to develop the link between HS2 and the existing network; £50m (2011-12 prices) of this is assumed to fund R&D (including innovation) expenditure, which Network Rail will be able to access. Subsequently, and completely separately from the HLOS fund, as part of its SBP, Network Rail requested an additional £300m for the funding of R&D and innovation expenditure in CP5. This section concentrates on this SBP request.

19.104 We acknowledge that there are reasons why Network Rail's incentive and ability to invest in R&D and innovation may not be as strong as it could be. For example:

(a) Network Rail argues that the gains from innovation are accrued over the long-term while the costs are short-term. The resetting of the price control only allows it to retain the benefits of innovation over a five year period – over which time it may not be compensated fully for the risk of the investment;

(b) our other incentives may not entirely address the problems that could arise due to Network Rail's monopoly status which might mean that the company lacks enough competitive tension that incentivises it to reduce costs, including through the adoption of innovative practices; and

(c) in general, the level of innovation may be too low where the benefit that the innovating firm expects to receive is not as high as the wider benefits that could flow from it.

Our draft determination

19.105 In our draft determination, we did not include any of the £300m requested by Network Rail in its SBP, within our baseline renewals or enhancement expenditure. We did, however, propose that subject to a well justified proposal from the company, we would introduce a matched-funding financial incentive whereby we would make provision in the settlement for each additional pound which Network Rail spends on R&D or innovation to be matched (up to £50m), and consider wider changes to the regulatory framework.

19.106 To minimise the cost of any further governance and provide read-across, in our draft determination, we proposed to subject the matched funding to similar governance arrangements as the HLOS funds. As with all funds, details of the governance process will be set out in Network Rail's draft delivery plan in December 2013. Unlike other funds however, the HLOS innovation fund will be considered as a portfolio of projects rather than on a project by project basis. Assessing individual projects would work against the provision of certainty for customers and funders, especially given the risky nature of innovation. Furthermore, this innovation funding will qualify for addition to the RAB if the RAB addition conditions are satisfied and an assessment by those deciding on awards, based on clear, good quality evidence shows that the portfolio will add value to Network Rail's network. Ex-post evaluation, although important for future decision making, will play no part in deciding how much of this HLOS innovation funding should be added to the RAB as to do so would undermine the certainty we wish to provide to the fund.

19.107 We invited Network Rail to set out its proposals on matched funding ahead of the final determination and to provide its view on how we might best develop the regulatory framework to encourage R&D and innovation.

Summary of consultation responses

19.108 In its response to our draft determination, DfT said that it supports the proposed increase in funding for innovation but would welcome some more clarity on how this will work in practice and the governance process required. It also requested more clarity on how this can best support innovation across the entire rail system.

19.109 The key points raised by Network Rail in its response to our draft determination were:

(a) Network Rail does not want the matched funding for innovation to be limited to £50m if a strong business case is established. It believes its strong governance proposal and proposed greater reporting provide suitable controls on the level of funding[448];

(b) Network Rail proposed that our assessment of whether spend could be added to the RAB should be done at a portfolio level rather than project by project;

(c) Network Rail requested that all funding for R&D and innovation (not just the matched part) should be provided via the RAB additions policy since it would be unlikely to be able to commit funding via outperformance until at least half way through the control period; and

(d) Network Rail proposed leveraging co-funding from third parties but requested that this should be considered an outcome and not a precursor for accessing R&D funds as this could stifle worthwhile opportunities.

19.110 RIA also commented that if innovation is sufficiently worthwhile to attract third-party funding then it should be encouraged and not restricted as this is in the long term interest of the railway.

Our determination

19.111 After careful consideration of the issues raised in response to the consultation we intend to continue with the matched-funding financial incentive which we proposed in our draft determination. We have made provision for up to £50m to Network Rail of matched-funding for R&D and innovation. For the avoidance of doubt, this is £50m separately and in addition to the £50m provided via the HLOS innovation fund.

19.112 We do not agree that the fund should be left open-ended. This £50m of funding is intended to incentivise and help kick-start higher levels of innovation. It is not designed to provide all innovation funding required in the industry or to place a limit on the opportunities for funding. There is no limit to the amount that Network Rail can spend on R&D, where it has secured these funds from elsewhere. Our matched funding source is only one avenue available to Network Rail to fund R&D and innovation. Other sources of funding do already exist (£50m HLOS fund, RSSB funding, Transport Catapult Fund) and Network Rail has not provided us with any evidence that these other sources are likely to be exhausted. We consider that our fund achieves a balance with the funding which funders want to make available and the risk that a too large fund could simply crowd out sources of private investment which could otherwise have been identified and exploited.

[448] Network Rail proposed a 'stepping up of funding with maturing capability' approach which is described in its main response and in further detail in a supporting document. Network Rail stated that this approach would enable an appropriate level of investment throughout the control period. This proposed approach involves reporting and evaluating arrangements at the end of each stage.

19.113 Furthermore, this approach is designed to provide some control around the fund – if left open-ended it could encourage the fund being used for activities that Network Rail is already funded for rather than for genuinely 'innovative' ideas.

19.114 The ORR matched part of the fund will be financed by the RAB using a consistent approach to the HLOS innovation fund. The RAB additions will be determined by Network Rail's governance process which will be agreed by us and set out in its December 2013 draft delivery plan. However, we expect that it will take a similar form to the governance process which we agreed with Network Rail in February 2013 in respect of the HLOS fund as described above.

19.115 Network Rail will need to identify its side of the funding – whether sourced through outperformance or third party funding. This part of the funding will not be funded through a RAB addition. We consider that this is important since it should encourage Network Rail to consider carefully the risks and rewards since the approach involves it committing its own money or convincing other third parties to do so, thus introducing an implicit form of governance.

19.116 We will ensure there is transparency around the use of the funding – for example, the retrospective publication of details of how the fund has been used. This will further improve the incentives for the proper use of the funding.

Volume incentive

Overview

19.117 In December 2012, we published our PR13 consultation on the volume incentive[449]. This incentive is intended to encourage Network Rail to be more responsive to unexpected demand for network capacity over and above an agreed growth baseline level. Forecast volume incentive payments of £68m for CP4 have been credited to Network Rail's opex memorandum account and will be paid over CP5.

Rationale

19.118 One of Network Rail's functions is the efficient management of existing network capacity. It is important that the company is incentivised to make network capacity available in response to unexpected demand. In a more commercial setting, Network Rail would face such an incentive as a result of having a more commercial set of relationships with its customers – relationships in which the company profited by selling more of what its customers wanted such as the use of network capacity.

19.119 The volume incentive should encourage Network Rail to think about the provision of network capacity to its customers in a more commercial way. This involves making trade-offs when deciding whether to meet unexpected demand.

[449] *Volume incentive consultation*, December 2012, available at http://www.rail-reg.gov.uk/pr13/consultations/volume-incentive.php.

December 2012 consultation

19.120 Responses to our consultation earlier in PR13 confirmed our view that the volume incentive is not fully effective currently in performing its intended role. Many respondents believed that the volume incentive has not been effective principally because it is neither visible to nor well understood by decision makers within Network Rail. So, in our December 2012 consultation document, we put forward a range of measures to improve its effectiveness.

19.121 We asked Network Rail to put forward proposals on how it will improve understanding of, and engagement with, the volume incentive at a route level where decisions on capacity are taken, for example by attributing incentive payments to its individual operating routes and so linking it to the decision makers.

19.122 We consulted on a range of changes to the design of the incentive including disaggregating the incentive to an operating route level, the possible introduction of a downside to make the incentive operational in a greater range of circumstances, and whether we should continue with the existing payment mechanism which defers payment to the next control period.

19.123 Finally, we asked whether we should continue to use the existing approach to calculating the incentive rates – and what other approaches might exist. And we recalculated the incentive payment rates using broadly the existing approach, but with new evidence[450], and arrived at passenger and freight rates which were significantly higher than those used in the current control period.

19.124 We received 15 responses to our December 2012 consultation[451]. At the end of January 2013 we held a small stakeholder workshop to discuss the consultation and to understand better the wider views of the industry on the effectiveness of the incentive. We have considered this stakeholder feedback and carried out quantitative analysis to assemble an evidence base to inform and support our approach. We have also drawn on discussions at meetings with Network Rail, DfT and Transport Scotland.

Responses to our draft determination

19.125 In our draft determination we invited views on our detailed approach to the volume incentive in CP5 which we set out in that document. We particularly invited views on our proposal to set a national ceiling and floor on payments under the volume incentive of +/- £300m over the whole of CP5.

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[450] See *Volume incentive consultation*, December 2012, for details of new evidence.

[451] Consultation responses are published on our website at http://www.rail-reg.gov.uk/pr13/consultations/volume-incentive.php.

19.126 In its response to our draft determination, Network Rail was supportive of many elements of our proposals, including those to improve the transmission mechanism, introduce a downside, and maintain national incentive rates. While Network Rail was content to see a downside introduced, it stressed the importance of setting the baselines at the expected growth level and expressed concern about the level of the floor on payments, suggesting a floor of -£100m would be more manageable for its business. Network Rail also expressed a strong view that, as with ESI coal, biomass should be excluded from the volume incentive.

19.127 We received a small number of additional comments on the volume incentive in other responses to the draft determination. There were no material issues raised on the key elements of our proposal. Several train operators highlighted the importance of considering the volume incentive together with Schedules 4 and 8 and the capacity charge, as suggested by RDG. A small number of respondents expressed concerns about how well the volume incentive is understood by decision makers in Network Rail. A freight operator expressed support for the inclusion of biomass in the volume incentive.

19.128 We have considered the responses to the draft determination carefully and how these might affect the detailed proposals set out in our draft determination. Since most of the comments received were in support of, or consistent with, our proposal as set out in the draft determination, the section which follows relates our final determination to both the responses received to the December 2012 consultation and, by exception, to the responses received to our draft determination.

Our final determination

19.129 Our approach is summarised below, then described in more detail:

(a) **overall effectiveness:** Network Rail has committed to a range of measures to strengthen the transmission mechanism in CP5;

(b) **disaggregation:** the incentive will be calculated relative to disaggregated route-level growth baselines while maintaining national incentive rates;

(c) **downside:** we are introducing a downside with symmetric payment rates around expected growth baselines. We are introducing a national ceiling and floor on total payments over the control period;

(d) **payment mechanism:** we are continuing to allow accrual of payment for release over the next control period, but amounts will be calculated and credited to the routes on an annual basis;

(e) **other design issues**: we are continuing to allow for all growth, to apply the incentive to all routes and to exclude commodities that are subject to mark-ups such as the freight specific charge and the freight only line charge;

(f) **baselines:** we are setting a total national growth baseline for each of the metrics. We will agree the principles for disaggregation with Network Rail in

advance of its draft delivery plan consultation and review the proposed annual, route-level baselines before these are put in place for the beginning of CP5.

(g) **metrics:** we are continuing with all four existing metrics of farebox and passenger train miles for passenger volumes and freight train miles and freight gross tonne miles for freight volumes; and

(h) **incentive rates:** we are adopting the updated version of the rates in line with the approach set out in our December 2012 consultation, with minor changes reflecting updated information.

Overall effectiveness

19.130 Almost all respondents to the December consultation were supportive of the need for a volume incentive, at least in the short term. But there was a clear message that the incentive has not been properly effective to date and that it needs to be improved going forward. While respondents were broadly supportive that we are considering the 'right' design areas to improve its effectiveness, particularly disaggregation, there was the sense that something else is needed to improve the transmission mechanism and the way in which Network Rail thinks about, and acts on, the volume incentive internally. Some responses to the draft determination reiterated the need for the incentive to be well understood and effective.

19.131 Getting the transmission mechanism right is a matter for Network Rail. In April 2013, we wrote to Network Rail asking it to identify and commit to changes by building on the ideas in its response to the December 2012 consultation[452]. Network Rail responded to us in April 2013 suggesting a combination of approaches outlined below[453]. It proposed that:

(a) volume incentive payments will be included in the Financial Value Added (FVA) measure, a measure of Network Rail's outperformance. Under the current staff incentive arrangements, this will have an impact on the level of payments to senior Network Rail staff;

(b) the payments to senior route-based staff will also be affected through inclusion of the routes' performance against traffic targets in routes' FVA. Senior staff working centrally would be affected by the sum of the routes' performance against the national volume incentive baselines;

(c) baseline and outturn traffic figures will be published at a route level in Network Rail's annual regulatory accounts; and

[452] For the letter which we wrote to Network Rail in April 2013 asking it to identify and commit to changes to the transmission mechanism by building on the ideas in its response to the December 2012 consultation see http://www.rail-reg.gov.uk/pr13/PDF/vi-transmission-mechanism-2013-04-04.pdf.

[453] For Network Rail's response to our April 2013 letter see http://www.rail-reg.gov.uk/pr13/PDF/vi-transmission-mechanism-2013-04-19.pdf.

(d) where there is overall outperformance against the volume incentive baseline, Network Rail will make decisions centrally about how to use any gains but routes would make proposals about ways of spending outperformance, which would be judged against 'payback' criteria. Network Rail will also work with passenger and freight operators through existing processes and report on how it spends any outperformance in its regulatory accounts. It plans to issue an industry consultation on the governance arrangements for determining any spend of outperformance.

Disaggregation

19.132 Most respondents to the December 2012 consultation supported disaggregating the incentive as this could potentially increase visibility and effectiveness. Among passenger operators and their representatives (including ATOC), there was broad support for disaggregating the growth baselines to a route level with a national incentive rate. A few respondents felt that the disaggregation should be at a more granular level, or include disaggregation of the incentive rates, to better account for the variation in the social value of rail by region. Freight operators (and freight customer representatives) expressed concerns about disaggregation. Respondents felt it would add unnecessary complexity as most freight flows do not map neatly onto Network Rail's operating routes. DfT and Network Rail were broadly supportive of disaggregation, with Transport Scotland also favouring disaggregation below the route level. A majority of respondents did not support an alternative form of disaggregation e.g. by TOC. There were no material comments in relation to this issue in the responses to the draft determination.

19.133 Growth baselines will be disaggregated but we will maintain national incentive rates. Disaggregated route level data on passenger train miles, freight train miles and freight gross tonne miles exists already. Disaggregated route level farebox data does not exist but we will work with Network Rail to translate the national baseline into route-level baselines ahead of the start of CP5. We consider that this approach is consistent with the majority of stakeholder feedback and could increase effectiveness of the incentive by improving visibility and targeting route based decision makers. The approach could also allow us to gain valuable knowledge/ data to inform future work on the charging framework. Going further and disaggregating incentive rates is unlikely to result in more appropriate incentive rates being applied to particular volume increases, as we would expect rates to vary more within routes than between them.

Downside

19.134 Most respondents to the December 2012 consultation were in favour of a downside to the volume incentive and many made statements supporting our principles for having a downside (e.g. keeping the incentive effective at all times, mitigating incentives to reduce volume). Some respondents who were less supportive of the volume incentive as a whole also expressed doubts about a downside. The Rail Freight Group suggested that the downside will be difficult to implement and may be perverse or

counterintuitive. Network Rail "recognise ORR's arguments in considering introducing a downside" but proposed that in order to manage risk, a downside should be capped at the national level. Several respondents expressed concerns around Network Rail being exposed to risks outside its control, especially for freight volumes, and there was support for a floor on payments. In its response to the draft determination, Network Rail supported the downside but expressed concerns about the size of the proposed floor on payments.

19.135 We will introduce a downside for CP5, with symmetric incentive rates so that the same rates apply to both the upside and the downside. We consider that, on balance, a downside will improve the effectiveness of the incentive by removing the uncertainty over whether the volume incentive will apply to a specific increase in volume, since currently it works only if volumes are above the baseline. Symmetric rates eliminate any uncertainty over which rates might apply to a given increase in volume. The downside should mitigate Network Rail's incentive to reduce volume under pressure from the performance regime, keep the incentive working when volumes fall below the baseline (e.g. in recessions) and strengthen the incentive for Network Rail to proactively expand capacity[454]. A downside will interact with disaggregation by allowing netting off of payments from routes that are below the baseline from those that are above the baseline.[455]

19.136 We will introduce both a ceiling and a floor on payments under the volume incentive. The floor will cap downside payments from Network Rail. The ceiling will cap upside payments from governments. While we did not consult explicitly on a floor and ceiling in our December document, a floor was supported by several consultation responses, mainly to mitigate risk to Network Rail, particularly amid concerns that the downside exposes Network Rail to risks beyond its control. And we consider the ceiling to be an important feature of the incentive since we propose to introduce higher incentive rates but our statutory duties require us to take into consideration government finances and affordability.

19.137 The levels of the floor and ceiling are based on analysis of possible payment scenarios under different assumptions on background growth in passenger and freight demand and the timing of the delivery of major capacity based enhancements. The floor and ceiling are intended to balance the risk of the incentive becoming inactive (achieved by setting the levels of the floor and ceiling so that they are relatively

[454] Payments are not cost based and so any downside payments are not intended to reflect any decrease in cost associated with reduced volumes.

[455] Under the CP4 incentive design, the volume incentive payment is calculated at the national level and so volumes below the baseline level on one route could be offset by those above the baseline on another route. If in CP5 disaggregation was introduced without a downside, for many patterns of volume increases the payment would be higher than in CP4, because volumes below the baseline for some routes would not be offset by volumes above the baseline for other routes.

unlikely to become binding), against affordability concerns for both governments and Network Rail. We have illustrated this in the final section of this chapter.

19.138 We have considered Network Rail's concern about the level of a floor on payments as expressed in its response to the draft determination. However, we will introduce a floor of -£300m and a ceiling of +£300m for CP5 as set out in the draft determination. Setting a lower floor of -£100m, as suggested by Network Rail, would make it more likely that the incentive would become inactive in CP5, reducing its effectiveness.

19.139 The baseline will reflect expected growth, and will be based on Network Rail's traffic model and DfT farebox projections with appropriate adjustments to reflect asymmetric risk to these projections. Setting the baseline at expected growth, with symmetric incentive rates, gives the incentive an expected value of zero. A baseline set below expected growth might require a corresponding adjustment to fixed charges for a positive expected value of the volume incentive. This adjustment would avoid Network Rail receiving a volume incentive payment for volumes that it was expected to deliver and for which it had been paid already. An expected growth baseline means that positive and negative volume incentive payments are easily interpreted, which might contribute towards improving the transmission mechanism.

Payment mechanism

19.140 At present, the volume incentive is calculated annually, but paid over the subsequent control period through the opex memorandum account, with regard to affordability. Most respondents to our December consultation, including Network Rail, supported the continuation of payments through the opex memorandum account. They did not think that the deferral of payment affects incentives or if it does, that this is a secondary issue, and that it is the transmission mechanism which is the most important driver of effectiveness. And both Transport Scotland and DfT stated clearly that the timing of payment to Network Rail will affect affordability for funders. But nearly all respondents supported the annual calculation and crediting of incentive payment amounts to the individual routes. There were no further comments on this element of our proposal in the draft determination responses.

19.141 We will continue with the existing payment mechanism, with volume incentive amounts accrued in the opex memorandum account and paid over the subsequent control period, profiled according to affordability.

Other design issues

19.142 Most respondents to the December 2012 consultation opposed crediting the volume incentive only in congested areas of the network, mainly because of difficulties with the definition and measurement of congestion. The majority of respondents said that Network Rail should be credited for all volume growth, some because of the need to incentivise Network Rail to accommodate all volume, whatever its cause, and some because of the practical problems in distinguishing what Network Rail had caused.

We did not receive any further comments on this issue in response to the draft determination.

19.143 In December 2012, we consulted on excluding ESI coal and spent nuclear fuel. When coal was excluded in PR08 it was argued that coal was 'captive' to rail and did not need an incentive for that reason. Network Rail supported that as did Freightliner (with some concerns about Scottish coal) and RFG (who wanted to ensure biomass attracted the volume incentive). Arriva supported it but not if there were data problems at the route level. DB Schenker, Transport Scotland, Centro and PTEG did not support the exclusion or did not see the point of it.

19.144 In its response to our draft determination, Network Rail strongly disagreed with our proposal to include biomass in the volume incentive, which it considered should be treated consistently with ESI coal, given that biomass is a close substitute for ESI coal. A freight operator supported the inclusion of biomass in the volume incentive.

Our decision

19.145 We will continue to apply the incentive to all routes since congestion may not necessarily be correlated with high value volume and we expect that it will be difficult to measure. We propose to continue to include all growth regardless of who has driven that growth. Our rationale is that all volume is valuable and separating Network Rail-caused volume is both difficult and could set the wrong target.

19.146 We will continue to exclude commodities that are subject to mark-ups such as the freight specific charge and the freight only line charge (data allowing)[456]. Our rationale is that these mark-ups provide an incentive for volume that does not need duplicating.

19.147 We have taken into account comments on the inclusion of biomass in the volume incentive. Future growth in biomass is uncertain, but we consider that it is important that Network Rail is incentivised to accommodate any such growth. For this reason, biomass will be included in the volume incentive but we have accepted an adjustment to the baseline, proposed by Network Rail, to reflect the greater degree of uncertainty associated with this commodity and asymmetric risk to the biomass forecast.

Metrics

19.148 In their responses to the December 2012 consultation, Network Rail and some freight operators commented that for freight, more weight should be put on the gross tonne miles measure, in order to incentivise more efficient traffic growth. At our January 2013 workshop, RFOA said that all the measures should in fact relate to better use of available capacity rather than encouraging more capacity. Centro argued that a metric which focuses on train miles is likely to incentivise long-distance services

[456] We expect data to be available to exclude ESI coal and iron ore. We recognise that it is difficult to exclude spent nuclear fuel from the volume incentive baselines and outturn data, as this is not recorded separately in Network Rail's billing system. We consider that as this traffic is relatively small, its inclusion will not materially affect the financial impact of the volume incentive.

(passenger or freight) rather than short-distance passenger commuter services. We did not receive any material comments on this issue in response to the draft determination.

19.149 We propose to continue with all four existing metrics. We have considered the consultation responses and discussed the availability and potential vulnerabilities of the existing metrics with Network Rail and DfT (which holds farebox data). Train miles metrics are not entirely satisfactory because they could encourage empty trains and longer distance volumes, and growth in farebox could reflect developments outside Network Rail's control such as changes to wider government policy. However, loss of either the train miles or farebox metrics without a satisfactory substitution could reduce the effectiveness of the incentive since the broad scope represents a range of different values. In recognition of these concerns we will allow for the re-opening of the farebox baseline in CP5 if it is clear that it will be affected by a change in fares policy, and we are confident that we can isolate that effect[457].

Baselines

19.150 In the workshop and in its response to the December 2012 consultation, Network Rail suggested that ORR should set a national growth baseline, and then it, in consultation with operators, would set route level growth baselines. In its consultation response, Network Rail also argued that by continuing to apportion growth over a control period equally between the five years, the baseline is likely to be unachievable in the early years of CP5. This is because growth is not forecast to be uniform over CP5, but concentrated in the final years of the control period when a number of capacity driving enhancements e.g. Thameslink, Crossrail are due to be completed. In its response to the draft determination, Network Rail reiterated its intention to work with ORR to finalise national baselines and to consult on route level baselines.

19.151 In our draft determination, we set out our intention to set expected growth baselines. We also recognised that the delivery of a number of capacity enhancing projects in CP5, which are due to complete towards the end of the control period, means that the passenger train miles growth forecasts included in Network Rail's traffic forecasting model are unlikely to be an accurate representation of expected growth. Since our draft determination we have worked closely with Network Rail to ensure that the baselines are as accurate as possible. To inform the setting of expected growth baselines, Network Rail had prepared probability analysis of its forecasts that reflect uncertainties around the timing of capacity-enhancing projects. We have carefully reviewed this analysis and underlying assumptions, and used this to inform our setting of national growth baselines.

[457] In line with our approach to setting the farebox baseline, we would expect to draw on data from alternative runs of DfT's Network Modelling Framework to estimate the effect of a change in fares policy. To adjust the farebox baseline we would need to consider the timing of any change in fares policy, and assess the practicality of translating changes in the national baseline to the route level.

19.152 National growth baselines for passenger train miles, passenger farebox, freight train miles and freight tonne miles are shown in Table 19.1 below. Compared with our draft determination, these baselines are based on more up-to-date forecasts, in most cases drawing on forecasts prepared for Network Rail's draft delivery plan. In our draft determination, we used SBP traffic forecasts for passenger train miles, freight train miles, and freight gross tonne miles. In response to our draft determination, a freight operator expressed concerns about the use of the SBP traffic forecasts as a baseline for the volume incentive, partly because these forecasts assume unconstrained network capacity. We are now setting the freight baselines using forecasts prepared for Network Rail's delivery plan, which reflect constraints on the development of new intermodal terminals.

19.153 Our approach can be summarised as follows:

(a) the passenger train miles baseline is based on probability analysis of Network Rail's traffic forecasts prepared for its delivery plan and expressed as total growth over CP5. We have adjusted the forecasts to account for asymmetric risk around the timing of the delivery of enhancements, for example risks of delay associated with rolling stock procurement, agreements between TOCs and funders, and external delivery of enhancements (such as Crossrail);[458]

(b) the baseline for farebox is based on the DfT Network Modelling Framework[459]. We have adjusted the forecast to ensure it captures revenue growth that would occur within CP5, and to adjust for asymmetric risk (consistent with our approach to the passenger train miles baseline) to ensure that the baseline reflects expected growth;

(c) the freight baselines are for chargeable traffic (excluding ESI coal and iron ore), and are based on Network Rail's traffic forecasts prepared for its delivery plan. These forecasts reflect freight volume growth forecasts included in the draft Freight Market Study[460], with adjustments to reflect short-term economic growth forecasts and constraints on the development of new intermodal terminals. We have made a further adjustment to the delivery plan forecasts to reflect downside risks to biomass traffic by delaying forecast growth in biomass flows by two years (with the exception of specific known flows to Drax).

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[458] Note that the delivery plan passenger train miles forecast is slightly higher than the SBP forecast. This means that the baseline has increased slightly since our draft determination, despite some downward adjustment for asymmetric risk.

[459] The DfT Network Modelling Framework is a strategic modelling tool which can provide, among other things, high level demand and revenue forecasts.

[460] *Long Term Planning Process: Freight Market Study - draft for consultation*, Network Rail, April 2013, available at http://www.networkrail.co.uk/improvements/planning-policies-and-plans/long-term-planning-process/market-studies/freight/. This is part of the rail industry's Long Term Planning Process and sets out how freight demand is expected to change over the next 30 years.

Table 19.1: CP5 final national baseline growth rates

Total growth over CP5[461]	Final CP5 baseline	Draft determination CP5 projection	CP4 baseline
Passenger train miles	6.6%	6.4%	4.1%
Farebox	17.7% (real)	19.6% (real)	25.8% (real)
Freight train miles	15.7%	30.4%	12.0%
Freight 1,000 gross tonne miles	21.5%	33.5%	8.3%

19.154 We will work with Network Rail to translate national growth forecasts into annual route-level baselines ahead of the start of CP5. Network Rail will consult on route level baselines when it publishes its draft delivery plan in December 2013. Baselines must be set before the beginning of CP5 and adjustments to route-level baselines must be neutral in aggregate relative to the national growth baselines specified above. We will agree the principles for disaggregation with Network Rail in advance of its delivery plan consultation, and review the proposed route-level baselines before these are put in place for the beginning of CP5.

Incentive rates

19.155 A majority of respondents to our December 2012 consultation supported the retention of the current value-based approach to calculating the incentive rates. A description of our approach to calculating the volume incentive payment rates is provided in our December 2012 consultation document. In summary, the incentive rates are intended to reflect a share of the value of increases in volume (rather than, for example, being based on the cost associated with accommodating that additional volume). For passenger traffic, this means that incentives rates are based on an estimate of the additional social and private (i.e. farebox) value of increased passenger volumes. For freight traffic, the incentive rates are intended to reflect the social value (for example reduced congestion, accidents, pollution etc.) of increased freight traffic as a result of the shift from road to rail. The small differences between the CP5 draft determination rates and the final determination rates are due to small adjustments, for example to reflect the availability of updated underlying assumptions relative to those which we used when we originally calculated the rates in December 2012.

19.156 A majority of respondents commented that regardless of the size of the payment, the transmission mechanism is the key factor in ensuring that the incentive is effective. Some respondents suggested that there would be merit in moving to a cost based approach for the volume incentive, but recognised that it seems unlikely that this could be implemented in a robust way at this time. Network Rail expressed support for

[461] Note that this table expresses the baselines as total growth over CP5, rather than the annual average specified in the draft determination. We have re-expressed the draft determination and CP4 projections in this format. These numbers may not reconcile due to rounding.

strengthening the incentive by increasing the incentive rates. Freightliner commented that in the case of freight, in addition to the size of the incentive rates, setting a realistic baseline is also a key factor in ensuring the incentive is effective. We did not receive any further material comments on this issue in response to the draft determination.

19.157 We will continue with the existing method of calculating incentive rates and adopt the updated version of those rates included in our December 2012 consultation and shown in Table 19.2[462]. Most respondents are supportive of this approach and there appears to be little interest in the 'higher rate alternative' which we also consulted on in December 2012, at least until there is full confidence in the effectiveness of the transmission mechanism. The higher rate alternative would also be of concern to funders since it could raise affordability issues.

Table 19.2: Incentive rates

	Final CP5 value (2012-13 prices)[463]	Refreshed CP5 value as per the draft determination (2012-13 prices)	CP4 value (2006-07 prices)	CP4 value (2012-13 prices)
Per additional train mile	139p	141p	69p	84p
% of additional farebox revenue	2.5%	2.5%	1.5%	1.5%
Per additional freight train mile	281p	284p	111p	136p
Per additional freight 1,000 gross tonne mile	239p	242p	100p	122p

Payment scenarios, caps and payment rates

19.158 Figure 19.2 below shows how a ceiling and floor set at +/- £300m will mitigate the risk around the magnitude of payments should traffic growth be significantly above or below the growth baselines set out above. The scenarios reflect different assumptions on passenger and freight demand and on the timing of the delivery of major capacity improving enhancements. We have not associated specific probabilities with these illustrative scenarios, although we consider the more extreme scenarios to be relatively unlikely to occur.

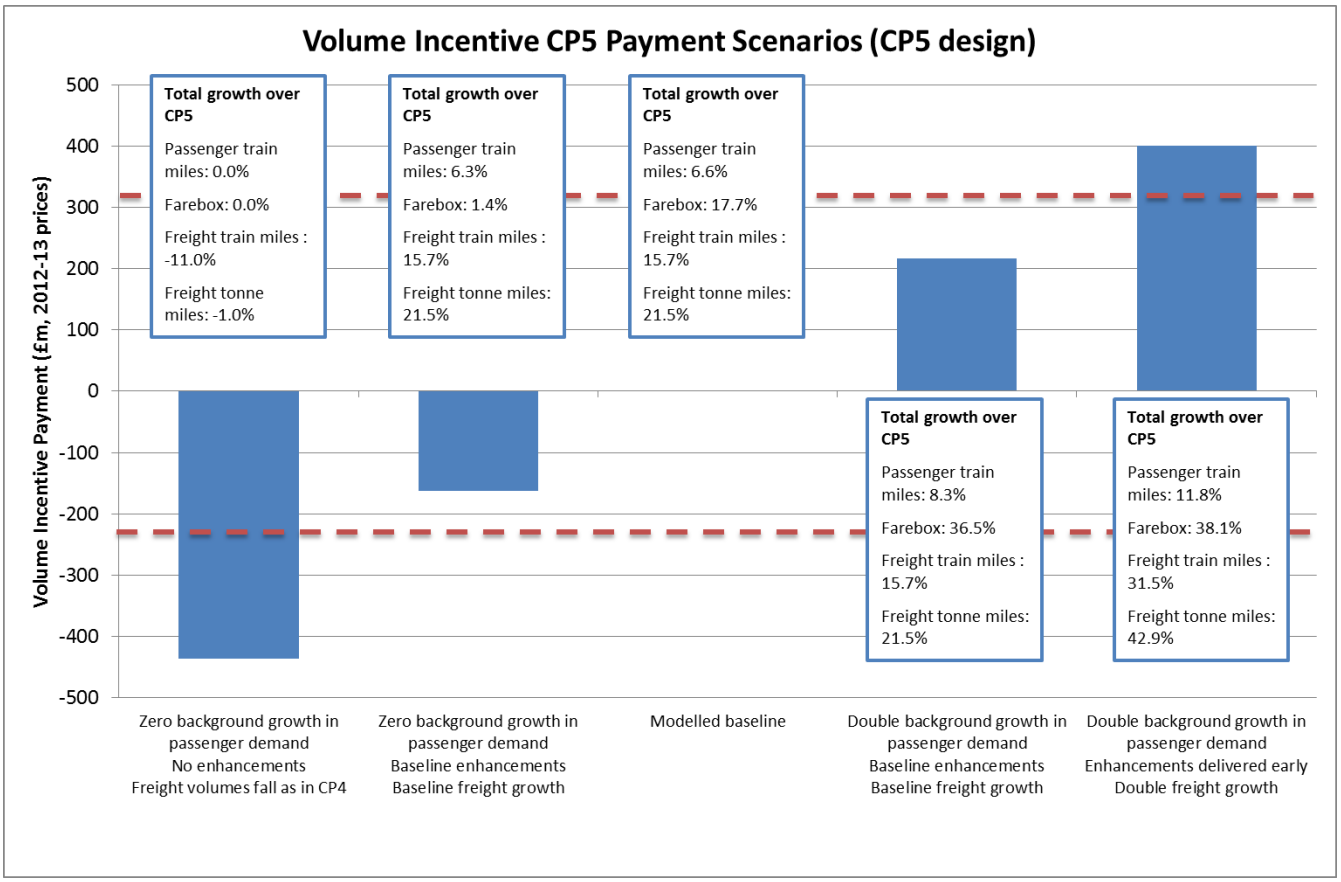
19.159 The level of the floor and ceiling is intended to balance the risk of the incentive becoming inactive (achieved by setting the levels of the floor and ceilings so that they

[462] These rates have been updated for RPI inflation compared with those published in our December 2012 consultation.

[463] Please note that differences between the CP5 draft determination rates and the final determination rates are due to small adjustments to reflect, for example, some of the underlying assumptions in WebTAG, used to calculate the rates, having been updated since we originally calculated the rates in December 2012.

are relatively unlikely to becoming binding), with affordability concerns for both governments and Network Rail. While the modelled scenarios have informed our setting of a ceiling and floor of +/- £300m, the ceiling and floor put in place must also be considered in light of other aspects of the PR13 settlement. For example, our decision on the cap on the level of the variable usage charge means that if Network Rail was to deliver volumes below the baseline, since the variable usage charge is to be set below the level of cost directly incurred, it would effectively over-recover, offsetting some of the potential downside experienced through the volume incentive.

Figure 19.2: Volume incentive CP5 Payment Scenarios



20. Possessions and performance

Key messages in this chapter

- The Schedule 4 ('possessions') regime compensates train operators for the financial impact of planned possessions – where operators cannot access the network because Network Rail is carrying out engineering work. The Schedule 8 ('performance') regime compensates train operators for unplanned service disruption caused by Network Rail and other train operators.
- **Schedules 4 and 8 protect train operators from risk that they cannot control.** In the case of franchised passenger train operators, this helps reduce the risk premiums factored into franchise bids, **which ultimately feeds through to taxpayers through lower franchise costs.**
- **We are retaining Schedules 4 and 8 so they mainly operate as 'liquidated sums' regimes**, where compensation (and bonus) payments are largely determined by formula, set in advance. This reduces transaction costs in the industry, because the alternative would be to negotiate the financial impact of each incident after the event.
- **We have updated Schedule 4 and 8 payment rates so they reflect the best available evidence** on the impact of possessions and poor performance on revenue and costs. Passenger Schedule 8 payment rates will increase by an average of 68%. Schedule 4 revenue loss compensation payment rates will also increase but to a lesser extent. The increases are due to large increases in passenger numbers, above inflation increases in fares on some services and updated evidence showing that passenger demand responds more to service disruption than previously thought. The scale of the increase in large part reflects the fact that the Network Rail payment rates have not been updated (other than for inflation) since 2005. The increase in Schedule 4 payment rates will result in an increase in Network Rail's funding requirement, most of which will be reflected in an increase in the Schedule 4 access charge supplement paid by train operators. The increase in Schedule 8 payment rates will not result in an increase in Network Rail's funding requirement, since Schedule 8 is financially neutral when Network Rail and train operators perform in line with our expectations.
- **The increase in Schedule 4 and 8 payment rates will increase the financial incentive on Network Rail to minimise planned and unplanned service disruption to passengers** and also ensure train operators are adequately compensated. This is because Network Rail will have to pay a higher amount of compensation for each minute of lateness it causes.

Key messages in this chapter (continued)

- **We have updated performance benchmarks in Schedule 8**, including ensuring Network Rail's performance benchmarks reflect the output targets we set for CP5.
- We have improved other aspects of Schedules 4 and 8 to make sure they function effectively, do not result in perverse incentives, and work overall in the best interests of passengers, freight customers and taxpayers. This includes **incentivising Network Rail to reduce instances of it booking unnecessary possessions early and then cancelling them at short notice**; and reducing compensation rates to train operators to cover replacement bus costs so it is in line with actual bus costs.
- Schedule 8 is not designed to compensate passengers for poor performance. Instead this type of compensation is available to passengers through passenger compensation schemes. We have been exploring passenger awareness of current refund rights and compensation arrangements, and the extent to which passengers exercise their rights, and any barriers to them doing so. We will publish a report of our findings and recommendations in November 2013.
- Information on net Schedule 4 and 8 payments between Network Rail and train operators by route is contained in Network Rail's published regulatory financial statements. In order to make this information more accessible, we will be putting it onto our data portal in November 2013.
- Also, to enable passengers to get a better understanding of disruption due to engineering possessions, including detailed information on the extent of use of buses instead of trains during engineering works, Network Rail will be publishing its four-weekly Possession Indicator Reports.

Introduction

20.1 Passenger train operators are concerned about the performance of their services because of the adverse impact on their customers of poor reliability, which over time leads to lower passenger numbers and revenues. Freight operators are concerned about the performance of their services because of the costs incurred, e.g. additional crewing costs, and because of the impact on revenue through the loss of customers.

20.2 The possessions and performance regimes (Schedules 4 and 8) in track access contracts perform the following functions:

(a) compensate train operators for the financial impact of planned and unplanned service disruption attributable to Network Rail and other train operators;

(b) help align incentives between Network Rail and train operators, so the impact of service disruption on revenue and/ or costs is incurred by the organisation who cause the disruption, rather than the train operator that faces the disruption; and

(c) provide appropriate signals so as to drive the decision-making in relation to performance and possession management, for example, in relation to where to make investments, or to give an indication to Network Rail on whether it is better to have a short possession but with higher engineering costs or take a longer possession.

20.3 In their role as compensation mechanisms, Schedules 4 and 8 ensure that train operators are less exposed to risk that they cannot control than they would otherwise be. In the case of franchised passenger train operators, this helps reduce the risk premiums factored into franchise bids. This ultimately feeds through to taxpayers through lower franchise costs.

20.4 This has been demonstrated by research we commissioned from Steer Davies Gleave (SDG), which estimated that setting Schedule 4 and 8 rates at 25% below full compensation would significantly increase the risk premium factored into franchise bids. SDG estimated that this could result in a £30m loss in franchise value over a control period (based on central estimates subject to a high degree of uncertainty)[464]. If Schedules 4 and 8 did not exist at all, the adverse impact on the risk premium would be even more considerable.

20.5 Exposing Network Rail to the impact of its possessions management and performance on long term fare revenue means it is more likely to be incentivised to act in the interests of passengers, for example, by investing in improving the performance of services that more passengers use.

20.6 Schedules 4 and 8 are liquidated sums regimes, which means that compensation payment rates are determined in advance using a set formula, rather than negotiated individually once an event has occurred. This is a common feature of contracts and is a way of minimising legal and administrative costs.

20.7 Schedules 4 and 8 are designed to be financially neutral if possession activity and the performance of Network Rail and train operators are at expected levels during CP5.

20.8 As with any formulaic compensation regime, it is not possible to ensure the amount paid under Schedules 4 and 8 in every single instance precisely compensates for the impact of service disruption. However, it is important that on average it does and that there are no systematic biases, for example, always over-compensating a particular train operator for delays to peak services.

20.9 Information on net Schedule 4 and 8 payments between Network Rail and train operators by route is contained in Network Rail's published regulatory financial

[464] It should be noted that this analysis was based in CP4 payment rates, and the impact would be higher if based on CP5 payment rates.

statements[465]. In order to make this information more accessible, we will be putting it onto our data portal on 28 November 2013[466].

Current compensation arrangements

Schedule 8

20.10 Schedule 8 provides train operators with compensation for unplanned service disruption caused by Network Rail and other train operators. Schedule 8 is one of a range of factors that encourage Network Rail and train operators to continuously improve performance.

20.11 Track access contracts for franchised passenger, open access passenger, freight and charter operators all contain a Schedule 8.

20.12 Our view is that, overall, Schedule 8 works well. For CP5 we will therefore not be making any major alterations to the structure of the regime, but we will be making changes to some of the metrics to ensure they remain appropriate and that Schedule 8 continues to work effectively in CP5.

Schedule 8 for franchised and open access passenger operators

20.13 The regimes for franchised and open access passenger operators are very similar. They are both benchmarked regimes, where payments are made when Network Rail's or a train operator's performance diverges from a benchmark[467] number of minutes of lateness.

20.14 There are separate benchmarks and payment rates for Network Rail and train operators. These are unique to each train operator's service groups (collections of train services).

20.15 The Network Rail payment rate sets the basis for compensation payments from Network Rail to train operators when Network Rail's performance is worse than benchmark, and bonus payments to Network Rail from train operators when Network Rail's performance is better than benchmark. Network Rail payment rates are set at a level to reflect the impact over time of performance on fare revenue. Schedule 8 is not designed to compensate passengers for poor performance. Instead this type of compensation is available to passengers through passenger compensation schemes such as delay repay[468], which are required under franchise agreements. More information on this is contained in the text box below.

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[465] http://www.networkrail.co.uk/browsedirectory.aspx?dir=%5Cregulatory%20documents%5Cregulatory%20compliance%20and%20reporting%5Cregulatory%20accounts&root

[466] http://dataportal.orr.gov.uk/

[467] Benchmarks are known as 'performance points' in track access contracts.

[468] Under the Delay Repay scheme, all passengers including season ticket holders are entitled to claim compensation for each delay of more than 30 minutes which they experience, whatever the cause.

Difference between Schedule 8 payments & passenger compensation

Schedule 8 compensation and passenger compensation serve the different purposes:

- Schedule 8 compensation is an intra-industry arrangement designed to compensate train operators for the impact of poor performance on their long term revenue. This is an important protection to operators and it also helps reduce the risk premium factored into franchise bids, and as a result reduces the cost of franchising to the taxpayer; and
- passenger compensation arrangements are designed to provide redress for passengers when they are delayed. Franchise agreements require franchised train operators to compensate passengers for delays to their journeys. As in other sectors, consumers of rail passenger services also enjoy rights under general contract law on the sale of goods and services.

While they both reflect performance on the network, Schedule 8 and passenger compensation arrangements therefore perform very different roles. There is no direct linkage between the two, with Schedule 8 relating to the compensation and incentive arrangements between train companies and Network Rail, and the passenger facing arrangements being a means of compensating passengers for delays to their journeys.

Schedule 8 payments are based on the extent average minutes of lateness deviates from a pre-determined benchmark, and can involve bonuses or compensation, depending on how well Network Rail and train operators perform. Payments are determined by formula, based on the average number of minutes trains are late, whereas passenger compensation is paid if the train travelled on is subject to a significant delay and a claim is made.

In recent years Schedule 8 compensation has been typically higher than passenger compensation. This reflects the fact that Network Rail has not been meeting its performance targets. If, during CP5:

- Network Rail and train operators perform in line with our expectations, net Schedule 8 payments will be zero, whereas it is likely there will still be passenger compensation;
- Network Rail's performance exceeds expectations, train operators will have to pay bonuses to Network Rail but also pay passenger compensation as a result of significant delays caused by Network Rail, albeit a lower amount than if Network Rail's performance was below expectations.

Passengers are entitled to claim compensation of 50% of the single fare for delays of 30 to 59 minutes, 100% of the single fare for delays of more than 60 minutes and for delays of more than 2 hours 100% of the return fare. The entitlement for season ticket holders is calculated using the proportional daily cost of the season ticket.

Difference between Schedule 8 payments & passenger compensation

Track access contracts do not and cannot govern what passengers receive for poor performance. It is the role of franchising authorities to ensure that franchises are regulated in such a way that franchised train operators act in the interests of their passengers. This includes considering as part of the franchising process, the level and type of compensation passengers receive for delays to their journeys.

However, we are also concerned that passenger inconvenience is recognised and compensated for. Train operators have an obligation to comply with consumer law and we have a role in enforcing it. In this context, we have been exploring passenger awareness of current refund rights and compensation arrangements, and the extent to which passengers exercise their rights, and any barriers to them doing so. We will publish a report of our findings and recommendations in November 2013.

20.16 The train operator payment rate represents the level of compensation a train operator is liable to pay to Network Rail in relation to disruption caused to third party train operators as a result of the train operator's performance being worse than the train operator benchmark. Under what is commonly referred to as the 'star model', all liabilities between operators flow through Network Rail. Network Rail pays a bonus to a train operator (payable at the same rate as compensation) if the train operator's performance is better than benchmark. Train operator payment rates are based on an estimate of the extent to which the performance of a train operator impacts on the services of other train operators, along with the impact of performance on revenue over time for those services disrupted.

20.17 Poor performance is measured in terms of lateness experienced by passengers. Specifically it is measured as the average minutes of lateness (AML) per day between the timetabled time at particular stations, known as monitoring points, and the actual time a train arrives at those particular points. Lateness recorded at monitoring points within a service group is weighted to reflect how many passengers are travelling to the monitoring points[469].

20.18 The share of responsibility for lateness is attributed between Network Rail and train operators using the TRUST delay attribution system. This identifies the causes of delays to services, i.e. the time lost between points where delay is reported[470].

20.19 For the purposes of Schedule 8, cancellations are treated as a specific number of minutes of 'deemed' lateness. This varies between service groups and reflects the

[469] And stations preceding them that are not monitoring points.

[470] The primary purpose of the TRUST system is to help ensure the industry is able to fix the underlying problems that cause delays so performance can improve over time. Rather than collect separate data for Schedule 8 to attribute lateness, Schedule 8 relies on data already collected for the TRUST system.

frequency of services, i.e. how long passengers will have to wait for the next train, and the fact that subsequent trains become more crowded and less pleasant to travel on when cancellations occur.

20.20 Benchmarks and train operator payment rates were last updated (other than for inflation) as part of PR08. Network Rail payment rates were last updated in our 2005 review of Schedule 8[471].

20.21 Network Rail has made net Schedule 8 payments to train operators during CP4. This is largely due to Network Rail performing below expectations (the net payment is also affected to a lesser extent by train operator performance). In 2011-12, Network Rail made a net Schedule 8 payment of £80m (2011-12 prices).

20.22 Currently train operators may claim additional compensation from Network Rail for Sustained Poor Performance (SPP), if performance is worse than a defined threshold over time, provided they can demonstrate the liquidated sums element of Schedule 8 is not providing adequate compensation.

Schedule 8 for freight operators

20.23 The freight Schedule 8 performance regime was comprehensively reviewed and updated in PR08, with the creation of a standardised regime across all freight operators so as to remove any competitive advantage to particular operators, for example through having a different payment rate to other operators running a similar service. The regime was also simplified considerably.

20.24 The nature of the standardised freight Schedule 8 is that benchmarks and payment rates are common across all freight operators. We are of the view the standardised regime works well and this view is shared by the majority of stakeholders.

20.25 Freight Schedule 8 benchmarks are based on minutes of delay per 100 miles, rather than average minutes of lateness, used in Schedule 8 for passenger operators. Because they are normalised for distance operated, the freight Schedule 8 benchmarks are suitable for all sizes of operator.

20.26 Most of the freight Schedule 8 is designed to be financially neutral at benchmark performance. However, there is no benchmark for cancellations. Instead freight operators receive compensation for all cancellations caused by Network Rail or other train operators. Network Rail receives funding to cover the expected number of cancellations for the control period.

20.27 Certain elements of the freight Schedule 8 are designed to reduce the exposure of freight operators to financial risk. These are:

[471] http://www.rail-reg.gov.uk/server/show/nav.177

(a) an option available to each freight operator to pay an access charge supplement (ACS) for a cap on the amount it is required to pay in relation to a single incident; and

(b) reciprocal caps on the maximum annual Schedule 8 liability freight operators and Network Rail can face in relation to a particular track access contract. These are usually agreed by Network Rail and freight operators, and approved by us.

Schedule 8 for charter operators

20.28 In CP4, there is a different Schedule 8 arrangement for charter operators to reflect the fact that charter services (generally trains used for leisure purposes) do not carry passengers at ordinary fares and the revenue implications of disruption are complex.

20.29 Like freight, the Schedule 8 regime for charter operators is also a standardised regime. Payment rates are common across all charter operators, and the Network Rail payment rate is the same as the Network Rail payment rate for freight operators.

20.30 There are currently no Schedule 8 benchmarks within the charter operator regime. Charter operators make compensation payments in respect of all delays they cause to other operators of three or more minutes; Network Rail compensates charter operators for all delays of three or more minutes caused by Network Rail or other operators.

20.31 In CP4, incident caps limit the amount of compensation per incident paid by charter operators to Network Rail under the Schedule 8 regime to £5,524 (2012-13 prices). The same incident cap applies to compensation paid by Network Rail to charter operators, although this has rarely been employed in practice. Charter operators do not currently pay an ACS in exchange for the benefit of incident caps.

20.32 For CP5, we will be making changes to the Schedule 8 for charter operators to bring it in line with the freight Schedule 8. More detail is contained in paragraphs 20.250 to 20.273 below.

Schedule 4 possessions regime

20.33 The Schedule 4 possessions regime is designed to compensate train operators for the financial impact of planned possessions where operators are given restricted access to the network, principally as a result of Network Rail undertaking engineering work.

20.34 The possession regimes for passenger and freight operators are different. Both regimes were significantly overhauled as part of PR08. The key features of each are explained below. There is no Schedule 4 regime for charter operators. This is because engineering possession plans are typically agreed before the majority of charter services are planned.

Schedule 4 for franchised passenger operators

20.35 This compensates franchised passenger operators for service disruption due to planned possessions. In return for this compensation passenger operators pay a pre-determined ACS to cover the estimated efficient cost to Network Rail of the Schedule 4 regime. This reflects the fact that Network Rail is expected to require a certain number of possessions and can be seen as analogous to the performance benchmark in Schedule 8.

20.36 Compensation payments are paid by Network Rail to franchised passenger operators on a formulaic basis. Schedule 4 payments are to compensate for a combination of the following:

(a) the effect of possessions on fare revenue;

(b) additional costs incurred when running replacement buses; and

(c) costs or cost savings from a change in train mileage.

20.37 We are not making major changes to the regime as part of this periodic review, but there are a number of aspects we have reviewed in order to improve the incentives for Network Rail to plan possessions effectively and efficiently and to reduce the impact of possession disruption on passengers. The main areas where we are making changes are in relation to replacement bus cost compensation and the level of compensation payable to operators where Network Rail makes late cancellations of or amendments to Type 1 possessions[472].

The effect of possessions on fare revenue

20.38 Network Rail compensates franchised passenger operators for revenue losses as a result of passengers being deterred from travelling due to possessions disruption. Compensation is based on Schedule 8 payment rates. Network Rail is entitled to a reduction in the amount of compensation it pays, depending on how early it notifies passenger operators about possessions. The discount reflects the reduced impact on passenger operators' revenues where passengers receive early notice of service disruption[473]. The amount of discount is determined by notification discount factors which vary according to the amount of notification given to passenger operators, and the type of service that is being disrupted.

Additional costs incurred when running replacement buses

20.39 Franchised passenger operators can claim compensation for the costs of running replacement bus services when train services are cancelled due to disruption caused

[472] Type 1 possessions are possessions generally less than 60 hours in duration and which attract formulaic Schedule 4 revenue loss and costs compensation. The majority of possessions are of this type.

[473] While with earlier notice of possessions passengers may be more likely to make alternative travel arrangements, they are less likely to be put off from travelling by train in the future if amended timetables do not take them by surprise.

by possessions. Compensation is determined by formula; the amount of compensation received is the product of estimated bus miles (EBMs), which is the distance in miles between transfer points (i.e. between stations), and the EBM payment rate which is paid in £ per EBM operated. EBM rates are paid at two rates, one for London & South East services and one for services operating in the rest of the country.

20.40 To enable passengers to get a better understanding of the service they are getting, including detailed information on the extent of use of buses instead of trains during engineering works, Network Rail will publish its four-weekly Possession Indicator Reports. This is also discussed in chapter 3.

Costs or cost savings resulting from a change in train mileage

20.41 Franchised passenger operators may make cost savings or incur additional costs as a result of changes in train mileage operated due to possessions, depending on the actual pattern of cancellations or diversions. The costs or savings are determined by a payment rate per train mile, as set out in track access contracts.

Schedule 4 for open access passenger operators

20.42 Open access passenger operators only receive full formulaic Schedule 4 compensation, consistent with that available to franchised passenger operators, if they opt to pay an ACS. Currently no open access passenger operators do this, and therefore they only receive compensation for very long-lasting possessions[474] or Sustained Planned Disruption (SPD).

Schedule 4 for freight operators

20.43 The Schedule 4 freight regime is structured so that there are three levels of compensation depending on the degree of disruption (with the possibility of compensation for actual losses for severe disruption) and higher payments made for late notice possessions. Freight operators do not pay an ACS to cover the expected costs of Schedule 4 compensation, and as a result only receive compensation for significant planned disruption notified before T-12[475].

Our draft determination

20.44 The main changes to Schedules 4 and 8 that we set out in our draft determination are summarised below.

20.45 In reaching these proposed decisions we:

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[474] These possessions are classified as Type 2 and Type 3 possessions, defined as: type 2 possessions: single possession greater than 60 hours, but equal to or less than 120 hours, (excluding public holidays) type 3 possessions: single possession greater than 120 hours (including public holidays).

[475] T-12 refers to twelve weeks before a new timetable comes into operation.

(a) consulted on Schedules 4 and 8 at a high level in our May 2011 consultation document and our December 2011 consultation on incentives;

(b) consulted specifically on Schedules 4 and 8 in our November 2012 consultation on the possession and performance regimes;

(c) set up industry groups in relation to the passenger and freight Schedules 4 and 8, which have provided technical advice and helped inform policy decisions; and

(d) commissioned external work to help inform our decisions and determine payment rates and benchmarks.

20.46 Where work was incomplete at the time of our draft determination, we outlined the progress we had made so far and the remaining work left to be completed.

Schedule 8 for franchised and open access passenger operators

20.47 The main changes announced in our draft determination in relation to Schedule 8 for franchised and open access passenger operators were as follows:

20.48 We said we would update Schedule 8 payment rates so they reflect the best available evidence of the impact of poor performance on long term revenue. At the time of publication:

(a) our consultants Halcrow had calculated a draft set of Schedule 8 Network Rail payment rates based on evidence in a draft of the update to the Passenger Demand Forecasting Handbook (PDFH 5.1), which was subsequently published in July 2013; and

(b) on 15 May 2013 Network Rail had issued a consultation letter outlining concerns it had regarding the established methodology for converting the evidence in the PDFH into Schedule 8 payment rates for commuter journeys between London and the South East, and proposed an alternative solution[476]. At the same time we invited train operators and Network Rail to agree alternative Network Rail payment rates in instances where they did not think the ones calculated using the standard approach were a realistic reflection of the impact of performance on fare revenue.

We set out a high level timetable of the process for finalising Schedule 8 payment rate calculations.

20.49 We said we would update benchmarks in the Schedule 8 regime, including ensuring Network Rail's benchmarks reflect the output targets we set for CP5. At the time of publication, our contractors Halcrow had shared train operator benchmarks and base Network Rail benchmarks with Network Rail and train operators. We set out a

[476] Network Rail's consultation, responses and its conclusion are published at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

timetable of the process for Network Rail to calculate a final set of Network Rail benchmarks and consult on them, and said we would finalise Schedule 8 benchmarks as part of our final determination.

20.50 We also said that we would do the following:

(a) keep the threshold for train operators to be eligible to claim additional Schedule 8 compensation for sustained poor performance at 10% worse than benchmark performance over 12 months; and

(b) remove the passenger charter element of Schedule 8.

Schedule 8 for freight operators

20.51 We said we would update:

(a) payment rates so they reflect the best available evidence. This included an increase in the freight operator payment rate to reflect the fact that the passenger Schedule 8 Network Rail payment rates had increased. We did not propose a change in the Network Rail payment rate due to there being no clear evidence to suggest an alternative payment rate;

(b) benchmarks to reflect our expectation of performance during CP5. This included setting the freight operator benchmark to reflect performance by freight operators during CP4, and setting the Network Rail benchmark to reflect our end of CP4 delay minute target. We also said we would adjust the benchmark to address an inconsistency between the Network Rail benchmark and our delay minute targets in CP4; and

(c) the ACSs required for incident caps to reflect the change in payment rates.

20.52 We said we would set the bonus payment rate at 100% of the compensation payment rate, as opposed to 50%.

Schedule 8 for charter operators

20.53 In our draft determination we set out that we would introduce benchmarks into the Schedule 8 for charter operators to ensure financial neutrality of the Schedule 8 regime, and bring it in line with other types of operator. We stated that the introduction of benchmarks sits alongside our decision to introduce the capacity charge for charter operators.

20.54 We also set out that we would increase the charter operator payment rate to reflect the increase in Network Rail payment rates under the Schedule 8 for passenger operators. We also said that we would not remove the £5,524 cap on the amount of Schedule 8 payment, or require either party to pay an ACS to receive this cap.

Schedule 4 for franchised and open access passenger operators

20.55 In our draft determination we said we would adjust rail replacement bus costs compensation rates to ensure that over CP5 the amount of compensation paid better

reflects the costs faced by train operating companies. We said we would reduce compensation rates by 7.9% for London & South East services and 8.9% for services operating in the rest of the country.

20.56 We also set out a revised range of notification discount factors reflecting changes in late time multipliers for each service group, compared with CP4.

20.57 We introduced additional protection for train operating companies for costs incurred where type 1 possessions are cancelled at late notice and train services fully re-instated. Previously companies could not claim any compensation under these circumstances; the new arrangements will allow them to claim where the costs incurred are £5,000 or more.

20.58 We made minor changes to the contractual provisions in respect of sustained planned disruption to ensure that they are consistent with the purpose of the SPD mechanism and that the provisions are clear to all parties.

20.59 For our draft determination Network Rail supplied us with its ACS estimate for CP5, of which we undertook detailed scrutiny. Our engineers assessed Network Rail's volume forecasts and pre-efficient expenditure to ensure that these reflected the levels of planned maintenance and renewals in Network Rail's SBP submission. We found these to be broadly consistent with Network Rail's SBP submission but we made minor adjustments to reflect some inconsistencies. We also appointed our Reporters to carry out a detail audit of Network Rail's ACS calculation.

20.60 Network Rail's ACS estimate reflected draft changes in Schedule 8 payment rates, changes to the level of notification discount factors due to revised late time multipliers and the reduction in bus cost compensation rates. Based on these, our draft determination said Network Rail would need funding of £1.05bn over CP5 to fund Schedule 4 costs relating to maintenance and renewals.

Schedule 4 for freight operators

20.61 We increased the level of funding for the freight Schedule 4 regime from £8.2m per annum to an average of £12.3m per annum. This was to reflect a forecast increase in the level of disruption faced by freight operators. Without this increase freight Schedule 4 compensation for CP5, rates would have reduced by approximately 30%.

Work since our draft determination

20.62 There are several elements of Schedules 4 and 8 for which there has been further work done since we published our draft determination. This includes the following:

Schedule 8 for passenger operators

20.63 On 16 July 2013 we wrote a letter to stakeholders setting out our technical decision on our standard approach for calculating Schedule 8 Network Rail payment rates[477]. This was in response to Network Rail's May 2013 consultation letter on Schedule 8 Network Rail payment rates in respect of London and South East commuter journeys. We said that we would make our final decision on the Network Rail payment rates together with our final decision on the capacity charge and volume incentive.

20.64 We also received two proposals for alternative Network Rail payment rates, one from Network Rail and First Capital Connect and the other from Network Rail and Chiltern. We accepted both proposals.

20.65 On 16 August 2013, we e-mailed stakeholders outlining the principles Network Rail should follow when calculating its proposed set of Network Rail benchmarks for CP5. On 23 August 2013, Network Rail consulted with train operators individually on the Schedule 8 Network Rail benchmarks for each year of CP5, which it had calculated according to these principles.

20.66 In order to calculate these benchmarks, Network Rail produced a set of performance trajectories for each train operator, and a model to convert PPM and CaSL into average minutes of lateness. Network Rail commissioned Steer Davies Gleave (SDG) to review its model for converting PPM and CaSL into AML[478].

Schedule 8 for freight operators

20.67 We have done further work to update:

(a) the Network Rail benchmark so it uses data from 2010-11 and 2011-12 and more accurate data supplied by Network Rail on delays to freight operators from third parties;

(b) the freight operator payment rate to reflect our final set of Schedule 8 Network Rail payment rates for passenger operators; and

(c) the list of incident caps and associated access charge supplements to reflect the update to the freight operator payment rate.

Schedule 8 for charter operators

20.68 As a follow-up to discussions at two stakeholder meetings on Schedule 8 and charges, on 23 August 2013 we published our draft conclusions on the structure of charges and Schedule 8 performance regime for charter operators. The main changes to Schedule 8 in this letter compared to our draft determination were that:

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[477] http://www.rail-reg.gov.uk/pr13/PDF/london-commuter-flows-decision-2013-07-16.pdf

[478] http://www.networkrail.co.uk/PR13-closed-consultations/SDG-final-report–review-of-income-and-schedule-8-benchmark-models.pdf

(a) charter operators and Network Rail will be given reciprocal annual caps on Schedule 8 payments; and

(b) charter operators will be required to pay an ACS to receive incident caps, with charter operators being able to choose from a menu of incident caps and associated ACSs.

20.69 These two changes bring the Schedule 8 for charter operators further in line with the freight Schedule 8, and mean that charter operators are not subsidised through Schedule 8 and will be protected against the maximum Schedule 8 liability they can be exposed to each year.

20.70 We have also updated the charter operator payment rate to reflect our final set of Schedule 8 Network Rail payment rates for passenger operators.

20.71 On the basis of CP4 delays and CP5 payment rates, we estimate that the combined impact of the changes we are making to Schedule 8 and charges for charter operators will result in charter operators being financially better off than under the current arrangements.

Schedule 4 for passenger operators

20.72 Since our draft determination we have updated our ACS calculation to take account of changes to a number of inputs into the calculation. These include an adjustment to reflect our conclusion on Schedule 8 Network Rail payment rates and changes to late time multiplier values, which reflect the value passengers place on scheduled verses unscheduled delays to journey time.

20.73 Network Rail improved the accuracy of the way in which it had apportioned the ACS between train operators, by using three years data. We have reviewed the updated calculation and have used it to split our determined ACS between train operators.

Schedule 4 for freight operators

20.74 We have not done any further work on this since the draft determination, other than to incorporate funding to cover the cost of payments in CP5 in respect of service variations[479]. Network Rail had not provided us with this information early enough to incorporate into our draft determination calculations.

[479] A service variation is when a service is re-scheduled at very short notice at the request of Network Rail.

Key issues raised in consultation responses

Schedule 8 for franchised and open access passenger operators

Network Rail payment rates

20.75 Network Rail has raised several concerns regarding the scale of the increase in the Schedule 8 Network Rail payment rate, and specifically to the use of the evidence in PDFH 5.1 on how passenger demand responds to poor performance. It said that:

(a) it considers the proposed Schedule 8 Network Rail payment rates in respect of London and South East commuter journeys to be contrary to the empirical evidence;

(b) for other journeys, it does not consider the empirical evidence is sufficiently conclusive to form the basis for such large financial flows;

(c) a key test for increasing rates should be that Schedule 8 should not lead to 'catastrophic' situations in CP5, whereby train operators are unable to support payments to Network Rail for delivering outperformance and are therefore exposed to financial difficulties;

(d) there is a reputational risk to the industry if the Schedule 8 payment rates are found to be wrong;

(e) if Network Rail payment rates are too high, train operators would be financially better off from worse than benchmark performance by Network Rail, which could result in highly distortive behaviours, and that this is an asymmetric risk in the sense that this sort of distortion would only arise if payment rates are too high; and

(f) the structure of the track access agreement is such that there are fewer risks to the industry and the credibility of the regulatory regime if rates are set 'too low' rather than 'too high'. In particular if the rates are set too low, train operators can claim additional compensation under the sustained poor performance (SPP) provisions, whereas if payment rates are set too high, no such contractual safety valve exists.

20.76 Network Rail also said that it believes Schedule 8 payment rates should reflect the full effect of performance on revenue, and that it is important that rates should be recalibrated at each control period to make sure they keep pace with changes in fares, demand changes and other behavioural impacts on passengers' tolerance to journey delays.

20.77 Network Rail said that if industry parties believe that the higher Schedule 8 payment rates are the appropriate way forward for CP5, information about Schedule 8 should be made significantly more transparent than is current the case.

20.78 DfT and Transport Scotland expressed concern about whether the Schedule 8 payment rates will be set at the right level and stressed the importance of setting them accurately.

20.79 The majority of train operators supported the use of the evidence in PDFH 5.1 in the setting of Schedule 8 payment rates.

20.80 RDG wrote to us on 28 August 2013[480] in the context of its work considering the interaction between the capacity charge and Schedule 8. In its letter, it set out some common principles on Schedule 8. We think it is very significant and useful to have a common industry understanding articulated in these terms. The overarching principles were:

(a) the Schedule 8 rates should be recalibrated such that they reflect, as accurately as possible, the revenue impacts of disruption for train operators;

(b) for passenger operators the Schedule 4 payment rates should continue to be set on a consistent basis with the Schedule 8 rates; and

(c) Schedule 8 benchmarks should be recalibrated so that they reflect determined levels of performance in CP5.

20.81 We agree with the principles that RDG set out in its letter, including the principle also stated by Network Rail in its consultation response, that Schedule 8 payment rates should reflect the full effect of performance on revenue, and have calculated them so they are based on the best evidence available. We do not agree with Network Rail that the Schedule 8 payment rates we have set for CP5 are too high:

(a) as outlined in our July 2013 letter, we have made a 10% downward adjustment to Network Rail payment rates in respect of London and South East commuter journeys to reflect some of the issues Network Rail raised in relation to crowding dampening the impact of performance on demand and the longer time period between poor performance occurring and it having its full effect on revenue. This adjustment also reflects the fact that in some instances passengers may switch between different services run by the same operator. Our judgement is that use of the evidence in the recently updated PDFH 5.1, combined with this adjustment provides the best estimate of the impact of performance on long term revenue for London and South East commuter journeys that could be calculated within the time available. It will be worth investigating whether for CP6 a more detailed approach should be taken to determine the size of the adjustment for these factors;

(b) we do not agree with Network Rail that the empirical evidence in PDFH 5.1 is insufficiently conclusive for us to use, since it is based on a much more

[480] See http://www.raildeliverygroup.com/assets/files/2013/09/LtrtoCRoss280813.pdf.

comprehensive and thorough review of evidence than in previous editions of the PDFH, which Schedule 8 payment rates have been based on;

(c) Network Rail has helpfully provided us with estimates of the impact of the net Schedule 8 payments that would be made if Network Rail missed or exceeded its PPM targets. This includes a comparison of the impact if the Network Rail payment rates are based on our technical decision in our July 2013 letter, with the impact if the Network Rail payment rates are based on the evidence from previous editions of PDFH. We compared these estimates with total train operator revenue and do not consider that the increase in payment rates results in train operators facing undue cash-flow risk. This is reflected by the fact that most consultation responses from train operators supported us basing the payment rates on the evidence from PDFH 5.1 and that there were only two joint proposals from Network Rail and train operators for alternative payment rates;

(d) we agree that there is a reputational risk to the industry if the Schedule 8 payment rates are incorrect, and are of the view that this highlights the importance of factoring in the most recent review of the evidence on how passenger demand responds to performance;

(e) we agree that if Schedule 8 payment rates were set too high, it could encourage conflict. But deliberately setting payment rates too low would result in Schedule 8 not being as effective as a compensation mechanism and not providing Network Rail with a strong enough financial incentive to perform well. Also, Schedule 8 payments only cover the impact of performance on revenue; they do not cover the impact on costs, such as staff overtime, additional fuel costs or passenger compensation. Schedule 8 payment rates are also based on revenue in 2011-12, which for many service groups will have increased by the beginning of CP5 and will continue to increase throughout CP5. These factors which are not taken into account in Schedule 8 payment rates reduce the risk of there being any instances where payment rates are set at a level that the train operator is better off financially if Network Rail performs poorly; and

(f) we do not agree that there are no contractual 'safety valves' if Network Rail payment rates are set too high. Paragraph 17 of Schedule 8 enables Network Rail or a train operator to propose a change in Schedule 8 payment rates mid control-period, including where new evidence becomes available. It is also the case that additional compensation is available for sustained poor performance (SPP) only in the event performance falls below the SPP threshold.

20.82 We have decided to set Network Rail payment rates on the basis of our technical decision outlined in our July 2013 letter. The reasons this decision are discussed in more detail in paragraphs 20.142 to 20.163.

20.83 We agree with Network Rail that information about Schedule 8 should be more transparent than is currently the case. Information on net Schedule 4 and 8 payments

between Network Rail and train operators by route is contained in Network Rail's published regulatory financial statements. In order to make this information more accessible, we will be putting it onto our data portal on 28 November 2013.

Treatment of cancellations under Schedule 8 and weighting given to lateness at different stations within service groups

20.84 One train operator suggested that Schedule 8 should be updated to better reflect the importance of not cancelling long distance services, and another said we should have systematically updated monitoring points, monitoring point weightings (MPWs) and cancellation minutes as part of PR13.

20.85 In December 2012, we gave train operators and Network Rail the opportunity to jointly propose alternative monitoring points, monitoring point weightings and cancellation minutes. We received proposals in respect of the service groups of a few train operators, which we accepted. We did not systematically review these elements of Schedule 8 as we were not of the view this would have justified the costs of doing so.

20.86 An increase in the cancellation minutes would mean a cancellation is given a greater weighting under Schedule 8, and would therefore address the concern raised by a long distance operator regarding this. If a train operator and Network Rail wish to jointly propose a change to the cancellation weighting during CP5 (most likely with a corresponding adjustment to the benchmarks), for example, in order to place a greater financial incentive on Network Rail to avoid cancellations relative to lateness, we would welcome such a proposal.

Network Rail benchmarks

20.87 A few responses, including Network Rail's response, stressed the importance of the Network Rail benchmarks reflecting the output targets we set in our final determination.

20.88 In October 2013, Network Rail provided us with a proposed set of final determination-consistent CP5 Network Rail benchmarks, along with the PPM and CaSL trajectories that sit behind them. We are reviewing these to make sure they are consistent with our performance targets and will be circulating the final set of benchmarks we have determined for CP5 by 8 November 2013.

Sustained poor performance (SPP) threshold

20.89 Network Rail said it does not agree with our decision to keep the SPP threshold at 10% worse than benchmark performance over 12 months.

20.90 Given Network Rail has continued to underperform against its performance targets, we do not consider it would be appropriate to make any changes to the SPP threshold that could weaken Network Rail's incentives to avoid poor performance over a sustained period of time. Also, given the relatively low number of claims during CP4 despite Network Rail not meeting its performance targets, we do not anticipate that

setting the threshold at 10% will result in a large number of claims if in CP5 Network Rail performs at benchmark in aggregate.

20.91 We therefore will be setting the SPP threshold at 10%, as stated in our draft determination.

Schedule 8 for freight operators

20.92 Network Rail was content with the decision in our draft determination regarding Schedule 8 for freight operators. Freight companies have expressed some concern regarding the updated benchmarks and payment rates outlined in our draft determination, and have said the following:

(a) *Freight operator benchmark.* Updating this to reflect performance during CP4 will penalise parties that have improved performance, reducing the long term investment incentives. Further improvement in performance comes at an increasing investment cost and any changes should be phased in. One freight operator explained that its CP5 fleet age profile means it will be challenging to perform at the same level during CP5;

(b) *Network Rail benchmark.* One freight operator said it is not convinced by the adjustment to the Network Rail benchmark and would like to see the data behind these adjustments. Another said that we are increasing the Network Rail benchmark as a result of poor performance during CP4;

(c) *Network Rail payment rate.* RFOA provided us with evidence, which it argued justifies an increase in the Network Rail payment rate.

20.93 Some responses from freight operators highlighted that they would receive £10.3m less each year in Schedule 8 payments than they would without the changes to benchmarks in our draft determination.

20.94 We will not be making any changes to the approach we proposed in our draft determination for calculating the freight operator and Network Rail benchmarks as a result of these responses.

20.95 Since we are basing the Network Rail benchmark on the end-of-CP4 delay minute target we set in PR08, this does not in any way reflect Network Rail's worse than benchmark performance during CP4. Our calculation of the CP5 Network Rail benchmark includes adjustments to reflect the fact that the way delay is attributed between Network Rail and freight operators differs in Schedule 8 to the way it is attributed in respect of our end-of-CP4 delay minute target. It is therefore entirely appropriate that we make these adjustments. Network Rail supplied us with the underlying data to make the adjustments and the reporters have reviewed this data to ensure its accuracy.

20.96 We continue to be of the view that the freight operator benchmark should be based on freight operator performance during the recalibration period of CP4. This is consistent with our approach to setting benchmarks for freight operators in PR08 and for other

types of train operator in PR13, and we regard it as a reasonable expectation of freight operator performance during CP5.

20.97 A key principle of Schedule 8 is that it should be financially neutral on expectation. If we set Schedule 8 benchmarks so they result in an expected income stream to freight operators, then Network Rail would require funding for this. We do not agree that this would be appropriate.

20.98 We have carefully considered the evidence RFOA provided to us in relation to the Network Rail payment rate. On the basis of this evidence we do not regard there is sufficient evidence to change the CP4 Network Rail payment rate, other than uplift for inflation. The evidence provides us with further comfort that the Network Rail payment rate we have set for CP5 provides an appropriate level of compensation.

20.99 Nevertheless we welcome the fact that RFOA has provided us with this evidence and see there being potential to work with RFOA and freight operators to build on this evidence when determining the Network Rail payment rate for CP6.

Schedule 8 for charter operators

20.100 We received two responses to our August 2013 draft conclusions letter to charter operators, from DB Schenker and from Network Rail.

20.101 Network Rail commented on our draft decision for there to be a menu of incident caps and associated ACSs. It said it thought that it would be appropriate for the minimum incident cap to be set at the same level in terms of minutes as the CP4 incident cap. It also suggested that it would be appropriate for us to include a larger number of options in the menu of incident caps than those we set out in our August 2013 draft conclusions letter, in order to ensure that the differing needs of operators would be catered for.

20.102 Network Rail also said it thought it appropriate to include a major line side fire that took place on the East Coast Main Line within the calculation of the benchmarks.

20.103 DB Schenker supported our draft proposals on Schedule 8, noting that further work would needed to finalise the benchmarks, payment rates and calculate the menu of incident cap access charge supplement rates.

20.104 In CP5 we will require Network Rail to offer an incident cap in minutes equivalent to the current £5,524 cap, in return for an access charge supplement (ACS) and also offer a menu of caps and associated ACSs.

20.105 We have included delay minutes due to the line side fire in our calculation of benchmarks.

Schedule 4 for franchised and open access passenger operators

Bus cost compensation formula

20.106 Since publishing our draft determination decision to reduce rail replacement bus cost compensation rates, the DfT has confirmed its decision to remove eligibility for Bus

Service Operators Grant (BSOG) payments for rail replacement services from 1 October 2013. BSOG is a subsidy paid to bus operators for services that meet the BSOG eligibility criteria. The Welsh Government removed BSOG eligibility for rail replacement services in Wales from 1 April 2013. Transport Scotland has retained BSOG payments for services in Scotland, but given the eligibility criteria very few services are likely to attract BSOG payments.

20.107 In response to this, a number of train operators said that we should amend the amount by which we proposed to reduce bus cost compensation rates because the loss of BSOG by bus operators will lead to increased rail replacement bus hire costs.

20.108 We agree that it is right to take account of the impact of the changes to BSOG eligibility when setting bus compensation rates and we explain how we have done so at paragraphs 20.282 to 20.284.

20.109 As part of our implementation process we made a minor change to the bus costs compensation formula within the franchised passenger track access contract. This introduced a 'no bus replacement' category to the formula to allow for circumstances where no replacement service is required for possessions where a viable alternatives exists such as London Underground or a tram service.

Additional protection for late changes to possession plans

20.110 Passenger train operators welcomed our draft determination decision to extend Schedule 4 protection to include costs incurred where Network Rail cancels Type 1 possessions at late notice and subsequently reinstates a full timetable. Respondents considered this an important additional incentive on Network Rail to improve its possession planning and reduce the amount of late cancellations.

20.111 First Capital Connect (FCC) said it was important that Network Rail is incentivised to ensure that any changes to possessions are implemented in time for train operators to inform passengers by the 'informed traveller' timetable (T-12)[481]. It argued this could be achieved more generally by the inclusion of additional notification discounts between T-22[482] and T-12, with higher amounts of compensation becoming payable the closer to T-12 any changes to possessions are made.

20.112 In response to the last point raised by FCC, whilst we are keen to increase the incentive power of Schedule 4 to encourage Network Rail to plan possessions efficiently, we are concerned about adding complexity to the current system from increased notification discount thresholds. We discussed options for making changes to the notification discount system with train operators as part of PR13 but there was no consensus amongst operators on whether to introduce more thresholds or make

[481] The 'informed traveller' timetable is the earliest timetable by which advanced tickets become available for sale, at 12 weeks before day of departure.

[482] T-22 means 22 weeks before day of departure.

significant changes to the notification discount system. We do not intend to make any further changes to the notification discount system as part of this periodic review.

20.113 Network Rail agreed with our view that timescales for completing the Engineering Access Statement are the primary driver of some possessions being booked very far in advance (and subsequently cancelled) rather than the notification discount system. To address this Network Rail is developing a joint approach to this issue working with industry partners as part of the Rail Delivery Group's Asset, Programme and Supply Chain Management work-stream.

20.114 A number of operators said the increased protection should include revenue loss compensation. We do not agree with this and discuss our reasons for this at paragraphs 20.324 to 20.325.

20.115 Network Rail requested an increase in the ACS of approximately £1m per annum to fund the new scheme based on its estimate of how much compensation it would pay out under the extended protection for late cancellations. Network Rail based its estimate on rail replacement bus costs faced by operators using the Schedule 4 bus costs compensation formula and its own estimate of the likely number of possessions cancelled at late notice and where train services are fully reinstated. Network Rail recognised it should not be compensated where possessions are cancelled as a result of inefficient planning but argued it should be for cancellations out of its control. Network Rail assumed 50% of late cancellations were within its control and therefore it should receive half the estimated annual cost compensation through the ACS. We do not intend to provide this additional funding and we explain our reasons for this in paragraphs 20.322 to 20.323.

ACS Calculation

20.116 East Coast expressed concern about the way in which the ACS is calculated and apportioned between train operators. Of particular concern to East Coast was that over CP4 it had paid out significantly more in ACS than it received in Schedule 4 payments, largely because Network Rail had carried out less renewals work than forecast. East Coast said that it believes a 'wash-up' mechanism should be introduced whereby train operating companies can claim back ACS payments for planned work not carried out.

20.117 We are not convinced of the benefit of a wash-up mechanism, we discuss this in more detail at paragraphs 20.290 to 20.294.

Schedule 4 for freight operators

20.118 Freight operators repeated their concern that Schedule 4 payment rates were too low to compensate for disruption to freight services or properly incentivise Network Rail to minimise possessions disruption to freight.

20.119 We have increased the level of funding for the freight Schedule 4 to reflect real-terms increases in Network Rail's expected Schedule 4 payments due to a forecast increase

in maintenance and renewal activity. This has enabled us to keep the Schedule 4 payment rates the same in real terms as in CP4. We welcome any proposals from freight operators who wish to pay an access charge supplement in order to receive higher levels of compensation.

Our final determination

20.120 We set out below the changes we are making to Schedules 4 and 8. Some of these changes are updates to the metrics of the regimes, such as payment rates and benchmarks, as a result of new evidence. Others are policy changes, such as the introduction of compensation to passenger train operators for late notice cancellations of possessions.

20.121 In particular we have improved the compensation and incentive properties of Schedules 4 and 8 to improve outcomes for passengers, end-users and taxpayers. We have done this by:

(a) updating Schedule 4 and 8 payment rates so they reflect the best available evidence of the impact of possessions and poor performance on long term revenue and costs;

(b) updating performance benchmarks in the Schedule 8 regime, including ensuring Network Rail's performance benchmarks reflect the output targets we set for CP5; and

(c) improving other aspects of Schedules 4 and 8 to make sure they function effectively, do not result in perverse incentives, and work overall in the best interests of passengers, freight customers and taxpayers.

Schedule 4 and 8 compensation in relation to full impact of disruption

20.122 As part of PR13, we considered whether train operators should continue to be fully compensated for the impact of service disruption on their revenue and costs, as they are currently.

20.123 The intention of setting payment rates at a level that would not fully compensate train operators for planned and unplanned service disruption would be to help encourage train operators to work with Network Rail to improve performance and minimise the number and impact of possessions. Potential ways train operators could work more closely with Network Rail to minimise service disruption include greater effort from train operators in delay recovery from Network Rail incidents, and better possession planning with greater train operator involvement in ensuring disruption to passengers is minimised.

20.124 However, we were mindful that a disadvantage of capping Network Rail payment rates below 100% is that such an approach would weaken the financial incentive for Network Rail to reduce disruption to services by reducing the amount that the company would pay to train operators for poor performance or disruption. We

commissioned Steer Davies Gleave (SDG) to carry out research to establish whether it is appropriate to set payment rates to below 100% of the financial impact of disruption, including whether the economic benefits of doing so would outweigh the costs.

20.125 We have decided to set Schedule 4 and 8 payment rates so that they continue to compensate train operators for the full financial impact of service disruption due to Network Rail and other operators, where this is currently the case[483]. This is for the following reasons:

(a) SDG reported that interviews with, and quantitative analysis it carried out using evidence from, train operators suggested that setting Schedule 4 and/or Schedule 8 rates to 25% below full compensation would be unlikely to change behaviour. While behaviour may change to a greater extent if we were to set payment rates more than 25% below full compensation, we are concerned that this would materially reduce the financial incentives on Network Rail to minimise disruption;

(b) setting Schedule 4 and 8 rates at 25% below full compensation was estimated by SDG to significantly increase the risk premium factor in franchise bids and result in additional costs for freight operators from being exposed to risks from Network Rail's performance that the operators are unable to control;

(c) Schedule 4 and 8 payments incorporated within the REBS mechanism, as will be the case in CP5 (see chapter 19), are more likely to result in constructive engagement between Network Rail and train operators in the interests of passengers and taxpayers; and

(d) rates that compensate train operators for the full financial impact of service disruption were supported by all parties who responded to our consultation (including Network Rail, passenger and freight operators).

20.126 We also considered the effectiveness of Schedules 4 and 8 during extreme disruption, such as severe weather, including a proposal from Network Rail to introduce a 'Joint Restrictions of Use' concept into Schedule 4, where under particular 'trigger' scenarios Network Rail and train operators could agree a joint Restriction of Use. In these scenarios Network Rail would pay a lower amount of compensation and would not pay compensation in relation to estimated bus mileage where the use of buses is also not possible, due to the same adverse weather conditions. The aim of this would be to prevent situations where neither party is able to run a full timetable, but neither party wishes to be the first to declare this, in order to avoid incurring Schedule 4 costs, or avoiding Schedule 4 compensation payments.

[483] Elements of Schedules 4 and 8 that require funding, such as the freight Schedule 4 and payments for Network Rail cancellations under the freight Schedule 8, do not necessarily provide full compensation.

20.127 We will not be incorporating Network Rail's proposed joint Restrictions of Use concept into Schedule 4 of our model track access contracts. Our view is that in most parts of the network the current wording of Schedules 4 and 8 is not preventing Network Rail and train operators from working together in the interests of passengers during extreme disruption, and that in any localised circumstances where the current contractual wording is not felt to work well, it would be more effective for Network Rail and train operators to propose bespoke arrangements to us.

20.128 The other changes we have made relate specifically to Schedule 4 or 8. We set these out below.

Schedule 8 performance regime

Passenger performance regime

20.129 The Schedule 8 performance regime for passenger operators was last updated as part of PR08, but there are elements, such as Schedule 8 Network Rail payment rates, that were last reviewed in our 2005 performance review.

20.130 As part of PR13, ORR and Network Rail commissioned Halcrow to update Schedule 8 payment rates and benchmarks so they reflect the most up to date evidence. An element of this work included Halcrow engaging with train operators and Network Rail to validate its calculations.

20.131 In October 2013, we published a report from Halcrow outlining its methodology for the update of Schedule 8 payment rates and benchmarks[484]. Halcrow has also provided Network Rail (where not confidential) and ORR with the supporting data and models to aid with future operator specific recalibrations, for example, in the event of a major timetable change.

20.132 We set out below the changes we have determined in relation to the Schedule 8 passenger performance regime.

Network Rail benchmark

20.133 Since Schedule 8 is intended to be financially neutral in aggregate, benchmarks should therefore be set at a level that is challenging but realistically achievable, and consistent with the performance levels Network Rail is funded to achieve.

20.134 We have updated the Network Rail benchmarks to take account of:

(a) actual performance between the beginning of April 2010 and the end of March 2012 (the recalibration period);

(b) changes in performance required by Network Rail and train operators in order to get from the levels of performance during the above period to the performance levels in our performance targets for the first year of CP5 (PPM and CaSL); and

[484] http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php.

(c) performance trajectories within CP5. These are to ensure the CP5 benchmarks reflect a level of performance which Network Rail can deliver in respect of each train operator, while at the same meeting the performance targets we have set at an aggregate level.

20.135 The recalibration period was chosen on the basis of the following:

(a) it is desirable to use the most recent data as possible as this better reflects the current network characteristics and service patterns;

(b) it is desirable to use time periods that relate to Network Rail's financial years so improvement trajectories can be applied to Network Rail's benchmarks in a way that is simple and transparent;

(c) year-on-year fluctuations in performance due to external factors such as those related to the weather can have a significant impact on benchmarks. A two year period helps minimise the impact of these fluctuations while still ensuring the data is relatively recent; and

(d) due to the high volume of data required for the update of benchmarks, it would be costly to use data from a longer time period than necessary.

20.136 During 2013, Halcrow calculated a set of Network Rail benchmarks based on performance during the two year recalibration period, and engaged with Network Rail and train operators, before producing a set of base Network Rail benchmarks for each service group.

20.137 On 1 May 2013, Network Rail consulted on the principles it would apply when calculating Schedule 8 Network Rail benchmarks for each year of CP5[485]. It then provided us with a proposal that reflected the consultation responses.

20.138 On 14 August 2013, we advised stakeholders by e-mail that Network Rail should follow the principles below when calculating Schedule 8 Network Rail benchmarks for each year of CP5:

(a) For each year of CP5, Schedule 8 Network Rail benchmarks should be consistent with achieving the annual performance targets specified in our final determination, such as PPM and CaSL;

(b) subject to (a), CP5 Schedule 8 Network Rail benchmarks should reflect industry's view on expected CP5 performance by train operator, and therefore be consistent with whole CP5 performance (PPM and CaSL) trajectories at train operator level, which should be developed by Network Rail working with train operators;

[485] http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

(c) Schedule 8 Network Rail benchmarks should be set on the basis of the most recent data and relationships, available at the time of calculation, between Schedule 8 average minutes lateness (AML) and the performance targets specified in our final determination;

(d) Re-benchmarking exercises should take place during CP5 in instances where there are material changes to timetables, for example as a result of refranchising. These new benchmarks will be active from the date of the material change to the timetable or the proposal for a change in the benchmark, whichever occurs later; and

(e) if 'change control' is used in CP5 to adjust the performance output targets, appropriate adjustments should also be applied to Schedule 8 Network Rail benchmarks. The new benchmarks will be active from the date following the adjustment to the performance output targets.

20.139 On 23 August 2013, Network Rail wrote to each train operator to consult on two sets of service group specific benchmarks[486]. The first was based on our draft determination CP5 performance trajectories and the second on performance trajectories proposed by each of Network Rail's routes after discussion with train operators.

20.140 On 9 October 2013, we informed Network Rail and train operators of the PPM and CaSL targets we would be publishing in our final determination. Network Rail has since provided us with a proposed set of final determination-consistent CP5 Network Rail benchmarks, along with the PPM and CaSL trajectories that sit behind them.

20.141 We are reviewing these to make sure they follow the principles we set out on 14 August 2013, and will be circulating the final set of benchmarks we are determining for CP5 to Network Rail and train operators by 8 November 2013.

Network Rail payment rate

20.142 As discussed above, the Network Rail payment rate is designed to reflect the impact of performance on a train operator's long term revenue. It is composed of the estimated average marginal revenue effect (MRE) per passenger journey within a service group multiplied by the number of passenger journeys per day in that service group. The MRE represents the impact of a minute's lateness on fare revenue over time.

20.143 The MRE calculation is based on the following:

(a) estimating the amount of revenue at stake in each service group, using ticket sales data from LENNON[487] and other data sources such as those relating to

[486] http://www.networkrail.co.uk/schedule-8-benchmarks-consultation-letter.pdf.

[487] LENNON is the rail industry's central ticketing system, operated by ATOC. It includes information on national rail tickets purchased in Great Britain.

multi-modal ticketing systems, during a one year period running from April 2011 to the end of March 2012[488]; and

(b) combining this with the best available estimates from the Passenger Demand Forecasting Handbook (PDFH) on:

(i) how passenger demand responds to percentage changes in journey time (GJT[489] elasticities); and

(ii) how much passengers value lateness compared to scheduled journey time (late time multiplier).

20.144 The PDFH is the recognised industry guidance on forecasting the impact of various factors on the demand for passenger services. It has recently been updated. The bulk of this work was commissioned by the Passenger Demand Forecasting Council, with ORR and Network Rail making a contribution towards the update of late time multipliers. The work was overseen by the Passenger Demand Forecasting Executive steering group, members of which include train operators, Network Rail, ATOC, DfT, TfL, PTEG and ORR. DfT has not yet taken a view on the new PDFH guidance and will be conducting a thorough review of the updated evidence in the PDFH to help it decide whether to include it in its transport appraisal guidance (WebTAG). Since this review has not yet been completed, it has not been factored into our final determination.

20.145 Our opinion is that the evidence within PDFH 5.1 is the most up-to-date and robust available and should be used in the calculation of Network Rail payment rates.

20.146 However, Network Rail raised concerns regarding the established methodology used to convert revenue, GJT elasticities and late time multipliers into Schedule 8 payment rates for London & South East commuter services. It argued that the established approach results in Network Rail payment rates that are much higher than the actual impact of performance on revenue and suggests this could be due in part to:

(a) capacity constraints, such as crowding suppressing demand growth, even on well-performing services; and

(b) the amount of time it takes for changes in punctuality to result in changes in demand for this type of service.

[488] Unlike the recalibration period for benchmarks, this is a one year period. This is because, while revenue is influenced by performance, it tends not to fluctuate as much because the impact is not immediate. Also, given the impact of performance on revenue is not immediate, performance in 2011-12 is likely to have been influenced by both of the years used for the recalibration of benchmarks. We therefore did not consider it cost effective to use revenue data from a two year period for the update of payment rates.

[489] Generalised journey time.

20.147 As a result, on 15 May 2013, Network Rail consulted on an alternative proposal to use the same GJT elasticities and late time multipliers in relation to commuter flows to and from London that were used in our 2005 update of Network Rail payment rates[490].

20.148 At the same time Network Rail sent this letter, we invited Network Rail and train operators to jointly propose alternative Schedule 8 payment rates for our approval in any local circumstances where both Network Rail and a train operator are of the view that an alternative Network Rail payment rate would better reflect the impact of performance on revenue over time, for a particular service group. We received two such proposals and in both instances we approved them.

20.149 On 16 July 2013, in response to Network Rail's consultation letter we wrote to stakeholders to announce our technical decision in relation to the methodology for setting Network Rail payment rates[491]. We said that this decision was based on our consideration of Schedule 8 in isolation and that we would make our final decision at the same time we make our decision on the capacity charge and volume incentive. Our final decision is to use the set of GJT elasticities and late time multipliers outlined in our July 2013 letter.

20.150 Except where we have accepted alternative proposals, we have applied GJT elasticities and late time multipliers from PDFH 5.1 for all service groups, but adjusted the PDFH 5.1 GJT elasticities for commuter journeys to and from London downwards by 10%. Our decision was made on the basis that:

(a) there are greater time lags in respect of commuter journeys before the effect of performance on revenue is fully felt;

(b) peak services in London and South East are typically more crowded than elsewhere; and

(c) for commuting flows to and from London, there is likely to be a greater degree of substitution between services (rather than transport modes) as a result of performance. In some instances this substitution will be between services groups run by the same train operator

20.151 As a result of concerns expressed by some stakeholders regarding the use of PDFH 5.1 for the GJT elasticities and late time multipliers for any of the payment rates, we provided further justification in our July 2013 letter for using PDFH 5.1 as opposed to continuing to use the GJT elasticities and late time multipliers used in our 2005 update of Network Rail payment rates. Our reasons for using the GJT elasticities and late time multipliers in PDFH 5.1 are as follows:

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[490] Network Rail's consultation, responses and conclusion are published at http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

[491] http://www.rail-reg.gov.uk/pr13/PDF/london-commuter-flows-decision-2013-07-16.pdf.

(a) they are based on the most recent and comprehensive review of the evidence available. In earlier versions of the PDFH, the GJT elasticities were based on fewer and less up to date studies and the late time multipliers were mainly based on a single study;

(b) the GJT elasticities in PDFH 5.1 are clear on what time period they relate to. This was not clear in earlier versions of the PDFH;

(c) a recent Institute for Transport Studies and Mott MacDonald study[492] found that the GJT elasticities from PDFH 5.0 frequently understated demand effects; and

(d) the late time multipliers have been adjusted downwards to make them consistent (when combined with the GJT elasticities) with the results of an analysis of evidence that observes the direct impact of performance on demand. This reduces the risk that they are over-stated.

20.152 More detail on our decision, including our reasons for using the evidence from PDFH 5.1, rather than earlier editions of the PDFH, is included within our decision letter.

20.153 In general, Schedule 8 payment rates have increased considerably, due to:

(a) increases in passenger numbers, meaning there is more fare revenue at stake;

(b) updates to the PDFH evidence on how passenger demand responds to increases in journey time; and

(c) above inflation increases in fares on some services.

20.154 Table 20.1 shows the factors that have caused the CP5 Network Rail payment rates to increase relative to CP4, and their relative contributions. The main driver of the increase is the 40% increase in fare revenue since payment rates were last reviewed in 2005. The use of the updated evidence from PDFH 5.1, contributes towards a further 25% increase, which is offset by a 4% decrease due to our 10% downward adjustment in respect of London and South East commuter journeys, and alternative payment rates where Network Rail and train operators have had them approved. These two factors combined result in a 20% increase in Schedule 8 payment rates, above the 40% increase due to the increase in fare revenue.

[492] Institute of Transport Studies and Mott MacDonald (2012), 'The impact of large changes in Generalised Journey Time on rail passenger demand', prepared for Passenger Demand Forecasting Council.

Table 20.1: Factors that have caused the CP5 passenger Schedule 8 Network Rail payment rates to increase relative to CP4

Factor	% impact on payment rates
Increase in fare revenue	40% increase
Use of updated evidence from PDFH 5.1	25% increase
10% downward adjustment in respect of London and South East commuter journeys, and alternative payment rates where Network Rail and train operators have had them approved	4% decrease
Total increase	**68% increase**

Note:

1. The percentage contributions and total percentage increase are calculated by looking at the increase in Schedule 8 payment if Network Rail's average minute lateness is one minute different to benchmark for each service group (i.e. weighted by the size of payment rate for each service group)
2. The percentage contributions of individual factors do not add up to the total increase because applying several percentage changes has a multiplicative effect.

20.155 In its response to our draft determination, Network Rail reiterated its concern about Network Rail payment rates in respect of London and South East commuter services and also expressed concerns about the scale of the increase in the Network Rail payment rates more generally. This is explained in more detail in paragraphs 20.75 to 20.83 above.

20.156 One particular concern expressed by Network Rail was that if we were to use the evidence from PDFH 5.1, the increase in Network Rail payment rates could result in cash-flow problems for train operators if Network Rail outperforms its benchmarks.

20.157 Network Rail has provided us with estimates of the size of the Schedule 8 payments for different deviations of PPM from target, based on the model it created to estimate the relationship between PPM and AML for its benchmark calculations. It also shared this analysis with train operators who requested it.

20.158 We have compared the Schedule 8 bonus payment that would be made by each train operator to Network Rail if PPM were one percentage point above target for a whole year due to Network Rail performing well[493], with the total annual revenue of each train operator. The total increase in Schedule 8 bonus payment as a result of using the PDFH 5.1 evidence (combined with adjustments described above), rather existing GJT elasticities and late time multipliers, would represent approximately 0.2% of total train operator revenue. In no instance would the payment be more than 0.5% of train operator revenue.

[493] The analysis assumes that train operators perform at benchmark.

20.159 Since bonus payments made to Network Rail would reflect future revenue gains, this would also only represent a short-term cash-flow issue if revenue does not respond until after the bonus payment is made.

20.160 In light of this analysis and the fact that only two train operators have requested payment rates that are lower than those calculated using the above methodology, we do not think there is strong evidence that the use of the evidence from PDFH 5.1 will result in train operators being subject to undue financial risk. We also do not think any of the arguments in Network Rail's consultation response would provide us with a sufficient justification to deviate from the methodology for calculating the Network Rail payment rates that we set out in our July 2013 letter.

20.161 Overall, the increase in the Network Rail payment rates will help strengthen the incentives on Network Rail to improve its performance, since Network Rail will face a higher financial penalty if it performs poorly and will make higher financial gains if it performs well. Setting the Network Rail payment rates so they are based on the most up to date evidence will also help it prioritise its investments where there is the most passenger revenue at stake.

20.162 Crucially, setting the Network Rail payment rates at the right level will also have the benefit of ensuring train operators receive appropriate compensation for disruption to their services caused by Network Rail and third parties. This will reduce the risk train operators are exposed to that they cannot control, which will help reduce the risk premiums factored into future franchise bids.

20.163 Our final set of Network Rail payment rates are lower than the ones we produced for our draft determination. This is due to the final set of Network Rail payment rates:

(a) being based on the final set of GJT elasticities and late time multipliers for use in PDFH 5.1 (the draft Network Rail payment rates were based on drafts of these values);

(b) reflecting our decision on 16 July to adjust payment rates relating to London and South East commuter flows downwards by 10%; and

(c) reflecting proposals from train operators and Network Rail for alternative Network Rail payment rates.

Train operator benchmark

20.164 Train operator benchmarks should also be set at a challenging but realistically achievable level. For CP5, we have updated train operator benchmarks to reflect actual performance between the beginning of April 2010 and the end of March 2012, as part of the Schedule 8 recalibration work we and Network Rail have commissioned from Halcrow.

20.165 The performance of franchised train operators is regulated by the franchising authorities[494]. We are of the view that train operators already face significant financial incentives to perform well through franchise agreements and exposure to fare revenue. We will not be setting performance trajectories for train operators in Schedule 8 as we are not of the view this would materially enhance the incentives which the train operators already face, i.e. train operator benchmarks will be set on the basis of performance during the two year recalibration period.

Train operator payment rate

20.166 Although the train operator payment rate reflects the impact of the performance of a train operator on other train operators, payments between train operators are channelled through Network Rail in order to reduce the overall number of transactions.

20.167 The work we and Network Rail commissioned from Halcrow to update train operator payment rates reflects the following:

(a) the updated Network Rail payment rates, as these reflect the best available evidence of the impact of performance on long term revenue; and

(b) the latest pattern of impacts of each train operator's performance on other train operators (where much more detailed data is now available than in PR08).

20.168 In our November 2012 consultation we consulted on a number of policy issues, relating to Schedule 8. Our decisions in relation to these issues are set out below.

Additional compensation for sustained poor performance

20.169 Under Schedule 8, additional compensation may be claimed when Network Rail's performance in relation to a specific train operator's services is worse than the Sustained Poor Performance (SPP) threshold, providing the train operator can show that it has not been adequately compensated through the liquidated sums element of Schedule 8. Our intention is that the SPP threshold should enable additional compensation to be claimed for sustained poor performance where compensation under the standard Schedule 8 arrangements is likely to be materially less than what is needed to reflect the actual impact of poor performance on the train operator.

20.170 The SPP threshold was established in our 2005 passenger performance regime review. Table 20.2 shows what levels the SPP threshold has been set at since it was introduced:

[494] DfT and Transport Scotland. Similarly, Merseytravel and TfL regulate the performance of those train operators with whom they have a concession agreement (which is similar to a franchise agreement).

Table 20.2: Passenger Schedule 8 SPP thresholds in previous years

Year	SPP threshold
2006-07	25% worse than benchmark performance over at least 12 months
2007-08	22.5% worse than benchmark performance over at least 12 months
2008-09	20% worse than benchmark performance over at least 12 months
2009-14	10% worse than benchmark performance over at least 12 months

20.171 In our November 2012 consultation we stated that we consider train operators should be protected from the financial impacts of sustained poor performance by Network Rail; and that we are also of the view that a key strength of Schedule 8 is its liquidated sums nature, which is simpler and less costly to administer than a bespoke claims process. We proposed that we should increase the SPP threshold, and asked for suggestions from consultees on the level at which we should set it.

20.172 We received a mixed response from stakeholders. Network Rail was in favour of increasing the SPP threshold, and commissioned some research from Steer Davies Gleave (SDG), which it submitted as part of its consultation response, which recommended it should be set at 30%. ATOC and several train operators argued that the 10% threshold remains appropriate.

20.173 We have decided to continue to set the SPP threshold at 10% of the Schedule 8 benchmark for CP5, on the basis that increasing it could weaken Network Rail's incentive to avoid poor performance and the small number of claims made in CP4 does not indicate that in practice an SPP threshold of 10% is undermining the liquidated sums nature of Schedule 8[495]. Given the legal and administrative costs to a train operator of making a claim, we anticipate that SPP claims are in general only made when losses incurred are materially greater than the formulaic Schedule 8 compensation received.

20.174 The analysis presented by SDG suggests that even if Network Rail were performing at its benchmarks on average during 2011-12, an estimated 47% to 68% of train operators would be eligible to claim additional compensation for SPP[496]. With the SPP threshold set at 30% which the SDG analysis recommends, an estimated 5% of train operators would be eligible to claim additional compensation for SPP. This analysis

[495] There have been two claims since the draft determination was published, but overall the number of claims still remains low, given the extent that Network Rail has been missing its performance targets over a sustained period of time.

[496] These two estimates are based on analysis that assumes that (i) performance in 2011-12 was better by fixed percentage across service groups or (ii) the SPP threshold is set at an average performance over the previous two years, respectively. The former assumes variability of performance between train operators remains the same. The latter assumes fluctuations of Network Rail's performance over time in relation to specific train operators remain the same.

assumes continuation of the current variability In Network Rail's performance, either across train operators, or in relation to a specific train operator over time.

20.175 At face value the evidence presented by SDG suggests that the 10% threshold might be too low. However, given Network Rail has continued to underperform against its performance targets, we do not consider it would be appropriate to make any changes to the SPP threshold that could weaken Network Rail's incentives to avoid poor performance over a sustained period of time.

20.176 Given the relatively low number of claims during CP4 despite Network Rail not meeting its performance targets, and the fact the CP5 Schedule 8 payment rates will be based on the best available up to date evidence on the impact of performance on revenue, we do not anticipate that setting the threshold at 10% will result in a large number of claims if Network Rail performs at benchmark in aggregate. But at the same time, maintaining the 10% threshold will ensure the option remains available to train operators to claim additional compensation in the event relevant losses are not adequately compensated for by the liquidated sums element of Schedule 8.

Compensation for Passenger Charter payments

20.177 Currently a small number of train operators opt to pay an ACS in order to receive compensation to cover season ticket discounts to passengers in accordance with Passenger Charter regimes within their franchise agreements. Net payments within the Passenger Charter element of Schedule 8 are now very small and for the first three years of CP4, Network Rail has received significantly more in ACS for Passenger Charter compensation than it has paid out under Schedule 8.

20.178 This element of Schedule 8 is not operating as it originally intended, nor is it cost effective to update the payment rates relating to make it function more effectively. We therefore will remove this element of Schedule 8.

20.179 Despite the imbalance in payments it is possible that some of the train operators that opt into the Passenger Charter element of Schedule 8 view it as catastrophe insurance to protect them if there are significant declines in Network Rail's performance. Passenger operators are free to agree bespoke arrangements with Network Rail as part of their track access contracts, subject to approval by us, or seek insurance from the private market.

European Train Control System re-opener

20.180 In our July 2013 implementation consultation we proposed a re-opener in the Schedule 8 provisions, relating to the introduction of the European Train Control System (ETCS). This is because ETCS will be implemented on some parts of the network before the end of CP5. We designed the re-opener to be as flexible as possible since further work is needed to determine exactly how the introduction of ETCS should be reflected in the metrics of Schedule 8.

20.181 We received responses from ATOC and Greater Anglia expressing concern that the proposed provisions in the passenger Schedule 8 seemed too broad. Concern was expressed that they give no indication of the nature of the changes that might trigger them, or the principles which might be applied when considering proposed amendments in relation to ETCS, and it was suggested that the changes to Schedule 8 should be addressed through the ERTMS Part G process.

20.182 Since ETCS is at an early stage of development, we have deliberately produced a re-opener that is flexible as it is not yet clear in exactly what circumstances it will need to be used. We are not convinced the ERTMS Part G process would necessarily be a suitable substitute for updating the performance regime itself. We therefore, as a default, will include the provisions outlined in our implementation consultation in Schedule 8 of track access contracts for CP5.

20.183 As stated in our implementation consultation, we expect the process for deciding when and how Schedule 8 should be amended, to reflect the introduction of ETCS, to be led by the industry. We understand that discussions are on-going regarding the transitional mechanisms that will take place while ETCS is being introduced, and expect in due course to work with the industry to develop a set of principles for us to follow when considering changes to Schedule 8 as a result of the introduction of ETCS.

Other issues

20.184 There are some other issues we consulted on in November 2012 in relation to which we will not be making changes. These are as follows:

(a) **whether to introduce a time delay on Schedule 8 payments.** Ideally Schedule 8 payments should reflect the impact of performance on train operators' revenues over the long term. However, Schedule 8 payments are made within 35 days of the preceding four-week period. After reviewing the evidence we are not of the view the benefits of introducing a time delay on Schedule 8 payments are material enough to justify the additional complexity and administrative burden it would result in. This view is reflected in the responses we received from stakeholders;

(b) **whether paragraph 17 of Schedule 8 should be amended to reduce the number of circumstances in which train operators may request changes in payment rates.** Paragraph 17 of Schedule 8 allows Network Rail or train operators to propose changes to metrics in Appendix 1 of Schedule 8, such as payment rates and benchmarks, mid-control period. Network Rail has proposed that the use of paragraph 17 of Schedule 8 to change Network Rail payment rates should be restricted to situations where there are major timetable changes. We will not be introducing this restriction. Our view is that there could be legitimate reasons for Network Rail or train operators to propose changes to

Appendix 1 mid-control period, other than a timetable change, including those that are not foreseeable during PR13; and

(c) **treatment of cancellations by train operators to their own trains.** Currently the way in which the definitions and formulae in Schedule 8 work means that when a train operator cancels one of its own trains, it has an impact on its Schedule 8 payments even when it does not cause delay to the services of other train operators. We consulted on whether it would be worth changing this element of Schedule 8, when weighed against the costs of doing so. Responses from stakeholders suggest it is a small issue that is not having any particular impact on behaviour and that a change is unlikely to justify its cost. We therefore will not be introducing a change for CP5. However, we recommend that at the next substantive update of Network Rail's PEARS system, which translates delay attribution data into Schedule 8 payments, Network Rail considers the merits of including within PEARS the capability of allowing a change to be made to the treatment of cancellations by train operators to their own trains.

20.185 There are also a few minor drafting improvements that have been identified by stakeholders. We have included these in the revised drafting of the template track access contracts, on which we consulted on 12 July 2013.

Freight performance regime

Network Rail benchmark

20.186 As with the passenger Schedule 8, we have set the Network Rail benchmark at a level that is challenging but realistically achievable and consistent with the performance levels for which Network Rail is funded.

20.187 During CP4 both the regulated target for Network Rail freight performance and the benchmark in the freight performance regime were based on delay minutes per distance operated. Hence they were very closely correlated. In our November 2012 consultation we said we would set the benchmark to reflect the performance targets we set for Network Rail in CP5. Since producing that document, we have decided that the Network Rail performance target in relation to freight services will be expressed in terms of the new Freight Delivery Metric (FDM) which measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time. It only covers delay or cancellation caused by Network Rail. Further detail on the FDM is contained in chapter 3.

20.188 We do not consider that it would be robust to determine the Network Rail benchmark on the basis of this target, given it is based on an entirely new metric and differs slightly in purpose from the previous delay minute target. It conflates cancellations with delay, whereas cancellations are treated separately in the freight Schedule 8. Overall we expect Network Rail to perform throughout CP5 at a level equal to the delay minute target of 2.94 delay minutes per 100 train km we set for the final year of

CP4. This matches the internal route level delay minute target Network Rail referred to in its SBP.

20.189 Network Rail has argued that the methodology that we applied to produce the CP4 Network Rail benchmark for the new standardised regime did not take into account the fact that the delay minute target set for CP4 was based on delays caused by Network Rail captured in TRUST, and that this does not correspond exactly to the way Network Rail delay is defined when calculating Schedule 8 payments. Network Rail has proposed an adjustment to reflect this.

20.190 In order to ensure the Network Rail benchmark is consistent with the target for the final year of CP4 of 2.94 delay minutes per 100 train km, we have factored the following into our calculation of the draft Network Rail benchmark:

(a) delay caused by other train operators, which is classified as Network Rail delay under Schedule 8 (this was also factored into the Network Rail benchmark calculation for CP4);

(b) delay agreed to be caused by Network Rail as part of the Post Day 8 resolution process[497], but which is still shown as freight operator-caused in TRUST due to it not being agreed until after the TRUST data is finalised (as per Network Rail's proposal);

(c) delay agreed to be Network Rail-caused due to commercial agreements, for example in relation to delay attribution when there is leaf fall, but recorded as freight operator-caused in TRUST (as per Network Rail's proposal); and

(d) delay agreed as service variation minutes[498] under the Management of Freight Services During Disruption (MFSDD) process[499]. During CP4 an increasing proportion of delays to freight services have been classified as service variation minutes and therefore not captured in TRUST, when they previously would have been. The adjustment we apply to the CP5 benchmark should reflect the categories of delay captured by TRUST during the period on which our PR08 calculation of the end of CP4 delay minute target was based. Our adjustment therefore reflects service variation minutes in 2006-07 as a proportion of Network Rail caused delay in 2006-07, as this falls within the time period that the CP4

[497] It is only possible to make detailed changes to individual records within the TRUST system up to 8 days after an incident. However there will be some incidents, such as where detailed investigation is needed into its cause, e.g. an electrification dewirement, where the final responsibility is not established until after this point. In addition there may be a negotiated agreement to split delay minutes in a particular way on days when there has been severe disruption due to seasonal factors.

[498] A service variation is when a service is re-scheduled at very short notice at the request of Network Rail.

[499] When an incident is in progress and likely to continue, freight trains that have timetable slots through the area may be given new schedules that reflect diversion or being held back in the interests of avoiding wider disruption, for example, if there are limited opportunities to regulate trains into loops along the way.

delay minute target was based on[500]. This differs from Network Rail's proposed adjustment which was for the adjustment to be based on service variation minutes during 2011-12. Our view is that Network Rail's proposal would result in a benchmark that is inconsistent with the delay minute target for the final year of CP4.

20.191 On the basis of information provided by Network Rail, we have calculated the CP5 Schedule 8 Network Rail benchmark to be 7.20 minutes[501] of delay per 100 freight operator miles[502]. The reporters, Arup, have audited the data Network Rail provided to us for use in this calculation to ensure its accuracy.

20.192 Without taking into account this difference in definition of Network Rail caused delay in TRUST and freight Schedule 8 in our setting of the Network Rail benchmark, Network Rail would be expected to make a net payment to freight operators each year. Based on draft delivery plan traffic forecasts, we estimate that Network Rail would have required an average of £3.8m per year funding to cover the cost of this.

Network Rail payment rate

20.193 The Network Rail payment rate is the basis for compensation paid to freight operators or bonuses paid to Network Rail, when it performs worse than or better than benchmark respectively. The payment rate should reflect the average financial impact to a freight operator of each minute of delay to a freight train attributable to Network Rail, and is the same for all freight operators.

20.194 Initial analysis that we carried out based on previous ORR research on rail freight users' value of time[503] (consulted on as part of the 2010 review of access policy) suggested that the Network Rail payment rate may currently incorrectly compensate freight operators for delays to their services. However, in our draft determination, we highlighted that there is uncertainty over the robustness of some of the evidence in the analysis, and consequently our resulting estimates for the payment rate cover a wide range of £3.00 to £25.70 (2012-13 prices). Our research estimated that costs to freight operators as a result of one minute of delay make up £3.00 to £4.40 of the total range, with the remainder due to revenue effects. Given this range the new evidence

[500] Known at the time as 'hidden delay.

[501] This is higher than our draft determination Network Rail benchmark of 6.91 minutes of delay per 100 freight operator miles. This is due primarily to Network Rail providing us with more accurate data on delay minutes caused by third parties, but also due to the draft determination benchmark being based only on 2011-12. Network Rail has since provided us with 2010-11 data, which we have incorporated into our calculation. The revised data Network Rail has supplied with has been audited by the reporters.

[502] Freight Schedule 8 benchmarks are in miles, whereas our delay minute targets were in km.

[503] *Rail Freight User Values of Time & Reliability: Final Report,* AECOM and University of Leeds Institute for Transport Studies, available from http://webarchive.nationalarchives.gov.uk/20111108204718/http:/www.rail-reg.gov.uk/server/show/nav.2254.

did not help us reach a specific payment rate and was not judged significantly stronger than evidence provided previously by freight operators as the basis for the current rate.

20.195 If it were assumed that the full impact of delays on operator and user costs is borne by freight operators, the range is £21.20 to £25.70 per delay minute. At the time of our draft determination, we did not have any evidence on the proportion of the costs of delay that are incurred by freight operators (as compared to being retained by freight users), so there was no reason to assume it would be the full impact. Therefore we decided to keep the CP4 Network Rail payment rate at £19.13 per minute (2012-13 prices), but uplift it for inflation.

20.196 In response to our draft determination, RFOA commissioned two pieces of analysis[504]:

(a) one from L.E.K. which provided some evidence on the extent train loads have increased over the last few years and estimated that 80% of operator costs and 100% of user costs of delay increase proportionally with train load; and

(b) the other from Professor Myatt of London Business School, which estimated the proportion of the freight operator and user costs of delay that are ultimately borne by freight operators.

20.197 RFOA and freight operators suggested that the evidence from these two studies should be applied to the analysis we conducted using the ORR research on freight users' value of time. We assessed the evidence from the L.E.K. and Myatt studies and concluded that they do not suggest that the draft determination Network Rail payment rate of £19.13 per minute is too low. We have therefore decided to determine this payment rate for CP5.

20.198 The L.E.K. study contained:

(a) an estimated breakdown of freight operator costs of delay, along with assumptions for each cost on whether the cost changes proportionally with train load. The analysis estimated that wagon lease and maintenance, fuel, handling and repositioning costs all increase proportionally with train load, and as a result 80% of overall freight operator costs of delay increase proportionally with train load;

(b) a list of freight user costs of delay, along with an estimate that 100% of these costs increase proportionally with train load; and

(c) a calculation showing that there was a 3.4% per annum increase in load[505] carried per train between 2009-10 and 2011-12. L.E.K. suggested that the trend

[504] These studies are included within RFOA's response on our PR13 draft determination consultation page http://www.rail-reg.gov.uk/pr13/consultations/draft-determination.php

[505] Measured as tonnes of cargo

of increasing tonnes per train is forecast by Network Rail to continue throughout CP5.

20.199 The RFOA letter argued that this uplift should be applied to the Network Rail payment rate calculation to cover expected growth in load per train between 2012-13 and 2014-15, and then an annual adjustment should be applied in each year of CP5 to reflect further growth in load per train.

20.200 Passenger Schedule 8 Network Rail payment rates are based on revenue data from 2011-12. The only uplift that is applied is for inflation. It would therefore be inconsistent for us to apply an uplift to cover expected growth in load per train, other than to cover the period between 2009-10, when the ORR freight user value of time study was conducted, and 2011-12.

20.201 No evidence was provided in the L.E.K. analysis as to why any particular category of operator or user cost would increase proportionally with train load. This was highlighted by Network Rail in an e-mail it sent on 1 October 2013 to ORR and freight operators.

20.202 In particular it is not clear why fuel and repositioning costs resulting from a delay would increase proportionally with train load. When a train is delayed, a large part of the time will be spent idling, the costs of which should not change with heavier train loads. Together, fuel and repositioning costs, according to the L.E.K. analysis, make up an additional 61% of operator costs[506] suggesting that the proportion of operator costs that increase proportionally with load could be as low as 20%.

20.203 It seems reasonable that a large proportion of user costs would increase proportionally with train load, but it is not convincing that management time would increase proportionally with train load given that some trains are for a single customer. It is possible that stock outs[507] would decrease rather than increase with train load, if fewer deliveries are made with longer trains.

20.204 If we assume that freight operator costs increase at 20% of the rate average train load increases and freight user costs increase at 100%[508] of the rate average train load increases, we estimate that with load per train increasing at 3.4% each year, costs associated with delay minutes per train would increase by 2.9% to 3.0% each year.

20.205 If we apply this to take into account of the growth in load per train between 2009-10 and 2011-12, this gives a range for the Network Rail payment rate of £22.50 to £27.20 per delay minute[509], if the full operator and user costs of delay were incurred by the

[506] L.E.K. already acknowledged that 19% of freight operator costs do not increase with train load

[507] A stock out is where a freight user runs out of stock of something, for example, an input needed in a manufacturing process.

[508] This assumption is probably too high given the above

[509] This is an average of what the cost of a delay minute would be with 1 or 2 years of growth in volume per train since 2010-11 and 2011-12 span across two years.

freight operator. The CP4 Network Rail payment rate of £19.13 is 70% to 85% of this. By continuing with the CP4 Network Rail payment rate, we are therefore implicitly assuming that 70% to 85% (mid-point 78%) of the operator and user costs of delays are ultimately borne by freight operators.

20.206 These steps are summarised in Table 20.3.

Table 20.3: Applying the L.E.K. analysis to the ORR analysis using the freight user value of time study

	Amount
CP4 Network Rail payment rate (A)	£19.13
Estimated financial impact to freight operator of delay minute, based on ORR research using freight user value of time research (B)	£3.00 to £25.70
Estimated financial impact to freight operator of delay minute, based on ORR research using freight user value of time research, assuming the full impact of delays of delays on operator and user costs is borne by freight operators (D)	£21.20 to £25.70
As above, but with an uplift of 2.9% to 3.0% per annum applied to reflect growth in load per train between 2009-10 and 2011-12 (D)	£22.50 to £27.20
Implicit assumption of percentage of operator and user costs of delays that are borne by freight operators if continue with CP4 Network Rail payment rate (E = A/D)	70% to 85% (mid-point 78%)

20.207 The Myatt analysis provided an estimate of the proportion of freight operator and freight user costs of delay that are ultimately incurred by freight operators, in each of three scenarios.

(a) a market where all of a commodity is transported by four competing rail operators and the delay induced costs impact on a single operator;

(b) a market where a commodity is transported by road and four competing rail operators, and the delay induced costs impact on a single operator; and

(c) a market where a commodity is transported by road and four competing rail operators, and the delay induced cost affects all operators.

20.208 We do not consider the first two scenarios to be realistic. All rail freight operators use Network Rail's infrastructure and it is in general likely to be the same infrastructure when transporting commodities between two particular locations. This means delays and expectations of future delays, which affect pricing and output decisions, are likely to have a similar effect on all operators running services between the two locations.

20.209 The third scenario assumes there are four operators and overall rail makes up 10% of the freight market across all transport modes. While this is a fair representation of the overall freight market, the shares for individual commodities transported by rail differ considerably, with 70% of coal and coke, 3% of petroleum products and 7% of other tonne km being transported by rail in 2010[510]. If the rail market shares for each of the three commodities are weighted together by their shares in rail freight, the overall average market share is 25% for tonne km. Using the formula in Myatt's analysis, this would result in 88% of freight operator user costs being borne by freight operators, which using the analysis above, would suggest a Network Rail payment rate of £19.70 to £23.80 would be appropriate.

20.210 However, we consider this simple application of Myatt's analysis would be likely to lead to an over-estimate of the Network Rail payment rate, for the following reasons:

(a) were there data available to conduct the analysis at a greater degree of disaggregation including to and from specific locations, and excluding markets where rail freight is not present, it is likely the weighted average share would be considerably higher. This is because the rail market share tends to be higher for the specific commodities within the categories captured above that form a larger part of the rail freight market; and

(b) Myatt's assumption that freight operators operate in perfectly competitive markets and have no influence on price is extreme. Rail freight does not operate in a perfectly competitive market. It faces significantly downward sloping demand curves, even with respect to intermodal, as used, for example, in MDST's work for ORR on the impact of the freight specific charge[511].

20.211 We therefore do not consider the third scenario presented in Myatt's analysis as providing a realistic reflection of the proportion of operator and user costs of delay that are incurred by freight operators.

20.212 An alternative approach would be to compare the impact of delay costs with that of the incidence of a tax, which is similar to an external cost increase affecting all operators. It is a standard economic result[512] that the proportion of a tax that is incurred by the seller can be estimated as the ratio of the demand elasticity to the sum of the supply and demand elasticities[513]. If this analysis is applied to delay costs, 78%

[510] Source: Transport Statistics Great Britain (TSGB).
See: https://www.gov.uk/government/publications/transport-statistics-great-britain-2012.

[511] 'Impact of changes in track access charges on rail freight traffic', MDS Transmodal Ltd.
See http://www.rail-reg.gov.uk/pr13/PDF/mdst-freight-tac-changes-feb2012.pdf.

[512] The result is from partial equilibrium analysis. Partial equilibrium analysis is of a single market, assuming other markets are unchanged.

[513] Demand elasticity in this instance estimates the extent demand for rail freight will fall (rise) as a result of an increase (decrease) in costs associated with delays. Demand can be considered elastic, when it changes by a large amount in response to a change in costs associated with delays. Supply elasticity in this instance estimates the extent supply of rail freight will fall (rise) as a result of an

of the delay costs would be incurred by freight operators[514] if the elasticity of demand for rail freight were approximately four times the elasticity of supply of rail freight. More elastic supply or less elastic demand would reduce the burden on freight operators. It would not be surprising if the elasticity of supply was greater than that for demand, in which case less than 50% of the delay costs would be incurred by freight operators.

20.213 Myatt also considered the situation when markets are not competitive, which was not explained in detail in the analysis attached to RFOA's consultation response on 4 September 2013. In follow up to a request we made on 19 September 2013, we were sent an e-mail on 1 October 2013 containing a summary of Myatt's analysis based on markets not being competitive. This was several weeks after the closing date for responses. Given the nature of this work, analysis of it would require further discussion and detailed explanation of each of the steps that were taken, so we have not been able to assess it fully in the time available. Our initial view of this analysis is that it would not change our position but we will take it into account in any future work on the topic.

20.214 Overall, the evidence commissioned by RFOA does not provide us with sufficient justification to change the Network Rail payment rate of £19.13 per minute in our draft determination.

20.215 While we do not regard the evidence provided by RFOA as justifying an adjustment to the CP5 Network Rail payment rate in our draft determination, we very much welcome this evidence as a first step towards developing a more transparent, evidence based payment rate for CP6.

Network Rail cancellation payments

20.216 Network Rail cancellation payments compensate freight operators for the financial impact of each freight train cancellation attributable to Network Rail. If cancellations exceed a threshold representing the historic normal number of cancellations, a higher cancellation payment applies. We will continue to set this cancellation threshold at 0.41% of services scheduled515.

20.217 Unlike the Network Rail payment rate, cancellation payments are not part of the benchmarked regime. In CP4, Network Rail was funded for this part of the regime and it will continue to be funded for this aspect in CP5.

20.218 Our previous research used to establish an appropriate freight Schedule 8 Network Rail payment rate also provided limited evidence regarding an appropriate level for

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increase (decrease) in costs associated with delays. Supply can be considered elastic, when it changes by a large amount in response to a change in costs associated with delays.

[514] which is what is implicitly assumed in the CP4 Network Rail payment rate if we apply the L.E.K analysis to the ORR analysis of the freight user value of time study, as shown in Table 20.3.

[515] In the 2010-11 and 2011-12 recalibration period, 0.42% of services were cancelled, which is similar to 0.41%.

Network Rail cancellation payments. Further empirical work would be required to determine cancellation payments that fully reflect cost and revenue impacts on operators due to freight train cancellations attributable to Network Rail.

20.219 For CP5, the Network Rail cancellation payment rates will remain the same but uplifted for inflation. In 2012-13 prices the below threshold cancellation payment will be £1,813 and the above threshold cancellation payment will be £4,835. These cancellation payments imply a Network Rail funding requirement of £20.1m in CP5 (in 2012-13 prices). This is shown in Table 20.4.

Table 20.4: Our determination of Network Rail's funding requirement to cover the expected costs of Schedule 8 Network Rail cancellation payments to freight operators

£m (2012-13 prices)	CP4	CP5					CP5
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain	3.6	3.8	3.9	4.0	4.2	4.3	20.1
England & Wales	3.3	3.4	3.5	3.7	3.8	3.9	18.3
Scotland	0.3	0.3	0.4	0.4	0.4	0.4	1.8

Note: Numbers may not reconcile due to rounding.

Freight operator benchmark

20.220 As with the Network Rail benchmark we have set the freight operator benchmark at a challenging but realistically achievable level. Our calculation of the freight operator benchmark is 2.37 minutes of delay per 100 freight operator miles for the beginning of CP5. This is based on an average of 2.29 minutes of delay per 100 freight operator miles caused by freight operators to third parties during a two year recalibration period from the beginning of April 2010 to the end of March 2012, adjusted for traffic growth[516]. The recalibration period is consistent with that used to update passenger train operator benchmarks. Our reasons for choosing this period are outlined in paragraph 20.135.

20.221 In response to our November 2012 consultation and draft determination, freight operators have argued that we should set the freight operator benchmark at the same level as in CP4 to encourage and reward long term investment.

20.222 While we acknowledge that ORR updating the freight Schedule 8 benchmark every five years could have some dampening effect on the returns larger freight companies receive on investments to improve performance, we have decided to set the benchmark based on performance during CP4 for the following reasons:

(a) it is consistent with our approach for updating franchised and open access passenger operator Schedule 8 benchmarks;

[516] Actual traffic growth to 2012-13, draft delivery plan forecast traffic growth from this point to the beginning of CP5.

(b) it ensures this element of Schedule 8 remains financially neutral, providing freight operators continue to perform at the level they did during the two year calibration period. If we were to set the freight Schedule 8 benchmark at the same level it was set for the first year of CP4, but adjusted for traffic growth, we estimate that Network Rail would require an average of £5.4m additional funding per year to cover the expected level Schedule 8 bonus payments to freight operators; and

(c) Schedule 8 payments are not the only driver of investment by freight operators to improve performance and freight operators are still able to benefit from Schedule 8 payments arising from improvements they make to their performance between when the improvement is made and when it is reflected in the next update of the freight operator benchmark.

20.223 Our view is that updating the freight operator benchmark every five years at periodic review achieves the right balance between maintaining the financial neutrality of the delay minute element of the freight Schedule 8 and incentivising investment to improve performance.

Adjustment to reflect congestion on network

20.224 During CP4, if overall traffic growth on the network was above (or if traffic reduction was below) 2.5%, an adjustment was made to the freight operator benchmark.

20.225 The formula adjusting the freight operator benchmark when the materiality threshold is exceeded is as follows:

> Adjusted freight operator benchmark = Current train operator benchmark
> x [(Traffic growth x congestion factor) + 1]

20.226 We have used this formula to adjust average delay caused by freight operators to third parties per 100 miles during the recalibration period to the freight operator benchmark for the beginning of CP5, which reflects traffic growth.

20.227 The congestion factor is designed to represent the increased extent to which freight operator delay to their own trains will result in delay to third party trains, when there is increased traffic on the network. During CP4 it was set at 1.5, which is a standard assumption often used in economic analysis relating to networks.

20.228 For CP5, we have made two changes:

(a) updated the congestion factor to 1.044 to reflect work carried out by Arup on the actual impact of traffic growth on delay minutes caused by freight operators to third parties, as part of the update of the capacity charge. The industry has been given the opportunity to comment on Arup's work through the industry group. The calculation of the updated congestion factor relies to a large extent on the work

Arup has done as part of Network Rail's work to recalibrate the capacity charge; and

(b) require Network Rail to update the freight operator benchmark every year to reflect changes in traffic levels, rather than only if a 2.5% threshold is crossed. This is something which has been suggested at the freight Schedules 4 and 8 industry group. It is a relatively straightforward calculation, and since the process of reviewing the traffic levels to determine whether the benchmark needs changing takes place each year anyway, we view it as more appropriate to update the benchmark each year instead.

20.229 If we had used the previous, assumption based, congestion factor of 1.5 to adjust the freight benchmark to reflect traffic growth, the freight operator benchmark would have been 2.41 instead of 2.37 delay minutes to third party operators per 100 miles. Since we are of the view the congestion factor of 1.044 is the most appropriate to use, we estimate that using a congestion factor of 1.5 would result in Network Rail requiring an average of £600k per year funding to cover the cost of expected bonus payments to freight operators.

Freight operator payment rate

20.230 The purpose of the freight operator payment rate is to reflect the average impact of a minute of delay caused by a freight operator to another train operator. The CP5 freight operator payment rate will be £43.44 (in 2012-13 prices) per minute of delay to third party trains which is attributable to the freight operator[517]. The calculation was carried out by Network Rail and has been reviewed by the reporters.

20.231 This is an increase from the current payment rate of £37.10 and represents a 17% real terms increase in the CP4 payment rate. The increase has been driven by large increases in the Network Rail payment rates in the passenger Schedule 8, which has been partially offset by an improvement in the methodology Network Rail used in its calculation.

20.232 Network Rail calculated the freight operator payment rate by weighting the Network Rail £ per delay minute payment rates in each service group[518] by **third party freight operator delay** affecting each service group. In PR08, the freight operator payment rate was calculated using Network Rail £ per delay minute payment rates weighted by delays caused by **Network Rail and all third party train operators**. This change in methodology for CP5 therefore represents a major improvement, with the freight operator payment rate being a much better representation of the actual average financial impact on third party train operators of delays caused by **freight operators**.

[517] This is lower than our draft determination CP5 freight operator payment rate of £51.98 due to the final passenger Schedule 8 Network Rail payment rates being lower than the draft ones.

[518] Payment rates under the Schedule 8 performance regime are based on weighted average lateness across a service group, but can be converted into £/ delay minute for the purposes of this calculation

Summary of CP5 benchmarks and payment rates

20.233 Table 20.5 summarises the CP5 benchmarks and payment rates. All payment rates are in 2012-13 prices.

Table 20.5: Summary of CP5 Schedule 8 benchmarks and payment rates for freight operators

	CP4	CP5	Reason for change
Network Rail benchmark	6.39 minutes delay per 100 freight operator miles, in 2013-14	7.20 minutes delay per 100 freight operator miles	Adjustment to ensure consistency with end of CP4 delay minute target
Freight operator benchmark	3.05 minutes delay per 100 freight operator miles, in 2013-14	2.37 minutes delay per 100 freight operator miles	Recalibration of freight operator benchmark to reflect delay per 100 miles caused by freight operators in 2010-11 and 2011-12, with adjustment for traffic growth
Network Rail payment rate	£19.13 per minute of delay to services which are attributable to Network Rail	£19.13 per minute of delay to services which are attributable to Network Rail	No change
Network Rail cancellation payment rate	£1,813 for each cancellation below cancellation threshold and £4,835 for each cancellation equal to or above threshold	£1,813 for each cancellation below cancellation threshold and £4,835 for each cancellation equal to or above threshold	No change
Cancellation threshold	0.41% of total number of services operated by freight operator	0.41% of total number of services operated by freight operator	No change
FOC payment rate	£37.10 per minute of delay to third party trains, attributable to the freight operator	£43.44 per minute of delay to third party trains, attributable to the freight operator	Increase due to increase in passenger Schedule 8 payment rates, partially offset by improvement in calculation methodology

Bonus payment rate

20.234 In CP4, bonus payments, paid when Network Rail or a freight operator outperforms its benchmark, are paid at rates which are 50% of the compensation payment rates. This applies to both the Network Rail payment rate and the freight operator payment rate.

20.235 In our November 2012 consultation we said that we were considering our options in relation to this, but were minded to continue to set bonus payment rates at 50% of the compensation rate. Our reason for setting the bonus payment rate at 50% in PR08 was due to concerns that a 100% bonus payment rate would represent a significant

increase compared to the previous regime, and could present a barrier to entry for small operators, or potentially make existing small operators unviable.

20.236 Responses to our consultation were in general very much against us continuing to set bonus payment rates at 50%. In CP5, bonus payment rates will be set so they are equal to compensation payment rates. This is for the following reasons:

(a) due to seasonal fluctuations in performance, even when performance is at benchmark on average throughout the year, a net payment would be made when bonus payment rates are set at 50%. We estimate that it is most likely that this net payment would be from freight operators to Network Rail. This is driven by the fact that the CP5 freight operator payment rate is considerably higher than the Network Rail payment rate; and

(b) it makes it difficult for freight operators and Network Rail to accurately incorporate Schedule 8 payments into business cases for investments to improve performance, as the magnitude of the Schedule 8 savings/ income would differ depending on whether performance is better or worse than the benchmark.

20.237 We have considered the implications on small operators and new entrants and consider the existing protection offered by incident caps and annual caps on Schedule 8 payments is adequate. We are also concerned that the expected net cost to freight operators arising from setting bonus rates at 50% would be likely to outweigh the benefits arising from freight operators not needing to pay Network Rail full bonuses for improved performance that has yet to have an impact on revenue. For CP5 we have therefore set the bonus payment rate at 100% of the compensation payment rate.

Incident cap menu

20.238 A freight operator may opt to pay Network Rail an ACS to have an incident cap on its Schedule 8 liabilities for lateness and cancellations it causes to other train operators resulting from a single incident. As a result, an incident cap protects the freight operator from the risk of significant costs arising from a particular incident. The ACS reflects the fact that performance payments to third party operators still need to be made by Network Rail even if there are no incoming payments from the freight operator because the incident cap has been reached.

20.239 In our November 2012 consultation, we questioned whether we should continue to require Network Rail to offer this protection, which is, to a large extent, insurance to freight operators in relation to incidents they cause. We stated that we were minded to remove this requirement on the basis that it is something that could in principle be provided by the private insurance market.

20.240 Responses from stakeholders expressed strong concern that this is something the private market would not be able to provide at an affordable price, particularly given that it would be a new area of cover. We have a particular concern that this could

have negative consequences on smaller operators or new entrants, whose cash-flows may be more adversely impacted from a single major incident, and therefore may be more reliant on this type of insurance.

20.241 Given there are no adverse funding implications associated with us requiring Network Rail to provide this coverage, we will therefore continue to require Network Rail to offer incident caps in return for an ACS. However, between now and the final determination we are exploring with Network Rail and the industry what data it can release to enable private insurers to enter the market.

20.242 Network Rail has produced an indicative menu of incident caps and associated ACSs, as shown in Table 20.6. The ACSs have been calculated by Network Rail using a methodology that estimates the expected cost to Network Rail of providing the incident cap, using data from the beginning of April 2010 to the end of March 2012. A contingency uplift of 10% is then applied to reflect the risk incurred by Network Rail and moral hazard (operators that cause more incidents are more likely to purchase a lower cap) that arises as a result of Network Rail providing this protection.

20.243 The ACSs are higher than in CP4. This reflects the fact that the freight operator payment rate will be higher in CP5 and therefore the cost to Network Rail of providing incident caps will also increase.

Table 20.6: Menu of Schedule 8 incident caps and corresponding ACSs for freight operators to choose from

Incident cap (minutes of delay per incident)	ACS (£ per mile)
1,000	0.1041
2,000	0.0473
3,000	0.0292
4,000	0.0215
5,000	0.0152
6,000	0.0104
7,000	0.0066
8,000	0.0037
9,000	0.0008
10,000	0.0007
No cap	None

Annual caps on Schedule 8 payments

20.244 Freight operators and Network Rail have reciprocal caps on the net annual liability they face under the Schedule 8 performance regime. These provide an important protection to freight operators by providing certainty about the maximum liabilities they could face.

20.245 For CP5, annual caps on Schedule 8 payments will remain specific to each freight operator, as the appropriate level depends on its scale of operations. Freight operators and Network Rail will still be entitled to negotiate their own reciprocal annual caps. These caps are subject to our approval, and should be set at a level with a low likelihood of being reached. This is because once an annual liability cap has been exceeded; the incentive and compensation effects of Schedule 8 are lost.

20.246 For small freight operators and new entrants, we will continue to set a default reciprocal annual liability cap of £547k, which is the same level as we set for CP4, but uplifted for inflation. We consider a small freight operator to be any operator with less than 5% market share of total freight train miles, in a given year.

20.247 All parties with a market share of total freight train miles of 5% of more in 2012-13 wishing to have an annual liability cap in CP5 will need to submit a proposal to us by 21 November 2013. These will need to have been agreed by the freight operator and Network Rail. In the event that parties disagree, we will review the submissions from both parties before making a judgement on the appropriate cap.

20.248 Since the appropriate size of an annual cap depends on the scale of operations, as in CP4, both parties will be required to update the cap at the end of the year if annual contract mileage has varied by 2.5% or more since the cap was last updated. For operators with below 5% market share, the default annual cap will remain available.

ETCS re-opener

20.249 As with the Schedule 8 for passenger operators, we will be including a re-opener in the Schedule 8 provisions for freight operators, relating to the introduction of ETCS. This is because ETCS will be implemented on some parts of the network before the end of CP5. We have designed the re-opener to be as flexible as possible since further work is needed to determine exactly how the introduction of ETCS should be reflected in the metrics of Schedule 8. More information on the re-opener is contained in paragraphs 20.180 to 20.183.

Schedule 8 for charter operators

20.250 Charter operators are currently subject to different performance arrangements compared to other passenger operators. For CP5 we will be introducing benchmarks into the Schedule 8 for charter operators to ensure financial neutrality of the Schedule 8 regime, and bring it in line with the Schedule 8 used by other types of operator. We will also be increasing the charter operator payment rate to reflect the increase in Schedule 8 Network Rail payment rates for franchise passenger operators.

20.251 The introduction of Schedule 8 benchmarks sits alongside our planned introduction of a capacity charge for charter operators, which is discussed in chapter 16 on access charges. The introduction of Schedule 8 benchmarks will reduce the impact on charter operators of the increase in the charter operator payment rate. However, we expect

the increase in the charter operator payment rate to increase the incentive on charter operators to minimise the disruption they cause to other services.

20.252 After careful consideration and consultation with charter operators, we have also decided to introduce a menu of incident cap options and associated access charge supplements (ACS) for charter operators, to replace the existing £5,524 cap, without an ACS. This proposal was explained in our August 2013 draft conclusions letter, and is further discussed in the section on incident caps below.[519]

20.253 We have also decided to introduce an annual adjustment to the charter operator benchmark to reflect traffic growth, and to introduce reciprocal annual Schedule 8 caps, consistent with freight Schedule 8. The annual caps will provide charter operators with protection against the maximum liability they face under Schedule 8.

20.254 On the basis of CP4 delays and CP5 payment rates, we estimate that combined impact of the changes we are making to Schedule 8 and charges for charter operators will result in charter operators being better off financially than with the current arrangements.

Network Rail payment rate

20.255 In PR08, the Network Rail payment rate under the Schedule 8 for charter operators was set to be the same as the Network Rail payment rate for freight operators. Ideally there would be a separate Network Rail payment rate for charter operators to more accurately reflect the actual impact of Network Rail-caused delay on charter operators' costs and revenues.

20.256 We are not aware of any evidence on the impact of delays to charter operators on long term revenue and are also mindful that it could be burdensome for charter operators if we require them to provide us with evidence on this and involve resource disproportionate to the benefit of achieving a more accurate payment rate.

20.257 As in PR08, for CP5 we will set the Network Rail payment rate in the charter operator Schedule 8 regime so it is equal to the Network Rail payment rate in the freight operator regime, at £19.13 per minute of delay (in 2012-13 prices).

20.258 This is a very slight reduction in the current Network Rail payment rate of £19.29 per minute of delay (in 2012-13 prices) and is due to there being different inflation formulae in the freight and charter operator track access contracts, which has led to the Network Rail payment rates within the freight and charter operator Schedule 8s to drift apart over time.

[519] Our 23 August 2013 consultation can be found at: http://www.rail-reg.gov.uk/pr13/PDF/charter-operators.pdf

Charter operator payment rate

20.259 The charter operator payment rate was set equal to the Schedule 8 freight payment rate in CP4. The charter operator payment rate should reflect the average impact of a minute of delay caused by a charter operator to other train operators.

20.260 There is now data available on the delay that charter operators cause to other train operators and this data has been used to calculate a specific charter operator payment rate, using the same methodology as that used to calculate the freight operator payment rate. Specifically, the charter operator payment rate has been calculated using the Network Rail £/ delay minute payment rates for each service group weighted by the proportion of third party charter operator delay affecting each service group. This results in a charter operator payment rate that better reflects the actual impact of delays caused by charter operators to other train operators than that used during CP4.

20.261 Using this improved methodology, the CP5 charter operator payment rate will be £59.35 per minute of delay. The calculation was carried out by Network Rail and has been reviewed by the reporters. The new rate better reflects the actual impact of delays caused by charter operators to other train operators and is 60% higher than the CP4 charter operator payment rate. The increase has been driven by the increase in draft Schedule 8 payment rates for passenger operators. We recognise the potential impact this increase in the charter operator payment rate would have if we were to continue with the charter operator Schedule 8 without benchmarks. Hence, for CP5, we will introduce benchmarks into the charter operator Schedule 8.

20.262 The final CP5 charter operator payment rate is lower than our draft determination CP5 freight operator payment rate of £69.31 due to the final passenger Schedule 8 Network Rail payment rates being lower than the draft ones.

Introduction of benchmarks

20.263 The aim of introducing benchmarks into the charter operator Schedule 8 is to ensure financial neutrality of the Schedule 8 regime, and to bring it in line with the Schedule 8 regimes for franchised and open access passenger, and freight operators. This is particularly important, given the large increase in the charter operator payment rate, which without the introduction of benchmarks could leave charter operators considerably worse off financially. Our intention is that the benchmarks will be calculated using the record of Network Rail and charter operator-caused delay minutes during CP4.

20.264 In its response to our August 2013 consultation, Network Rail said it thought it appropriate to include the line side fire incident on the East Coast Mainline in the calculation of the benchmarks.

20.265 Table 20.7 shows the CP5 benchmarks and payment rates for the charter Schedule 8 regime. The benchmarks have been calculated using data on delay minutes per 100 miles during 2011-11 and 2011-12, including the delay minutes due to the line side fire

incident mentioned above. The charter operator benchmark has been adjusted to reflect traffic growth since the recalibration period, using the same methodology as for the freight Schedule 8 freight operator benchmark.

Table 20.7: Summary of CP5 Schedule 8 benchmarks and payment rates for charter operators

	CP4	CP5
Network Rail benchmark	N/A	4.61 minutes delay per 100 charter operator miles
Charter operator benchmark	N/A	5.82 minutes delay per 100 charter operator miles
Network Rail payment rate (2012-13 prices)	£19.29 per minute of delay to services which are attributable to Network Rail	£19.13 per minute of delay to services which are attributable to Network Rail
Charter payment rate (2012-13 prices)	£37.42 per minute of delay to third party trains, attributable to the charter operator	£59.35 per minute of delay to third party trains, attributable to the charter operator

Incident caps

20.266 In CP4, incident caps limited the amount of compensation per incident paid by charter operators to Network Rail under the Schedule 8 regime to £5,524. The same incident cap applied to compensation paid by Network Rail to charter operators, but has rarely been employed in practice, with Network Rail compensation to charter operators typically being for minor delays. In CP4 charter operators do not pay an ACS for incident caps.

20.267 Following our November 2012 consultation on Schedules 4 & 8, we set out in our draft determination that we are minded to leave the incident cap (with no ACS) unchanged.

20.268 We published our draft determination on Schedule 8 for charter services prior to the completion of Network Rail's work on charges for charter services and associated conclusions. We subsequently discussed the PR13 package with charter operators at two workshops and received Network Rail's conclusions on charges for charter services. We also updated our analysis of the overall financial impact of PR13 for charter services.

20.269 In the light of the new information (including the reduction in the draft charter Schedule 8 payment rate calculated by Network Rail and discussion at the workshops, in our August 2013 draft conclusions letter we revisited some aspects of our draft determination with respect to Schedule 8. This included a proposal to set an incident cap menu with associated ACSs for charter operators.

20.270 As proposed in the letter, for CP5 we will be introducing an incident cap menu with associated ACSs for charter operators. This will allow operators to choose their level

of protection against costs of individual delay incidents for an associated ACS. The ACSs will be calculated so that the regime is financially neutral, but with a 10% uplift to reflect the risk Network Rail incurs through providing this protection.

20.271 In its response to our August 2013 consultation, Network Rail said it thought that it would be appropriate for the minimum cap to be set at the same level – in terms of minutes – as during CP4 and also suggested that it would be appropriate to provide a menu of caps that has a larger number of options than those set out by the ORR in its consultation, in order to ensure that the differing needs of operators would be catered for.

20.272 After careful consideration, for CP5 we will require Network Rail to offer:

(a) a cap in minutes equivalent to the current £5,524 cap (with the charter operator payment rate of £59.35, this will be equivalent to delays of around 93 minutes to other operators);

(b) a no cap/ zero ACS option; and

(c) a menu of caps that has a larger number of options, to include those offered to freight operators.

20.273 Table 20.8 below shows the incident cap and ACS menu for charter operators in CP5[520].

Table 20.8: Menu of Schedule 8 incident caps and corresponding ACSs for charter operators to choose from

Incident cap (minutes of delay per incident)	ACS (£ per mile)
93	1.30
147	1.03
500	0.56
1,000	0.41
5,000	0.14
No cap	None

Annual caps

20.274 At one of our workshops with charter operators and Network Rail, a charter operator suggested that for consistency with freight Schedule 8 we should also introduce reciprocal annual Schedule 8 caps. These would be aimed at capping the net Schedule 8 liability faced by a charter operator or Network Rail.

[520] The 147 minutes incident cap in Table 20.8 is equivalent in minutes to the reciprocal incident cap in CP4. We have included this option in the CP5 incident cap menu in order to enable charter operators to continue with the same level of incident cap in minutes, should they choose to.

20.275 We will be introducing annual caps consistent with the 'small operator' caps currently in place for the freight Schedule 8 i.e. an annual cap of approximately £547k with all charter operators treated as 'small operators', as outlined in our August 2013 draft conclusions letter.

ETCS re-opener

20.276 As with the Schedule 8 regimes for other types of operator, we will be including a re-opener in the Schedule 8 provisions for charter operators, relating to the introduction of ETCS. This is because ETCS will be implemented on some parts of the network before the end of CP5. We have designed the re-opener to be as flexible as possible since further work is needed to determine exactly how the introduction of ETCS should be reflected in the metrics of Schedule 8. More information on the re-opener is contained in paragraphs 20.180 to 20.183.

Schedule 4 possessions regime

Passenger possessions regime

20.277 The Schedule 4 passenger regime was significantly overhauled in PR08. We have not made major changes to the regime as part of this periodic review, but there are a number of aspects we have reviewed in order to improve the incentives for Network Rail to plan possessions effectively and efficiently and to reduce the impact of possession disruption to passengers and freight customers. The main issues where we have made changes are in relation to replacement bus cost compensation and the level of compensation payable to operators when Network Rail makes late changes to Type 1 possessions[521].

Bus cost compensation formula

20.278 Franchised passenger train operators receive compensation for the cost of running rail replacement bus services where train services are cancelled due to possessions. Some stakeholders raised concerns in this periodic review about whether the level of bus compensation reduces the incentive on train operators to fully explore timetable solutions when dealing with service disruption as a result of possessions and encourages them to over rely on running rail bus replacement services, instead of running trains. This is of concern as rail replacement bus services are unpopular with passengers: for example, in a Passenger Focus survey of passengers' attitudes to possessions in September 2012, 55% of passengers surveyed said they would not travel by train if it involved the use of a bus for part or all of their journey. Conversely,

[521] Type 1 possessions are possessions generally less than 60 hours in duration and which attract formulaic Schedule 4 revenue loss and costs compensation. The majority of possessions are of this type. Type 2 possessions are generally of duration above 60 hours but less than 120 hours; Type 3 possessions are greater than 120 hours. Both types receive formulaic compensation but can also claim for actual revenue losses and costs above a materiality threshold.

in industry discussions a number of train operators stated that the current formula does not fully compensate them for bus costs.

20.279 Bus cost compensation is based on estimated bus miles (EBMs) and EBM payment rates, which are the rate of compensation operators receive in £ per replacement bus mile operated. EBM payment rates are paid at two rates - one for London & South East services and one for services in the rest of the country. In our November 2012 consultation we proposed uprating EBM payment rates so that they reflect better the cost per mile of running replacement buses.

20.280 We collected data from train operators on how much bus cost compensation they received and how much they actually spent on providing replacement buses in financial years 2010-11 and 2011-12. The results are summarised in Table 20.9, based on 89% coverage of train operators surveyed. They show that franchised operators which attract the London & South East EBM payment rate were, on average, overpaid bus cost compensation by 10.7% and 5.4% in 2010-11 and 2011-12 respectively[522]. And those that attract the EBM payment rate for the rest of the country were over-paid by 9.4% and 8.2% over the same period.

Table 20.9: Percentage difference between passenger Schedule 4 replacement bus cost compensation and actual bus costs

EBM Rate	2010-11	2011-12
London & South East	10.7%	5.4%
Rest of the country	9.4%	8.2%

20.281 In our draft determination we decided to adjust bus compensation rates down by 7.9% for London & South East and 8.9% for the rest of the country, so they reflect our estimate of the real costs of providing replacement buses. In making our adjustment we calculated the average rate of bus cost compensation overpayment based on the combination of the two years' data in order to smooth out the impact of variation in the level of possessions activity between years.

Impact of removal of Bus Service Operators Grant (BSOG) payments for rail replacement bus services

20.282 Since publishing our draft determination, we have reflected the changes made by DfT, Transport Scotland and the Welsh Government in relation to the eligibility criteria for BSOG payments for rail replacement services in our determination of replacement bus compensation payment rates.

20.283 DfT does not collect data on the amount of BSOG paid specifically for rail replacement bus services (and neither the Welsh Government or Transport Scotland were able to

[522] London & South East EBM rate is £15.10 per EBM and for the rest of the country £10.15 per EBM, (2012-13 prices).

supply data on the amount of BSOG they paid). We therefore carried out our own estimate of the amount of BSOG paid based on mileage data from Network Rail's bus cost possessions payments database and publicly available estimates of bus fuel consumption rates. Based on this estimate we have revised down the amount by which we will be reducing compensation rates. We have decided to revise down bus cost compensation rates for London and South East by 5.4 % and for services in the rest of the country by 4.9%. As a result, EBM rates for London and South East services will fall from £15.10 to £14.29 and for Regional services from £10.15 to £9.66 (2012-13 prices).

20.284 We consider this decrease in EBM payment rates represents value for money for the taxpayer and removes any doubts of perverse incentives. It also will encourage train operators to drive down replacement bus costs. The removal of BSOG for rail replacement bus services increases transparency as all of the funding for train operators running replacement bus services will now come from a single source.

Access Charge Supplement

20.285 Schedule 4 payments are funded through an access charge supplement (ACS) paid to Network Rail by franchised passenger train operators in return for receipt of full Schedule 4 compensation[523]. The ACS total reflects the amount Network Rail is expected to pay out in Schedule 4 possession compensation over the control period.

20.286 Network Rail's estimate of the total Schedule 4 cost for each control period is based on planned maintenance and renewals activity volumes and a Schedule 4 unit cost per asset type (e.g. track, signalling etc.) maintained or renewed. The base Schedule 4 cost for a control period is estimated by multiplying the planned volumes of each activity by the relevant Schedule 4 unit cost. For some asset types, such as bridges and tunnels, Network Rail broke down activity volumes into a large number of distinct activities, and this breakdown is not suitable for the purposes of estimating Schedule 4 costs; for these asset types it uses forecast levels of maintenance and renewals spend as a proxy for volumes.

20.287 For CP5, Network Rail has improved its methodology for calculating the ACS by forecasting planned activity volumes at route, rather than national level. This will help to bring Schedule 4 costs closer to the actual level of possessions faced by franchised passenger operators in each area. The ACS will continue to be apportioned pro-rata amongst franchised passenger operators based on historic Schedule 4 compensation payments paid to operators.

20.288 As in PR08, Network Rail estimated the per activity CP5 Schedule 4 unit costs at a national level because of the difficulty of producing robust estimates at route level due to the variability of data between routes for certain asset types such as signalling.

[523] Open access operators can opt to pay the ACS if they wish to receive full Schedule 4 compensation.

20.289 In response to our November 2012 consultation, respondents generally approved Network Rail's approach but requested we closely scrutinise Network Rail's ACS estimate. Respondents also called for further consideration of how Network Rail might develop a means to calculate route-based Schedule 4 cost estimates for CP6.

20.290 In response to our draft determination East Coast raised a concern about the difference between the amount of ACS it paid and the amount it received in Schedule 4 payments and suggested some form of wash-up mechanism whereby operators would be refunded ACS for work not carried out by Network Rail for which it had been funded.

20.291 For the following reasons we are not convinced of the need for a wash-up mechanism. Although where possession activity is lower than expected train operators receive less in Schedule 4 payments, this is off-set because they earn higher revenues than expected due to the lower level of disruption.

20.292 Network Rail benefits from lower Schedule 4 payments where it takes fewer possessions through efficient possession planning and/ or maintenance and renewal activity. We think this acts as an important incentive for Network Rail to plan possessions efficiently, and a wash-up mechanism would weaken this incentive.

20.293 It would be difficult to separate the financial impact of fewer possessions due to efficiencies in possession management from those due to reduced activity. We consider East Coast's concerns are best addressed by ensuring Network Rail's maintenance and renewals forecasts are based on efficient and deliverable levels of activity in the first place.

20.294 Moreover as discussed above Network Rail has improved its ACS calculation methodology as part of this periodic review, a development acknowledged by East Coast. Nevertheless we intend to keep this issue under review in CP5 and we will consider this matter further for CP6 if possession payments are significantly out of line with the ACS.

Network Rail's SBP ACS submission

20.295 Network Rail provided an estimate of Schedule 4 costs as part of its SBP submission.

20.296 We have closely scrutinised Network Rail's ACS estimate and methodology. Our own engineers have assessed Network Rail's volume forecasts and pre-efficient expenditure levels to ensure that these reflected the levels of planned maintenance and renewals in Network Rail's SBP submission. We also appointed our independent reporters to carry out a detailed audit of Network Rail's ACS calculation, its use of historic possessions and forecast volumes data in calculating the ACS as well as comment on its ACS calculation methodology[524].

[524] http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php.

20.297 The audit focused on

(a) data quality; and

(b) process accuracy and reliability.

20.298 The reporters found that Network Rail's overall approach to calculating the ACS by calculating Schedule 4 unit costs based on historic data and applying forecast CP5 volumes was an appropriate methodology with no obvious alternative.

20.299 The reporters concluded that the computations within the spreadsheet were accurate, finding only minor errors which were subsequently corrected by Network Rail but which did not have a material impact on the ACS calculation. The reporters made a number of recommendations to improve data input and handling in the model and on improving its functionality.

20.300 The reporters suggested that Network Rail should explore the feasibility of using multiple years' historic possessions data to represent unit costs for future control periods.

20.301 There exists the risk that if Network Rail does not carry out the amount of maintenance and renewal activity it forecast when calculating the ACS it will not need as many possessions and will gain a windfall from not having to pay out as much Schedule 4 compensation. Conversely, it may pay out more in compensation than it receives in ACS payments if Network Rail carries out more maintenance and renewals activity than it forecast, and consequently needs more possessions.

20.302 We carried out our own assessment of the volumes data used in Network Rail's ACS calculation and found this to be broadly consistent with our assessment of Network Rail's maintenance and renewal programme for CP5. We made minor adjustments to reflect inconsistencies.

20.303 The reporters did not assess volumes data used in the ACS model directly as this was subject to a separate assessment. In summary this separate volumes assessment found elements of best practice in Network Rail's SBP submission but also indicated a degree of uncertainty about the accuracy and consistency of the data as it is drawn from a wide range of sources.

20.304 Subsequent to its SBP submission, Network Rail updated its ACS calculation to take account of the final CP5 Schedule 8 Network Rail payment rates, as discussed in the Schedule 8 section above and made changes to the level of notification discount factors as a result of revised late time multipliers.

20.305 At the time of the draft determination, Network Rail informed us that it had not included an ACS for Heathrow Connect in its ACS calculation. It has now supplied its ACS estimate for Heathrow Connect of approximately £7,000 per annum. We have reflected this in our final determination.

20.306 As a result of changes to our draft Schedule 8 payment rates, the amount by which we will reduce EBM rates and other adjustments discussed above, Network Rail will need funding of £976m for its passenger Schedule 4 costs over CP5, compared with its SBP estimate of £710m. This represents an increase of 37% on its SBP submission.

20.307 Network Rail projected Schedule 4 costs to be £168m for the final year of CP4. This compares with our final determination average of £195m per year during CP5. The difference is due to the increase in Schedule 4 payment rates, but there is also an increase in planned maintenance and renewals activity in CP5 compared to CP4.

20.308 In CP5, there will be a disproportionately large increase in Schedule 4 costs in Scotland, compared with Great Britain as a whole. This is due to the increase in the amount of renewal activity in Scotland. The largest increase is in signalling renewals volumes, which in CP5 will be almost 700% higher than in CP4.

20.309 Table 20.10 sets out our final determination of Network Rail's Schedule 4 costs and ACS for CP5. Table 20.11 sets out the Schedule 4 ACS by train operator.

Table 20.10: Our final determination Network Rail's passenger Schedule 4 costs and ACS income for CP5

£m (2012-13 prices)	CP4	CP5					CP5
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain							
Franchised passenger Schedule 4 costs	(168)	(191)	(202)	(207)	(188)	(187)	(976)
Franchised Passenger ACS	141	191	202	207	188	187	976
Total	**(26)**	**0**	**0**	**0**	**0**	**0**	**0**
England & Wales							
Franchised passenger Schedule 4 costs	(155)	(173)	(180)	(180)	(168)	(167)	(867)
Franchised passenger ACS	137	173	180	180	168	167	867
Total	**(18)**	**0**	**0**	**0**	**0**	**0**	**0**
Scotland							
Franchised passenger Schedule 4 costs	(13)	(19)	(23)	(28)	(21)	(20)	(110)
Franchised passenger ACS	4	19	23	28	21	20	110
Total	**(9)**	**0**	**0**	**0**	**0**	**0**	**0**

Note to Table 20.10:

1. CP4 2013-14 Schedule 4 figures are projections contained within Network Rail's SBP submission.
2. Numbers may not reconcile due to rounding.

Table 20.11: Our final determination of Schedule 4 ACSs for passenger operators

£m 2012-13 prices	CP5					CP5
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Arriva CrossCountry	15.1	15.4	15.3	14.2	13.9	73.9
Arriva Trains Wales	10.5	6.3	9.8	5.4	4.6	36.7
c2c	2.3	2.8	3.2	2.5	2.2	12.9
Chiltern Railways	0.8	0.8	0.9	0.9	0.7	4.1
East Coast	25.8	32.5	32.9	29.9	36.7	157.9
East Midlands Trains	9.7	8.7	7.8	6.8	5.9	38.9
First Capital Connect	7.0	7.9	7.1	6.7	7.6	36.2
First Great Western	26.1	24.0	24.2	21.6	23.0	118.9
First ScotRail	7.0	8.5	10.3	7.7	7.4	40.9
First/Keolis Transpennine	4.9	5.6	5.6	5.5	5.4	27.1
Greater Anglia	12.0	14.6	16.9	13.2	11.4	68.0
Heathrow Connect	0.01	0.01	0.01	0.01	0.01	0.03
London Midland	5.1	5.3	5.4	5.5	4.6	26.0
London Overground	3.6	4.1	4.3	3.6	3.6	19.2
Merseyrail	1.5	1.5	1.6	1.6	1.3	7.4
Northern Rail	6.2	6.9	6.9	6.9	6.8	33.8
South West Trains	12.5	11.9	13.6	15.4	11.5	64.9
Southeastern	12.7	15.1	11.8	12.1	11.9	63.6
Southern Railway	10.4	11.3	9.3	9.2	11.7	51.9
Virgin (West Coast)	18.1	19.3	20.6	19.3	16.7	94.0
Total	**191.2**	**202.5**	**207.5**	**188.2**	**187.0**	**976.3**

Note: Numbers may not reconcile due to rounding.

Notification discount factors

20.310 As discussed above, Network Rail receives a discount on the amount of Schedule 4 revenue loss compensation it pays to franchised passenger train operators for early notification of planned possessions; this is known as the notification discount factor[525]. The discount reflects the reduced impact on train operators' revenues when passengers receive early notice of service disruption due to possessions.

20.311 There are three levels of notice (known as notification discount thresholds) and the amount of discount differs for each threshold. Table 20.12 summarises the notification factors applied at each notification threshold for the majority of rail services as set at PR08. Notification discount thresholds are the same for all franchised train operators, whereas the level of discount varies slightly depending on the characteristics of particular services.

Table 20.12: Passenger Schedule 4 CP4 Notification factors and thresholds

	By New Working Timetable[526]	By 22 weeks before possession[527]	By Applicable Timetable[528]
Service groups with late time multiplier[529] of 2.5	55% of MRE[530] Payable	70% of MRE Payable	85% of MRE payable
Service groups with late time multiplier 5.1/6.5	45% of MRE Payable	65% of MRE Payable	85% of MRE payable

20.312 Notification factors differ according to the late time multiplier used to calculate the Network Rail Schedule 8 payment rates.

20.313 The higher the late time multiplier, the more passengers are inconvenienced by unscheduled delay relative to timetabled increases in journey time, and therefore, the greater benefit to passengers of early notification of possessions. As discussed above, late time multipliers vary for different types of passenger journey and have been updated for PDFH 5.1.

[525] Defined as percentage of marginal revenue effect (MRE) payable.

[526] The version of the timetable issued 26 weeks before it comes into operation. It broadly reflects the earliest operators are able to inform passengers of planned service disruption.

[527] Notification by this point allows the possession to be reflected in the informed traveller timetable.

[528] The timetable for any day as issued at 10pm, the previous night.

[529] Formerly known as delay multipliers.

[530] MRE refers to the Marginal Revenue Effect. This is the amount of long-term revenue estimated to be lost by a passenger operator per minute of lateness per passenger. The revenue is lost because a proportion of passengers switch away from travelling by rail because of delays. The Network Rail payment rate therefore reflects the MRE.

20.314 As part of the Schedule 8 recalibration, Halcrow calculated an average late time multiplier for each service group, which is the weighted average of the late time multiplier for passenger journeys within that service group. We have used the new late time multiplier values in setting notification discount thresholds.

20.315 Table 20.13 sets out the range of late time multipliers for which respective notification discount factors will apply.

Table 20.13: Passenger Schedule 4 CP5 revised notification factors for service groups, by late time multiplier

Average late time multiplier	By New Working Timetable	By 22 weeks before possession	By Applicable Timetable
4.3 or higher	40% of MRE Payable	63% of MRE Payable	85% of MRE Payable
3.4 to 4.2	45% of MRE Payable	65% of MRE Payable	85% of MRE Payable
2.8 to 3.3	50% of MRE Payable	68% of MRE Payable	85% of MRE Payable
2.7 or less	55% of MRE Payable	70% of MRE Payable	85% of MRE Payable

Additional protection for late changes to possession plans

20.316 In response to our May 2011 and December 2011 consultations, a number of franchised passenger train operators said that currently Schedule 4 incentivises Network Rail to book possessions early in order to receive the maximum discount, even where the work to be undertaken is not very certain. Train operators have argued that as a consequence too many possessions are poorly planned and/ or subject to late notice changes or cancellations. These late changes, they argue, impact on franchise operators in terms of reputational damage and because they incur direct costs that cannot be recovered under Schedule 4, if services are reinstated.

20.317 It is right that Network Rail is encouraged to inform operators about possessions as early as possible; provided that they are not booked so far in advance that they cannot be planned properly. We are aware that there is sometimes a misperception that the cause of Network Rail booking possessions too far in advance is principally due to the notification discount factors and thresholds within Schedule 4, in particular where the maximum discount threshold is set. Possessions are often planned long before the first notification discount threshold, which is set at publication of the new working timetable.

20.318 It is our view that it is Network Rail's timetable and engineering planning process and, in particular, the timescales for completing the Engineering Access Statement that are the primary drivers of some possessions being booked very far in advance. We consider changes to the timetable planning process would be more effective in addressing this problem than a change to the first notification discount threshold within Schedule 4. Changes to the timetable planning process are dealt with under the Network Code and as such are not part of this periodic review.

20.319 We do, however, think it is right that operators should be compensated for costs incurred where cancellations or late changes are made to possessions by Network Rail. In order to recover these additional costs incurred and also act as an incentive on Network Rail to plan possessions more carefully at the outset, ATOC proposed extending the scope of the protection provided by paragraph 2.9 of Schedule 4[531] to enable the recovery of direct costs related to amended or cancelled Type 1 possessions. ATOC suggested that the threshold for triggering a claim should be set at £5,000 per possession[532].

20.320 Subsequent to our November 2012 consultation, Network Rail proposed that this protection should be based on a liquidated damages regime to reduce transaction costs and uncertainty. Network Rail consulted with industry stakeholders in June 2013[533] but as a result of responses to its consultation has decided not to pursue this proposal in favour of the claim based approach described above[534].

20.321 We have decided to increase the protection provided by paragraph 2.9 of Schedule 4 to enable the recovery of direct costs related to amended or cancelled Type 1 possessions, for cancelled possessions where the resulting costs incurred are £5,000 or more.

20.322 Network Rail requested additional funding of approximately £1m per annum to cover the costs of compensation for late possession cancelations. We do not agree Network Rail should receive funding for the cost of cancelled possessions compensation during CP5. We do not consider there is currently enough available evidence on which Network Rail can rely to provide a robust estimate of the likely cost of paying compensation for late cancellations of possessions. Crucially, we also do not consider Network Rail has provided enough evidence on the likely number of late cancelled possessions or of the proportion of late cancellations that are out of Network Rail's control. In the absence of evidence to the contrary we consider the majority of late notice cancellation to Network Rail's possessions to be under its control.

20.323 Overall, we consider the amount of payments under the new protection is likely to be relatively small in relation to Network Rail's total Schedule 4 funding. We consider the

[531] In broad terms, under paragraph 2.9, where a booked possession is changed from one type to another (or even cancelled entirely), and the affected operator's compensation rights are limited to what would have been available as if the new type of possession had been booked in the first place. If the operator has already committed or incurred reasonable costs before the amendment, however, it may still recover those, but only to the extent that the same would have been recoverable for the original type of possession anyway.

[532] For Type 2 and 3 possessions, the threshold for claiming additional compensation is £10,000. We have set the threshold for Type 1 possessions at £5,000 as this is closer to the typical level of cost faced by operators where cancellations or changes to Type 1 possessions are made at short notice.

[533] http://www.networkrail.co.uk/using-our-network/on-train-metering/cancellation-of-consultation-type-1-possessions.pdf?cd=1.

[534] http://www.networkrail.co.uk/PR13/conclusions-on-compensation-for-cancelled-type-1-possessions.pdf.

issue of whether or not additional funding is required and what amount should be left until the next periodic review, where any appropriate funding could be estimated based on robust data in the light of experience of how the new scheme has operated over CP5.

20.324 We do not agree with the suggestion made by some train operators that the enhanced protection for late cancellation of possessions available in CP5 should be extended to include compensation for revenue loss. We recognise that even where a full timetable is reinstated, there is likely to be a proportion of passengers who would have made alternative travel arrangements or decided not to travel at all even though train services would now run.

20.325 However, currently there is not a robust methodology for estimating any revenue effect under these circumstances. We think it more appropriate to consider how we might extend protection for revenue loss based on experience of how the new cost compensation regime has worked over CP5.

Sustained planned disruption

20.326 The sustained planned disruption (SPD) mechanism is designed to protect train operators from instances where there is severe disruption caused by possessions over a sustained period. Additional compensation for SPD is triggered when the impact of severe disruption crosses a pre-defined level (in terms of revenue lost and increased costs) at which point train operators may claim additional revenue/ cost compensation above that covered by the liquidated sums payable under Schedule 4.

20.327 As part of the Schedules 4 and 8 working group, papers submitted by both Network Rail and ATOC agreed that there was no desire for a major change to the existing system apart from clarification of the contractual wording to provide greater clarity between franchised passenger operators and Network Rail over the interpretation of the SPD provisions. ATOC in particular stated that different interpretations of contractual provisions relating to the SPD mechanism can make claiming compensation more contentious and difficult to price than ought to be the case.

20.328 We have decided to make minor changes to the SPD provisions within the passenger track access contract to ensure that they are consistent with the purpose of the SPD mechanism as determined at PR08 and that criteria set out for claiming additional revenue loss and cost compensation are clear and unambiguous to all parties. These changes have been included in our revised drafting of the template track access contracts, on which we consulted in July 2013[535].

Revenue loss formula

20.329 In our November 2012 consultation, we also considered making changes to the replacement bus revenue formula aspect of Schedule 4 to address anomalies in how

[535] http://www.rail-reg.gov.uk/pr13/PDF/pr13-implementation-consultation.pdf

the revenue loss formula compensates franchised passenger train operators where replacement buses are used as substitutes for cancelled train services. We have decided not to make changes to this aspect of Schedule 4. This is because the 'average regime' nature of Schedule 4 means it is likely to result in cases where it over or undercompensates operators, and we are keen not to make changes unless they are likely to result in real benefits. This is supported by responses to our November 2012 consultation and in discussions with the Schedules 4 and 8 industry working group.

Freight possessions regime

20.330 Freight operators receive compensation within Schedule 4 for planned disruption. Compensation for planned disruption notified before T-12[536] is based on three tiers of disruption, each tier representing different levels of disruption faced by freight operators. Flat rate liquidated sums are paid for the first two tiers, with the possibility of additional actual costs / losses available for the most disruptive possessions. The criteria for possession types and compensation rates (2012-13 prices) for each tier is set out below in Table 20.14. Unlike franchised passenger operators, freight operators do not pay an ACS in order to be able to receive compensation under Schedule 4. The expected costs of freight Schedule 4 are instead funded by the government as part of Network Rail's funding requirement.

[536] T-12 refers to twelve weeks before the date the service is planned to depart from its origin.

Table 20.14: Structure of freight Schedule 4 possessions regime

Possession notified before T-12	Possession notified after T-12
Category 1 compensation - £300 per service • Additional end to end journey distance greater than 10 miles; or • Planned departure time from Origin differs by more than 60 minutes; or • Planned arrival time at Destination differs by more than 60 minutes; or • More demanding length or weight restrictions imposed.	**Service variation - £596 per service** • Additional end to end journey distance is greater than five miles; or • The addition of at least one Planned reversing movement; or • More demanding length, weight or gauge restrictions imposed; or • The use of at least one additional locomotive; or • The use of diesel instead of an electric locomotive is required; or • Planned departure time from Origin differs by more than 30 minutes; or • Planned arrival time at Destination differs by more than 30 minutes; or • The service is treated as a train operator variation request.
Category 2 compensation - £800 per service • The affected service is cancelled; or; • More demanding gauge restrictions; or; • The use of at least one additional locomotive is required; or • The use of a diesel locomotive as a substitute for an electric locomotive is required.	**Late Notice - £1,566 per service** • The service is cancelled.

Possession notified before T-12	Possession notified after T-12
Category 3 - possibility of actual costs/losses in addition to liquidated damages • Access from Origin or to Destination is blocked (incl. where a suitable gauge cleared route is not available for longer than 60 hours); or • Any of the freight conveyed on the service has to be transported by other means; or • The use of at least one additional locomotive is required; or • The use of a diesel locomotive as a substitute for an electric locomotive is required.	**Category 3 - possibility of actual costs/losses in addition to liquidated damages** • Access from Origin or to Destination is blocked (incl. where a suitable gauge cleared route is not available for longer than 60 hours); or • Any of the freight conveyed on the service has to be transported by other means; or • The use of at least one additional locomotive is required; or • The use of a diesel locomotive as a substitute for an electric locomotive is required.

20.331 Currently, freight compensation is set at a level broadly reflecting the amount paid out under Part G of the Network Code prior to PR08. (The Schedule 4 provisions under Part G were removed when Schedule 4 was overhauled as part of PR08.)

20.332 Freight operators consider that this level of funding no longer reflects the costs incurred due to possessions and that we should adopt a different basis for setting compensation rates.

20.333 Currently Network Rail is funded around £8.2m per annum (2012-13 prices) to compensate freight operators for disruption due to maintenance and renewal possessions. This is funded though the fixed track access charge (FTAC) or network grant in lieu of the FTAC. It remains open for freight operators to receive increased Schedule 4 payment rates in return for paying an ACS.

20.334 In our November 2012 consultation, we stated that we were not minded to increase the level of funding for the freight regime unless we received compelling arguments as to why we should do so.

20.335 Since then we have received information from Network Rail about the forecast levels of possession activity, and therefore the disruption freight operators are likely to face during CP5. Based on this information, freight operators are likely to face a considerable increase in the level of disruption compared to CP4. If we were to keep the level of funding constant, this would mean compensation rates for freight operators would fall by approximately 30%.

20.336 We have assessed the information supplied by Network Rail about the forecast level of possessions disruption faced by freight operators in CP5 and found this to be correct.

20.337 We consider such a forecast 30% fall in compensation rates would significantly reduce the incentive on Network Rail to limit the amount of disruption faced by freight operators. It would also lead to a significant reduction in the levels of compensation received by freight operators. We therefore have decided to maintain the current compensation rates in real terms; adjusting the level of funding accordingly to reflect the forecast increase in activity levels.

20.338 Also at the time of the draft determination Network Rail informed us that it had not included funding for service variation cancellations for freight services. It subsequently supplied its estimate to cover these payments at £612,000 per annum. We revised this amount down by 10%, to £551,000 per annum because Network Rail used data from 2012-13 in its calculation which is not consistent with the base years 2010-11 and 2011-12 used for updating the other elements of Schedule 4 and 8. We have reflected this amount in our final determination.

20.339 As a result of these two changes, the average annual freight Schedule 4 maintenance and renewal possessions compensation funding will increase to £12.3m per annum, an increase of around 49%.

20.340 Table 20.15 summarises our determination of the level of funding Network Rail will require in CP5 to cover its expected freight Schedule 4 costs.

Table 20.15: Our determination of Network Rail's freight Schedule 4 funding requirement for CP5

£m (2012-13 prices)	CP5					CP5
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Great Britain	12.0	12.6	13.2	11.9	12.0	**61.6**
England & Wales	10.7	11.0	11.2	10.4	10.5	**53.8**
Scotland	1.3	1.6	2.0	1.5	1.4	**7.8**

Note: Numbers may not reconcile due to rounding.

Summary of main differences between CP4 and CP5

20.341 Table 20.16 summarises the main changes in CP5 compared to CP4

Table 20.16: Main changes in to Schedules 4 and 8 in CP5, compared to CP4

Schedule and operator type	What has changed?
Schedule 8 for franchised and open access passenger operators	• Payment rates have been updated to reflect the best available evidence on the impact of performance on fare revenue; • Benchmarks have been updated to reflect our expectation of performance in CP5; and • Passenger charter element of Schedule 8 has been removed.

Schedule and operator type	What has changed?
Schedule 8 freight operators	• Freight operator payment rate has been updated to reflect the increase in passenger Schedule 8 payment rates; • Benchmarks have been updated to reflect our expectation of performance in CP5; and • Bonus payment rates will be set at same level as compensation payment rates.
Schedule 8 for charter operators	• Introduction of benchmarked Schedule 8 to be consistent with Schedule 8 for freight operators; • Charter operator payment rate has been updated to reflect the increase in passenger Schedule 8 payment rates; • Charter operators and Network Rail will be given reciprocal annual caps on Schedule 8 payments; and • Charter operators will be required to pay an ACS to receive incident caps, with charter operators being able to choose from a menu of incident caps and associated ACSs.
Schedule 4 for franchised passenger operators	• Schedule 4 revenue loss payment rates are being updated to reflect the increase in Schedule 8 payments; • Replacement bus cost compensation rates have been reduced to reflect actual cost of operating replacement buses; • Notification discount factors have been updated to reflect revised late time multiplier values; • The Schedule 4 ACS has been updated to reflect the change in Schedule 4 payment rates and notification discount factors; and • Compensation for costs incurred as a result of Network Rail cancelling or amending possessions at late notice has been extended to Type 1 possessions.
Schedule 4 for freight operators	• Network Rail's funding to cover the expected cost of freight Schedule 4 compensation has been increased to maintain compensation payment rates at CP4 levels in real terms; and • Network Rail will be funded to cover the expected cost of service variations.

Implementation

20.342 On 8 November 2013, we will be circulating to Network Rail and train operators the CP5 updates to the elements of the appendices and annexes of Schedules 4 and 8 that are specific to each train operator. This includes the updates Schedule 8 benchmarks, payment rates and SPP thresholds and the Schedule 4 access charge supplements and notification discount factors. This is in order for Network Rail and train operators to check there are no errors by 22 November 2013 in advance of us publishing the review notices on 20 December 2013.

20.343 The one exception to this is the annual caps in Appendix 1 of Schedule 8 of the freight operator track access contracts. As explained in paragraphs 20.244 and 20.248, all

freight operators with a market share of total freight train miles of 5% or more in 2012-13 wishing to have a reciprocal annual cap will need to submit a joint proposal with Network Rail to us by 21 November 2013. Freight operators with a market share lower than this will receive a default reciprocal annual cap of £547k.

20.344 More information on the implementation of our determination is contained in chapter 22.