Annex A: Specific consultation questions

A.1. Whilst we are consulting on our decisions in this draft determination as a package, and stakeholders may comment on any aspect of it, we would like to draw attention to certain issues in this document on which we would particularly welcome views. These are as follows:

(a) our proposed approach to the volume incentive in CP5 (as set out in paragraphs 19.46-19.79 above), including the approach to setting growth baselines and a ceiling and floor on payments;

(b) our proposals for certain aspects of the route-level efficiency benefit sharing (REBS) mechanism (as set out in paragraphs 19.10-19.22), comprising:

(i) our proposed approach to setting REBS baselines;

(ii) the method for calculating and reporting REBS in CP5; and

(iii) which parts of Network Rail's income and costs should be included in REBS;

(c) whether the alternative proposal on the capacity charge for freight operators proposed by the Rail Freight Operators' Association should be adopted as a substitute to retaining the existing capacity charge in CP5 (see paragraphs 16.110-16.116). We also seek views on:

(i) whether this mechanism should be adopted only for freight operators or whether it should also be adopted for passenger open access and/or franchised passenger operators; and

(ii) what the implications of its adoption for these operators would be;

(d) whether, for Network Rail to retain the benefit of an efficient renewals underspend, it should need to show that it has successfully implemented a package of improvements on asset management and improved its reporting systems (see paragraph 12.101 in the financial framework chapter);

(e) whether a value based methodology for adjusting for the non-delivery of outputs would be appropriate (see paragraph 12.107 in the financial framework chapter);

(f) in order to improve transparency and provide better incentives on Network Rail without overly complicating the financial framework, we are proposing to remove the 'internal/Network Rail' investment framework and use an amended version of the RAB roll forward process to improve the incentives on Network Rail, as discussed in paragraphs 12.136-12.147;

(g) Network Rail's cost of capital for CP5 and in particular the pre-tax cost of capital that will be used for investment framework schemes, as discussed in the impact of financial framework on financial parameters chapter (chapter 13); and

(h) our approach to financial monitoring in CP5, as discussed in the monitoring, enforcement and reporting chapter (chapter 23).

Annex B: Decision on a freight specific charge for biomass

Introduction

B.1. In chapter 16, we discuss the introduction of a freight specific charge as a mark-up on variable usage charges for certain commodities – coal for the electricity supply industry (ESI coal), iron ore and spent nuclear fuel. This would:

(a) make charges more cost-reflective so that freight bears a higher proportion of the costs it imposes on the rail network and so that the sector can provide more challenge on the efficiency and costs of its operation;

(b) allocate government subsidy more efficiently by moving it from areas where it has little impact on behaviour; and

(c) further our strategic objective of a more dynamic and commercially sustainable industry.

B.2. On 15 February 2013, we consulted on whether the freight specific charge should be applied to biomass on the same basis as that which we had concluded should apply to other commodities. Consistent with the treatment of other market segments, we also consulted on whether biomass should pay a freight-only line charge. We had previously (May 2012) said we would not levy a charge on biomass but would revisit the policy to coincide with the Department of Energy and Climate Change's (DECC's) recalculation of subsidy from 2017. We changed this stance in our January 2013 freight decision document because respondents to the May 2012 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.

B.3. This annex considers the responses to the February 2013 consultation and explains our decision on biomass.

Background to the biomass sector

B.4. The biomass market is currently small and there is greater uncertainty than there is for other commodities about its prospects and about the impact of increases in track access charges on demand for it.

B.5. The UK has a legally binding target under the EU Renewable Energy Directive to increase the share of renewables in final energy consumption. To meet this target, certain types of power generator that use biomass are eligible for support under the Renewables Obligation legislation and other arrangements in Scotland. They are also eligible for support under 'contracts for difference' (CfDs).

B.6. Biomass generation is assisted by qualifying for Renewables Obligation Certificates (ROCs) that generators can sell to electricity retailers, who are obliged to buy them to cover a proportion of their sales. In July 2012, DECC published its proposals for banded support under the Renewables Obligation[414] and, in October 2012, a fact sheet on "Grandfathering and cost control for biomass co-firing and conversions"[415]. These clarified the likely level of support for biomass in England & Wales under ROCs.

B.7. Biomass generation can instead be assisted through Feed-in Tariffs and, in the case of larger schemes, CfDs with the government that guarantee the generator a fixed price rather than the variable market electricity price. DECC will be announcing the strike price for biomass CfDs later this year.

B.8. Large biomass electricity generation is normally in power stations built to be coal-fired. Electricity generation from coal is likely to be reduced considerably from present levels as in 2016 it will be restricted to the few stations that have installed emission reduction systems.

B.9. Most existing dedicated biomass power stations have been developed on a small scale, and so are likely to purchase biomass from their local areas and make little use of the rail network. Rail transport is used for biomass that is a feedstock for coal-fired power stations through 'co-firing', whereby a small quantity of wood pellets or other

[414] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42852/5936-renewables-obligation-consultation-the-government.pdf.

[415] http://webarchive.nationalarchives.gov.uk/20121217150421/http://www.decc.gov.uk/media/viewfile.ashx?filetype=4&filepath=11/meeting-energy-demand/renewable-energy/6598-fact-sheet-grandfathering-and-cost-control-for-bi.pdf&minwidth=true.

forms of biomass is blended with coal in the combustion process. Some power generators have announced plans for increasing its use considerably through converting power stations entirely to biomass use. Drax, the UK's largest power station, has explained that it is converting three of its six generating units to burn biomass; the first in the second quarter of 2013 and the second a year thereafter. Eggborough plans to convert entirely by 2016.

B.10. The potential for expansion of biomass demand from the ESI is considerable. A report for the Committee on Climate Change by Mott MacDonald in October 2011[416] estimated that a full conversion programme running at high load would require more fuel (80mt/year) than is estimated to be available, which could be about 45mt/year. For comparison, in 2010-11 1.5mt was burnt in co-firing plants and 2.9mt in dedicated biomass plants. Present ESI plans may mean that more than 20mt of biomass will be burnt each year in converted stations by mid-CP5, most of it carried by rail.

Responses to the consultation

B.11. Our consultation ended on 28 March 2013 and we received 27 replies. We have also held meetings with DECC, the Rail Freight Group (RFG), the three power companies planning to convert Drax, Eggborough and Rugeley to biomass and GB Railfreight. As well as responding to our consultation, Eggborough also published an open letter opposing the application of the charge.

B.12. Most responses opposed the imposition of a freight specific charge on biomass. DECC, Drax, Centrica, Eggborough Power Station, GDF Suez (International Power), Lynmouth Power Station, Eon, Energy UK, RFG, the Freight Transport Association (FTA), Freightliner, DB Schenker, GB Railfreight, Direct Rail Services, Bristol Port Company, The UK Major Ports Group, Railfuture, Caithness Transport Forum, WH Davis and, to a lesser extent, Network Rail, Centrica and Unite were against it. The representations made included the following points.

(a) The increase in costs the charge would produce would materially affect the viability of investment in biomass electricity power station conversions that are

[416] http://archive.theccc.org.uk/aws2/Bioenergy/Mott%20MacDonald%20biomass%20conversion%20final%20for%20publication.pdf.

necessary to further government objectives in decarbonising, diversifying and securing the supply of electricity.

(b) Biomass electricity generation relies on government subsidy (either through Renewables Obligation Certificates or under Electricity Market Reform Contracts for Differences) and so, almost by definition, cannot bear an additional charge.

(c) The Renewables Obligation banding is already set and cannot be revised to accommodate this additional cost.

(d) If the CfD strike price is changed to accommodate it, it will place a burden on energy customers.

(e) Biomass conversion for generation is an emerging market that requires substantial capital investment. It relies on long-term contracts. This additional charge may have the effect of halting a number of biomass projects.

(f) The charge runs counter to government policy.

(g) Biomass is not directly comparable to coal. It requires both a subsidy and substantial investment to convert a power station to burn biomass.

(h) Biomass for large scale generation is a fledgling industry that requires substantial investment. It cannot use the existing coal infrastructure so the two fuels are operating in different markets.

(i) Independent generators have long-term Power Purchase Agreements which limit their ability to absorb cost changes. Increasing costs risks jeopardising deployment of renewable electricity. Biomass generators are establishing long-term feedstock supply contracts.

(j) Large scale biomass generators are captive to rail because road transport would involve more greenhouse gas emissions and loss of subsidy. Biomass would be disadvantaged by a charge per tonne km.

B.13. CoalPro, EDF and RWE supported the imposition of a freight specific charge on biomass, given ORR's previous decision to introduce the charge for coal and spent nuclear fuel. They argued that:

(a) biomass competes directly with coal and to put a charge on only one would distort the market;

(b) it is fair and reasonable for power stations to face the full cost of conversion; and

(c) it is not up to ORR to subsidise particular forms of generation: EDF said, "Any subsidies for biomass should come from a single source (e.g. the Renewables Obligation or the planned Feed-in tariffs with Contracts for Difference), where they can be effectively monitored and reviewed by the Government as required."

B.14. Our method of calculating the charge, by analogy with coal, was said by some respondents not to be transparent. It was claimed that it might also be inaccurate because biomass has a lower calorific value than coal, is less dense and converts heat to electricity less efficiently: higher volumes will need to be transported and trains are likely to be longer and more frequent and may have a lower net to gross ratio: there may also be a different supply pattern. Network Rail said that, as the biomass market is in its infancy, setting any freight-specific charge for biomass on this basis could risk being prone to undue levels of uncertainty.

B.15. One stakeholder told us that, while it understood the need for the access charges it paid to be cost reflective, it was concerned that it had not been much involved in the process by which the cost estimates had been arrived at. The same stakeholder was also concerned that CFD strike prices, which in principle could have reflected the freight specific charge, had now been fixed by DECC until 2019, so that the new charge could not be passed on, with the potential to affect future investment decisions. It noted that a charge introduced in PR18 would not be subject to the same difficulty (as it would not come until 2019), and that this would also allow time for further discussions about the appropriate level of cost for recovery through the charge.

Legal considerations

B.16. We set out in detail the legal framework for a mark-up in our January 2013 conclusions document[417]. In particular, in paragraphs 4.29 and 4.30, we set out the test for a mark-up which we have applied in accordance with the Access and Management Regulations and our statutory duties.

[417] *Conclusions on the Average Variable Usage Charge and a Freight Specific Charge*, ORR, January 2013, available at http://www.rail-reg.gov.uk/pr13/PDF/freight-conclusions-jan-2013.pdf.

B.17. The mark-up must be efficient. An important aspect of this is the extent to which biomass rail transport competes with road. We consider that the charge is unlikely to divert significant biomass traffic to roads because we have been told that small biomass plants whose fuel is locally sourced are likely to use road anyway and larger plants need to use rail transport to keep emissions to sufficiently low levels to qualify for subsidy.

B.18. It must also not exclude the use of the infrastructure by biomass: it has been put to us that much of the likely biomass rail traffic depends on a small number of future investment decisions that may be prevented by the imposition of a charge. This is discussed below as is the question of whether a reduction of traffic would be efficient.

B.19. We have little data on the costs likely to be imposed on the infrastructure by biomass and our consultation assumed the charge on biomass would be levied at the same rate as for coal. Network Rail's consultants, LEK, have since done further work and produced estimates for biomass avoidable cost per gross tonne mile that are lower than those for coal. We are therefore in a position to set a charge transparently on the same basis as for other commodities, albeit perhaps with a higher degree of uncertainty.

B.20. The treatment of biomass must be non-discriminatory: a decision whether to impose a charge would apply by market segment not by operator and, both in taking that decision and in setting a level, we would be applying the same principles and methods as in other market segments.

Economic considerations

B.21. The main argument put forward by respondents to the consultation who opposed the charge was that there would be a danger that schemes to convert coal-fired power stations to biomass would not go ahead if the charge was imposed. Each conversion scheme is a large investment that would represent a large part of the market and so, if this happened:

(a) the sector would be excluded from using the infrastructure;

(b) freight traffic could decline as coal-fired stations closed and coal traffic was not replaced by the larger volumes of biomass needed to produce the same energy;

(c) the government's targets for renewable energy would be harder to achieve, arguably damaging sustainable development;

(d) there may be greater threat to the security of supply of electricity if significant amounts of coal-fired production being closed are not replaced by biomass; and

(e) economic activity, including investment and job creation, would not take place.

B.22. Key considerations in the decision are therefore whether applying the freight specific charge to biomass would create a significant risk that planned conversions would not take place either:

(a) to the extent of excluding biomass from the infrastructure; or

(b) to the extent of resulting in a significant fall in biomass freight traffic.

B.23. The impact of the charge on the cost of biomass generation is small. Our consultants NERA estimated that, assuming that biomass is transported on average 100 km by rail, an increase in access charges of £10 a thousand net tonne km, equivalent for coal to £8/kgtm – twice the rate proposed in our February 2013 consultation, would increase the variable cost of biomass generation by around 60p/MWh. The proposed charge would increase it by around 30p/MWh. If the journey were longer it might raise it by 50p/MWh.

B.24. This compares with total costs for biomass conversion calculated by Mott MacDonald in their October 2011 report ranging from £80 to £110/MWh, depending mainly on the intensity of use of the station. An October 2011 Arup report[418], commissioned by DECC and used in its calculations, has total prices of £106 in the low case, £115-6 in the medium case and £126-9 in the high case. DECC's own estimate in its July 2012 paper is £105/MWh.

B.25. A similar comparison can be made on the delivered price of biomass. Mott MacDonald's assumptions imply a central estimate of £115/tonne. DECC's July 2012 paper has a fuel cost of £79/MWh, which is consistent with a price of around £110-120/tonne. If biomass travels 150km, a charge of £4/kgtm (roughly £5/kntkm) would cost 75p/tonne. A freight-only line charge of 70p/kgtm would add a further 13p taking the total to 88p, less than 1% of the delivered price. Eggborough's

[418] https://www.gov.uk/government/publications/review-of-the-generation-costs-and-deployment-potential-of-renewable-electricity-technologies-in-the-uk-study-report-by-arup.

open letter put the impact at between 50p and £1.50 a tonne and their response to the consultation said our proposal would add about £1 to the cost of moving biomass. This is also less than 1% of the delivered price.

B.26. However, under the CfD programme, biomass conversions are being financed through long-term fixed price contracts (for both outputs and inputs) that imply low profit margins on which the charge could have a material impact. Moreover, there are other changes to rail freight access charges. It is probably open to DECC to adjust the CfD strike price to allow for the impact of the charge but not to compensate generators who have already taken the Renewables Obligation route.

Decision

B.27. Biomass is an emerging market where there is considerable uncertainty. Those expert in the area have told us that there is a risk of a freight specific charge causing large projects to be halted. DECC has told us that increasing generators' costs puts deployment of renewable electricity at risk. Generators involved have said that the charge could fundamentally alter long-term investment plans and arrangements and that the investment in biomass conversion is "not a foregone conclusion".

B.28. While the charge is only a small part of biomass generation cost we must give weight to these warnings from the generators and the relevant government department. Margins are said to be small and DECC is likely to have calculated its support to be just sufficient to make the investment come about. So, even if the impact is small, it may act as a deterrent.

B.29. For the reasons set out above, we therefore consider that if we imposed the freight specific charge on biomass there would be a significant risk that it could result in exclusion of the use of the infrastructure by biomass. Even if there were not a risk of exclusion there would be a danger of a significant fall in biomass freight traffic and of disruption to the renewables programme which might result in an outcome that was less efficient or less conducive to sustainable development. We consider that for these reasons biomass is distinct from, and can therefore be treated differently to, the other three market segments upon which we are going to levy a mark-up.

B.30. We have therefore decided not to apply the freight specific charge to biomass in CP5 but expect to review the position in PR18 when the market is more established and better understood. We propose to work further with the industry, and with customers

for biomass haulage, in CP5 in order to understand better the costs they generate on the network and how this should be reflected in charges in CP6.

Annex C: Summary of other single till income

Summary

C.1. This annex includes a summary of total other single till income (OSTI) included in the Network Rail's revenue requirement chapter (chapter 14), which can be broken down into the categories described below.

C.2. Total non-charge income, which includes: property rental, property sales, Crossrail finance charge, Welsh Valleys finance charge, facility charges and other non-charge income. This income is included in the other single till income chapter (chapter 18).

C.3. Total regulated charge income, which includes: freight charges, open access charges, managed stations income (long term charge) and franchised stations income (long term charge). This income is included in the access charges chapter (chapter 16).

C.4. Non-regulated income, which includes: depot income, freight connection agreements (including other non-regulated income), managed stations qualifying expenditure and franchised stations lease income. In our draft determination we have included Network Rail's SBP forecasts, we will review this assumption further for our final determination.

C.5. Our determination of the funding requirement to cover Network Rail's expected costs of Schedule 4 payments to freight operators and Schedule 8 cancellation payments to freight operators, are included as Schedule 4 and 8 costs, in the possessions and performance regimes chapter (chapter 20). The SBP included these amounts in other single till income and we have not restated Network Rail's SBP for this issue.

C.6. Tables C.1 to C.6 summarise other single till income for both Network Rail's SBP and our determination for Great Britain, England & Wales and Scotland. We have also included a comparison between Network Rail's SBP and our assessment in Table C.7.

Table C.1: Network Rail's SBP forecast of other single till income in CP5 (Great Britain)*

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Property rental	261.0	267.3	271.4	275.8	280.9	1,356.4	Chapter 18 Other single till income
Property sales	19.7	20.5	20.5	21.0	19.9	101.6	Chapter 18 Other single till income
Adjustment for commercial opex	-30.6	-30.8	-30.8	-30.8	-30.8	-153.8	Chapter 18 Other single till income
Crossrail finance charge	32.0	52.0	70.0	83.0	89.0	326.0	Chapter 18 Other single till income
Welsh Valleys finance charge	0.6	1.6	3.7	8.4	13.5	27.8	Chapter 18 Other single till income
Facility charges – station depot and track	50.6	53.9	53.6	53.3	53.0	264.4	Chapter 18 Other single till income
Other non-charge income	13.7	9.8	9.8	9.8	9.8	52.9	Chapter 18 Other single till income
Total non-charge income	**347.0**	**374.3**	**398.2**	**420.5**	**435.3**	**1,975.3**	**Chapter 18 Other single till income**
Freight charges	85.9	94.4	105.9	121.6	137.8	545.6	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	4.9	4.9	4.9	4.9	4.9	24.5	Non-regulated income (annex C)
Total freight Income	**90.8**	**99.3**	**110.8**	**126.5**	**142.7**	**570.1**	

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Managed stations long term charge	30.5	30.5	30.5	30.5	30.5	152.5	Chapter 16 Access charges
Managed stations qualifying expenditure	43	43	43	43	43	215.0	Non-regulated income (annex C)
Total managed stations income	**73.6**	**73.6**	**73.6**	**73.6**	**73.6**	**367.9**	
Franchised stations long term charge	144.2	144.2	144.2	144.2	144.2	721.0	Chapter 16 Access charges
Franchised stations lease income	44.1	44.1	44.1	44.2	44.7	221.2	Non-regulated income (annex C)
Total franchised stations income	**188.2**	**188.3**	**188.3**	**188.4**	**188.9**	**942.0**	
Open access	**7.8**	**11.2**	**11.3**	**11.5**	**11.4**	**53.2**	**Chapter 16 Access charges**
Depots	**59.9**	**59.9**	**59.9**	**59.9**	**59.9**	**299.3**	**Non-regulated income (annex C)**
Other	**2.8**	**1.5**	**1.4**	**0.8**	**0.5**	**7.0**	
Total OSTI	**770.1**	**808.1**	**843.5**	**881.2**	**912.3**	**4,214.9**	**Chapter 14 Revenue Requirement**

*Note:

1. Shortly after publication of its SBP, Network Rail advised us that it had underestimated its stations property income by £23.5m in total over CP5 for Great Britain. In this table, we have adjusted for this issue. But in table 14.4 we have not made an adjustment.
2. At the time of Network Rail's SBP, we had not made a decision to introduce the freight specific charge and therefore Network Rail's SBP did not provide an estimate of this income. Following our decision to include a freight specific charge, we calculated freight specific charge income based on the capped charge rates as set out in our January 2013 conclusion. This would increase Network Rail's SBP freight charges by £54.0m in total over CP5 for Great Britain. In this table, we have adjusted for this issue. But in table 14.4 we have not made an adjustment.

Table C.2: Network Rail's SBP forecast of other single till income in CP5 (England & Wales)*

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Property rental	245.3	251.3	255.1	259.3	264.0	1,275.0	Chapter 18 Other single till income
Property sales	18.5	19.3	19.3	19.7	18.7	95.5	Chapter 18 Other single till income
Adjustment for commercial opex	-28.8	-29.0	-29.0	-29.0	-29.0	-144.8	Chapter 18 Other single till income
Crossrail finance charge	32.0	52.0	70.0	83.0	89.0	326.0	Chapter 18 Other single till income
Welsh Valleys finance charge	0.6	1.6	3.7	8.4	13.5	27.8	Chapter 18 Other single till income
Facility Charges – station depot and track	49.8	53.1	52.8	52.5	52.2	260.4	Chapter 18 Other single till income
Other	13.3	9.5	9.5	9.5	9.5	51.3	Chapter 18 Other single till income
Total non-charge income	**330.7**	**357.8**	**381.4**	**403.4**	**417.9**	**1,891.2**	**Chapter 18 Other single till income**
Freight charges	76.6	84.4	94.4	107.3	120.5	483.2	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	4.1	4.1	4.1	4.1	4.1	20.5	Non-regulated income (annex C)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Total Freight income	**80.7**	**88.5**	**98.5**	**111.4**	**124.6**	**503.7**	
Managed stations long term charge	28.3	28.3	28.3	28.3	28.3	141.5	Chapter 16 Access charges
Managed stations qualifying expenditure	38.6	38.6	38.6	38.6	38.6	193.0	Non-regulated income (annex C)
Total managed stations income	**66.9**	**66.9**	**66.9**	**66.9**	**66.9**	**334.5**	
Franchised stations long term charge	130.9	130.9	130.9	130.9	130.9	654.5	Chapter 16 Access charges
Franchised stations lease income	42.0	42.0	42.1	42.1	42.7	210.9	Non-regulated income (annex C)
Total franchised stations income	**172.9**	**172.9**	**173.0**	**173.0**	**173.6**	**865.4**	
Open access	**7.8**	**11.2**	**11.3**	**11.5**	**11.4**	**53.2**	**Chapter 16 Access charges**
Depots	**53.3**	**53.3**	**53.3**	**53.3**	**53.3**	**266.5**	**Non-regulated income (annex C)**
Other	**5.3**	**3.5**	**3.5**	**2.9**	**2.2**	**17.4**	
Total OSTI	**717.6**	**754.1**	**787.9**	**822.4**	**849.9**	**3,931.9**	**Chapter 14 Revenue Requirement**

*Note:

1. Shortly after publication of its SBP, Network Rail advised us that it had underestimated its stations property income by £31.9m in total over CP5 for England & Wales. In this table, we have adjusted for this issue. But in Table 14.8 we have not made an adjustment.
2. At the time of Network Rail's SBP, we had not made a decision to introduce the freight specific charge and therefore Network Rail's SBP did not provide an estimate of this income. Following our decision to include a freight specific charge, we calculated freight specific charge income based on the capped charge rates as set out in our January 2013 conclusion. This would increase Network

Rail's SBP freight charges by £42.7m in total over CP5 for Great Britain. In this table, we have adjusted for this issue. But in table 14.8 we have not made an adjustment.

Table C.3: Network Rail's SBP forecast of other single till income in CP5 (Scotland)*

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	
Property rental	15.7	16.0	16.3	16.5	16.9	81.4	Chapter 18 Other single till income
Property sales	1.2	1.2	1.2	1.3	1.2	6.1	Chapter 18 Other single till income
Adjustment for commercial opex	-1.8	-1.8	-1.8	-1.8	-1.8	-9.0	Chapter 18 Other single till income
Facility charges – station depot and track	0.8	0.8	0.8	0.8	0.8	4.0	Chapter 18 Other single till income
Other	0.3	0.3	0.3	0.3	0.3	1.5	Chapter 18 Other single till income
Total non-charge income	**16.2**	**16.5**	**16.8**	**17.1**	**17.4**	**84.0**	**Chapter 18 Other single till income**
Freight charges	9.2	10.0	11.5	14.3	17.2	62.2	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	0.5	0.5	0.5	0.5	0.5	2.5	Non-regulated income (annex C)
Total freight income	**9.7**	**10.5**	**12.0**	**14.8**	**17.7**	**64.6**	
Managed stations long term charge	2.3	2.3	2.3	2.3	2.3	11.5	Chapter 16 Access charges

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	
Managed stations qualifying expenditure	4.4	4.4	4.4	4.4	4.4	22.0	Non-regulated income (annex C)
Total managed stations income	**6.7**	**6.7**	**6.7**	**6.7**	**6.7**	**33.4**	
Franchised stations long term charge	13.2	13.2	13.2	13.2	13.2	66.0	Chapter 16 Access charges
Franchised stations lease income	2.1	2.1	2.1	2.1	2.1	10.5	Non-regulated income (annex C)
Total franchised stations income	**15.3**	**15.3**	**15.3**	**15.3**	**15.3**	**76.6**	
Open access	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**Chapter 16 Access charges**
Depots	**6.6**	**6.6**	**6.6**	**6.6**	**6.6**	**33.0**	**Non-regulated income (annex C)**
Other	**-1.6**	**-2.0**	**-1.5**	**-1.6**	**-1.7**	**-8.4**	
Total OSTI	**52.9**	**53.6**	**55.9**	**58.9**	**62.0**	**283.2**	**Chapter 14 Revenue Requirement**

*Note:

1. Shortly after publication of its SBP, Network Rail advised us that it had overestimated its stations property income by £7.7m in total over CP5 for Scotland. In this table, we have adjusted for this issue. But in table 14.12 we have not made an adjustment.
2. At the time of Network Rail's SBP, we had not made a decision to introduce the freight specific charge and therefore Network Rail's SBP did not provide an estimate of this income. Following our decision to include a freight specific charge, we calculated freight specific charge income based on the capped charge rates as set out in our January 2013 conclusion. This would increase Network Rail's SBP freight charges by £11.3m in total over CP5 for Great Britain. In this table, we have adjusted for this issue. But in table 14.12 we have not made an adjustment.

Table C.4: Our assessment of other single till income in CP5 (Great Britain)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Property rental	272.1	307.7	331.1	357.6	387.9	1,656.4	Chapter 18 Other single till income
Property sales	34.7	35.5	35.5	36.0	34.9	176.6	Chapter 18 Other single till income
Adjustment for commercial opex	-30.6	-30.8	-30.8	-30.8	-30.8	-153.8	Chapter 18 Other single till income
Crossrail Finance Charge	29.2	47.2	64.2	75.9	81.6	298.1	Chapter 18 Other single till income
Welsh Valleys Finance Charge	0.5	1.3	3.0	6.9	11.1	22.8	Chapter 18 Other single till income
Facility Charges – Station depot and Track	47.2	52.8	55.5	58.1	60.8	274.4	Chapter 18 Other single till income
Other	13.7	13.7	13.7	13.7	13.7	68.5	Chapter 18 Other single till income
Total non-charge income	**366.8**	**427.4**	**472.2**	**517.4**	**559.2**	**2,343.0**	**Chapter 18 Other single till income**
Freight charges	72.4	77.2	85.3	94.3	104.2	433.4	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	4.5	4.5	4.5	4.5	4.5	22.5	Non-regulated income (annex C)
Total freight income	**76.9**	**81.7**	**89.8**	**98.8**	**108.7**	**455.9**	

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Managed stations long term charge	29.2	29.2	29.2	29.2	29.2	146.0	Chapter 16 Access charges
Managed stations qualifying expenditure	43.0	43.0	43.0	43.0	43.0	215.0	Non-regulated income (annex C)
Total managed stations income	**72.2**	**72.2**	**72.2**	**72.2**	**72.2**	**360.8**	
Franchised stations long term charge	120.4	120.4	120.4	120.4	120.4	602.0	Chapter 16 Access charges
Franchised stations lease income	44.0	44.1	44.1	44.2	44.7	221.1	Non-regulated income (annex C)
Total franchised stations income	**164.4**	**164.5**	**164.5**	**164.6**	**165.1**	**822.9**	**Chapter 16 Access charges**
Open access	**6.6**	**8.0**	**8.4**	**8.4**	**8.5**	**39.9**	**Chapter 16 Access charges**
Depots	**59.8**	**59.8**	**59.8**	**59.8**	**59.8**	**299.0**	**Non-regulated income (annex C)**
Total OSTI	**746.5**	**813.6**	**866.9**	**921.2**	**973.5**	**4,321.5**	**Chapter 14 Revenue Requirement**

Table C.5: Our assessment of other single till income in CP5 (England & Wales)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Property rental	255.8	289.2	311.2	336.1	364.6	1,557.0	Chapter 18 Other single till income
Property sales	32.6	33.4	33.4	33.8	32.8	166.0	Chapter 18 Other single till income

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Adjustment for commercial opex	-28.8	-29.0	-29.0	-29.0	-29.0	-144.8	Chapter 18 Other single till income
Crossrail Finance Charge	29.2	47.2	64.2	75.9	81.6	298.1	Chapter 18 Other single till income
Welsh Valleys Finance Charge	0.5	1.3	3.0	6.9	11.1	22.8	Chapter 18 Other single till income
Facility Charges – Station depot and Track	46.3	51.7	54.2	56.8	59.3	268.3	Chapter 18 Other single till income
Other	13.4	13.4	13.4	13.4	13.4	67.0	Chapter 18 Other single till income
Total non-charge income	**349.0**	**407.2**	**450.4**	**493.9**	**533.8**	**2,234.4**	**Chapter 18 Other single till income**
Freight charges	64.8	69.2	76.6	84.3	93.0	387.9	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	4.1	4.1	4.1	4.1	4.1	20.5	Non-regulated income (annex C)
Total freight income	**68.9**	**73.3**	**80.7**	**88.4**	**97.1**	**408.4**	
Managed stations long term charge	27.0	27.0	27.0	27.0	27.0	135.0	Chapter 16 Access charges
Managed stations qualifying expenditure	38.6	38.6	38.6	38.6	38.6	193.0	Non-regulated income (annex C)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total	Reference
Total managed stations income	**65.6**	**65.6**	**65.6**	**65.6**	**65.6**	**328.0**	
Franchised stations long term charge	109.3	109.3	109.3	109.3	109.3	546.5	Chapter 16 Access charges
Franchised stations lease income	42.0	42.0	42.1	42.1	42.7	210.9	Non-regulated income (annex C)
Total franchised stations income	**151.3**	**151.3**	**151.4**	**151.4**	**152.0**	**757.6**	
Open access	**6.6**	**8.0**	**8.4**	**8.4**	**8.5**	**40.0**	**Chapter 16 Access charges**
Depots	**53.3**	**53.3**	**53.3**	**53.3**	**53.3**	**266.5**	**Non-regulated income (annex C)**
Total OSTI	**694.7**	**758.7**	**809.8**	**861.0**	**910.3**	**4,034.9**	**Chapter 14 Revenue Requirement**

Table C.6: Our assessment of other single till income in CP5 (Scotland)

£m (2012-13 prices)*	2014-15	2015-16	2016-17	2017-18	2018-19	Total	Reference
Property rental	16.3	18.5	19.9	21.5	23.3	99.4	Chapter 18 Other single till income
Property sales	2.1	2.1	2.1	2.2	2.1	10.6	Chapter 18 Other single till income
Adjustment for commercial opex	-1.8	-1.9	-1.9	-1.9	-1.9	-9.4	Chapter 18 Other single till income

£m (2012-13 prices)*	2014-15	2015-16	2016-17	2017-18	2018-19	Total	Reference
Facility Charges – Station depot and Track	0.9	1.1	1.2	1.4	1.5	6.1	Chapter 18 Other single till income
Other	0.3	0.3	0.3	0.3	0.3	1.5	Chapter 18 Other single till income
Total non-charge income	**17.8**	**20.1**	**21.6**	**23.5**	**25.3**	**108.2**	**Chapter 18 Other single till income**
Freight charges	7.5	7.9	8.7	9.8	11.1	45.0	Chapter 16 Access charges
Freight connection agreements and other non-regulated income	0.5	0.5	0.5	0.5	0.5	2.5	Non-regulated income (annex C)
Total freight income	**8.0**	**8.4**	**9.2**	**10.3**	**11.6**	**47.5**	
Managed stations long term charge	2.2	2.2	2.2	2.2	2.2	11.0	Chapter 16 Access charges
Managed stations qualifying expenditure	4.4	4.4	4.4	4.4	4.4	22.0	Non-regulated income (annex C)
Total managed stations income	**6.6**	**6.6**	**6.6**	**6.6**	**6.6**	**32.8**	
Franchised stations long term charge	11.0	11.0	11.0	11.0	11.0	55.0	Chapter 16 Access charges
Franchised stations lease income	2.1	2.1	2.1	2.1	2.1	10.5	Non-regulated income (annex C)

£m (2012-13 prices)*	2014-15	2015-16	2016-17	2017-18	2018-19	Total	Reference
Total franchised stations income	**13.1**	**13.1**	**13.1**	**13.1**	**13.1**	**65.6**	
Open access	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**Chapter 16 Access charges**
Depots	**6.6**	**6.6**	**6.6**	**6.6**	**6.6**	**33.0**	**Non-regulated income (annex C)**
Total OSTI	**52.1**	**54.8**	**57.1**	**60.1**	**63.2**	**287.1**	**Chapter 14 Revenue Requirement**

Table C.7 Difference between our determination and Network Rail's SBP (Great Britain)

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total
Property rental	11.1	40.4	59.7	81.8	107.0	300.0
Property sales	15.0	15.0	15.0	15.0	15.0	75.0
Crossrail Finance Charge	-2.8	-4.8	-5.8	-7.1	-7.4	-27.9
Welsh Valleys Finance Charge	-0.1	-0.3	-0.7	-1.5	-2.4	-5.0
Facility Charges – Station depot and Track	-3.4	-1.1	1.9	4.8	7.8	10.0
Other	0.0	3.9	3.9	3.9	3.9	15.6
Total non-charge income	19.8	53.1	74.0	96.9	123.9	367.7
Total freight income	**-13.9**	**-17.6**	**-21.0**	**-27.7**	**-34.0**	**-114.2**
Total managed stations income	**-1.4**	**-1.4**	**-1.4**	**-1.4**	**-1.4**	**-7.1**

£m (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total
Total franchised stations income	-23.8	-23.8	-23.8	-23.8	-23.8	-119.1
Open access	-1.2	-3.2	-2.9	-3.1	-2.9	-13.3
Depots	-0.1	-0.1	-0.1	-0.1	-0.1	-0.3
Other	-2.8	-1.5	-1.4	-0.8	-0.5	-7.0
Total OSTI	-23.6	5.5	23.4	40.0	61.2	106.7

Annex D: Route-level data

Structure of this annex

D.1. This annex is structured as follows:

(a) introduction to the annex;

(b) our approach to the assessment of Network Rail's route-level income and expenditure;

(c) a summary of our assessment;

(d) REBS baselines; and

(e) route-level income and expenditure assumptions, indicative revenue requirements and indicative key financial information.

Introduction

D.2. We present two separate types of route-level information for our determination. We need to do this to support route-level efficiency benefit sharing (REBS) and to facilitate our move to a more granular assessment of Network Rail's costs. This will provide greater focus on Network Rail's route-level costs and improve the information that we will have available to inform our PR18 periodic review. The two categories are:

(a) **REBS baselines** – we need to determine route-level baselines to inform the development of the final REBS baselines. Network Rail will need to ensure that the REBS baselines that are agreed (before the start of CP5) reconcile back to our England & Wales and Scotland determinations. The REBS baselines are simply a subset of the wider route-level income and cost assumptions, e.g. REBS baselines exclude Network Rail's interest costs (as TOCs/FOCs have limited influence over these costs) but our route-level income and cost assumptions will include these costs.

(b) **Route-level income and cost assumptions** – we also present our route-level assumptions for key areas of Network Rail's income and expenditure, indicative revenue requirements and indicative key financial information.

Our approach

Overview

D.3. Throughout this document, we have explained our approach to the assessment on Network Rail's income and expenditure. Below, we provide a summary of our approach for calculating our assumptions for Network Rail's CP5 income and expenditure at the route level.

D.4. To determine route-level assumptions we have:

(a) assessed Network Rail's SBP forecasts for route-level income and expenditure in CP5;

(b) where Network Rail has allocated income and expenditure to operating routes (rather than building its forecasts on a bottom-up basis), we reviewed its allocation methodologies, e.g. allocation in relation to vehicle kilometres by route, to determine whether these were reasonable; and

(c) we then applied our own assessment of efficiency to Network Rail's income and expenditure to determine our CP5 route-level assumptions.

Approach to income and expenditure

D.5. We explain below the approach we have taken to our assessment for each key element of Network Rail's income and expenditure.

Support costs

D.6. In its SBP, Network Rail allocated its central support functions to its operating routes using a relatively simple methodology. Since then, Network Rail has developed a more refined methodology for the allocations of these costs. We have reviewed this revised methodology and consider it to be reasonable. PwC has started a review of the allocation methodology that Network Rail used and we will report on its findings in our final determination.

D.7. For our assessment, we have used Network Rail's latest allocation methodology to determine the appropriate level of support costs for each of Network Rail's ten operating routes. This methodology uses a mix of different cost driver based metrics to allocate Network Rail's central support costs to operating routes on a function-by-function basis. For example, information management costs are allocated to routes by

the number of information management users and most HR costs are allocated to routes using headcount.

Operations

D.8. Network Rail's SBP included a bottom-up assessment of operations costs for each of its ten operating routes. This assessment is based on Network Rail's local plans to deliver the operating strategy. We consider Network Rail's plans for operations costs to be reasonable and so we have used Network Rail's breakdown of operations cost by route for the basis of our PR13 determination assumptions.

Maintenance

D.9. Network Rail presented its maintenance expenditure plans in the SBP on a route basis. Network Rail's plans are based on bottom-up route-based estimates of the resource required to safely maintain the railway in line with its asset policies. The route-based figures include consideration of the impact of increased traffic and new infrastructure on that route. Our route-level assessment of these costs reflects Network Rail bottom-up plans.

Renewals

D.10. Network Rail has presented its renewals expenditure plans in the SBP on a route basis. Network Rail's plans are based on the outputs of a challenge process between modelled expenditure requirements and plans developed by the routes. The company's models produce route renewals expenditure forecasts, which consider route-specific asset information, unit costs disaggregated by structural factors and efficiencies reflecting the different mix of asset types on each route. The operating routes produced their plans based on their local knowledge of the asset base, knowledge of delivery constraints, understanding of local costs and local efficiency initiatives. The challenge process between modelled expenditure and route based plans has helped to improve the robustness of the route plans.

Enhancements

D.11. For the ring-fenced funds, we have allocated an amount of cost to Network Rail's operating routes based on the percentage of train miles in that operating route. The exception to this rule is for East Coast Connectivity Fund, which has been allocated entirely to the LNE route. For enhancement projects, we have allocated costs to Network Rail's operating routes on the basis of Network Rail's SBP assumptions on the percentage of each enhancement project allocated to specific routes. We have

applied these assumptions to our own bottom-up assessment of Network Rail's enhancement project costs.

Traction electricity, industry costs and rates

D.12. Network Rail's industry costs and rates cover costs that, with the exception of traction electricity and cumulo rates, are incurred centrally with Network Rail allocating these costs to its operating routes. We have used the same approach as Network Rail for allocating our assessment of these central costs to the route-level.

Schedule 4 costs

D.13. Our route-level CP5 Schedule 4 cost assumptions are based on Network Rail's SBP methodology. For its SBP, Network Rail produced a bottom-up assessment of route-level Schedule 4 costs based on its CP5 route-level possession activity volume forecasts (by asset type) and its network-wide unit cost assumptions (for each asset type) reflecting its 2011-12 possession costs and volumes.

Schedule 8 costs

D.14. Our route-level CP5 Schedule 8 cost assumptions are based on Network Rail's SBP methodology. In its SBP, Network Rail allocated these costs to its operating routes using freight train miles. Given the materiality of these figures, together with likely 'lumpiness' in cancellations at the route-level, we believe that this is a suitable approach.

Other single till income (OSTI)

D.15. The majority of other single till income relates to Network Rail's property business and income from some enhancements undertaken by Network Rail such as Crossrail. The other elements of other single till income are mainly charging income from open access operators (passengers and freight) and stations and depots income. For property income, Network Rail used a simple metric of total income per route to allocate property income by route. We have also used this approach in this document but we will review this assumption for the final determination. For the elements of Network Rail's charging income within OSTI, we have used Network Rail's allocations, which are based on values of route-level income in CP4.

Variable usage charge income

D.16. The variable usage charge itself is not disaggregated by Network Rail operating route and so we have had to make assumptions about how to allocate Network Rail's charging income to its operating routes. Our assessment of Network Rail's variable

usage charge income from passenger operators is allocated to operating routes by multiplying service group-specific charge rates by vehicle kilometres, disaggregated by service group and operating route. For freight, commodity-specific charge rates are multiplied by tonne kilometres, disaggregated by commodity and route.

Financing assumptions

D.17. Network Rail raises debt at a GB-level and so we have to make assumptions about the financing costs that are allocated to each of Network Rail's operating routes.

(a) **Scotland:** Since 1 April 2006, the RAB for Network Rail's Scottish operating route has been separately identified from England & Wales. As part of PR08, we also disaggregated the Scottish route's net debt. Therefore, our PR13 financing cost assumptions for Scotland are based on a roll-forward from Network Rail's latest forecasts of closing CP4 RAB and debt for Scotland.

(b) **England & Wales routes:** For PR13, we have provided an indicative disaggregation of Network Rail's RAB and debt for the nine England & Wales operating routes. We have two main options for disaggregation: 1) use the same approach as for disaggregating the Scottish route, or 2) use Network Rail's methodology for disaggregating the fixed charge. These two approaches produce similar results and so we have decided to use Network Rail's fixed charge disaggregation approach. This approach uses route-level assessments of long-run renewals costs. Once we established opening CP5 RAB and debt assumptions for each of the nine routes, we then calculated Network Rail's financing costs for each route by applying our CP5 income and expenditure assumptions to the route-level CP5 opening RAB and net debt.

Changes to our route-level assumptions

D.18. In chapter 19 (Financial incentives) and chapter 23 (Monitoring, enforcement and reporting) we explain the scope that Network Rail has to adjust our assessments of route-level income and expenditure.

D.19. In summary:

(a) **REBS baselines**. PR13 final determination income and expenditure assumptions for England & Wales and Scotland will act as REBS baselines in CP5. Network Rail will be able to set REBS baselines for the nine England &

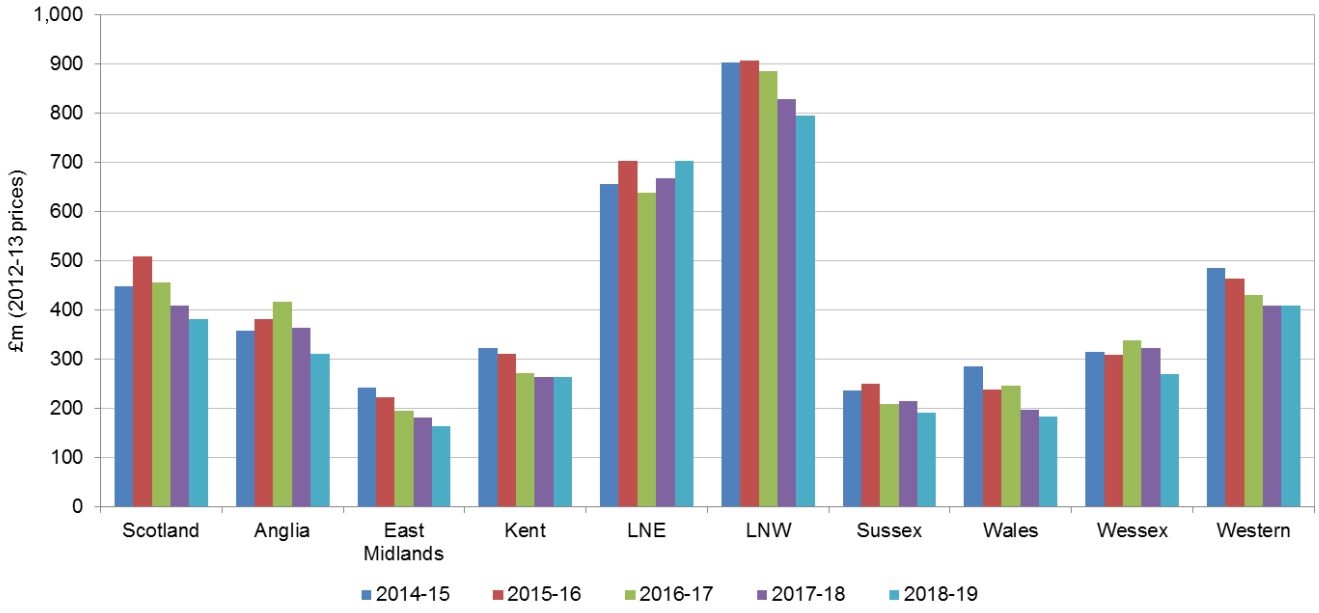
Wales operating routes, as long as they reconcile in total back to our national England & Wales determination assumptions.

(b) **CP5 financial monitoring**. For CP5, we propose that our financial monitoring should compare Network Rail's financial performance against our PR13 determination income and expenditure assumptions. Network Rail cannot change these baselines.

Summary analysis

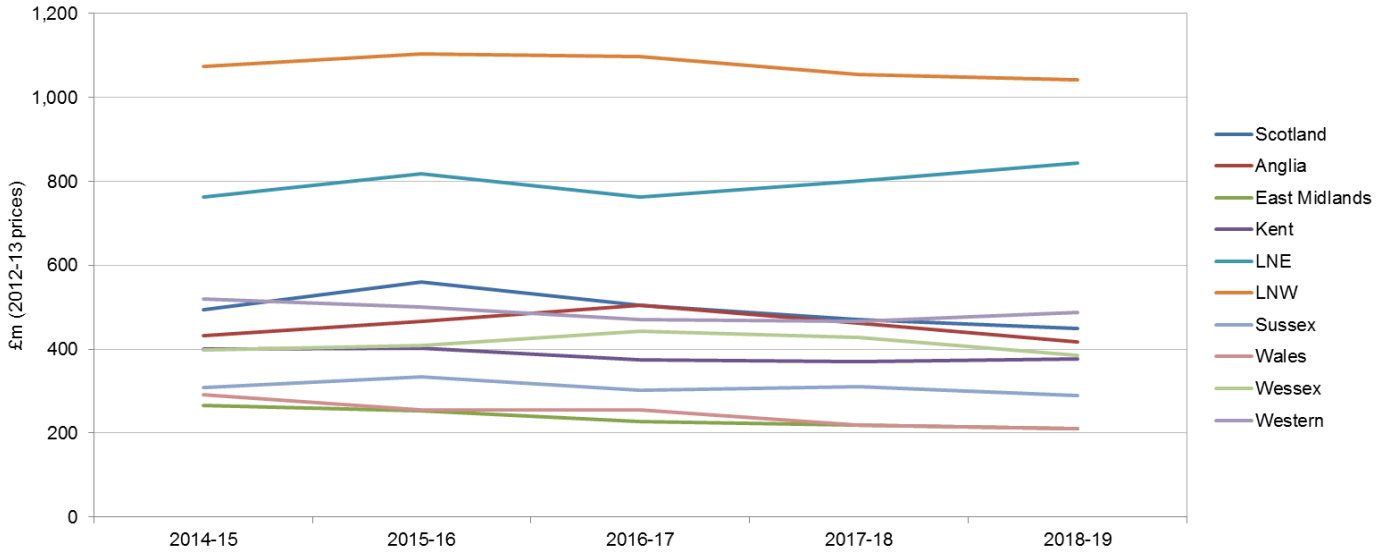
D.20. Figure D.1 sets out the REBS baselines for each route.

Figure D.1: Our assessment of the CP5 draft REBS baselines



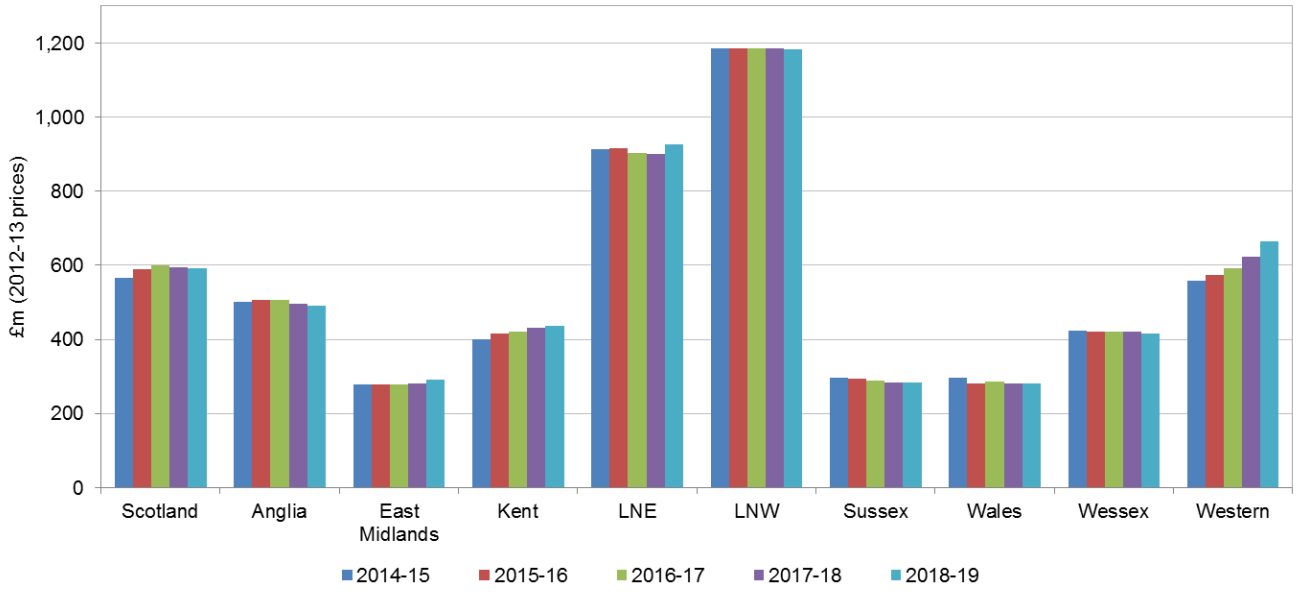
D.21. Figure D.2 sets out our assessment of the indicative expenditure by route for support, operations, maintenance, traction electricity, industry costs and rates and renewals.

Figure D.2: Our assessment of the indicative CP5 route-level expenditure assumptions



D.22. Figure D.3 sets out the indicative annual net revenue requirement for each operating route.

Figure D.3: Our assessment of the indicative CP5 net revenue requirements



REBS baselines

Overview

D.23. We set out below the draft REBS baselines for each of Network Rail's ten operating routes. We propose to include within REBS only those elements of Network Rail's costs and income that we consider train operators are able to influence. On this basis, REBS will include:

(a) support costs;

(b) operations costs;

(c) maintenance costs;

(d) renewals costs;

(e) Network Rail's share of RSSB and BTP costs;

(f) Schedule 4 & 8 costs;

(g) property income; and

(h) variable usage charge income.

D.24. We explain this further in chapter 19 (Financial incentives).

Route-by-route REBS baselines

Table D.1: Our assessment of the Scotland REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	46	44	41	40	38	209
Industry costs (RSSB and BTP only)	8	8	7	7	7	37
Network operations	39	38	37	34	33	181
Network maintenance	103	109	104	100	92	508
Renewals	264	322	274	244	230	1,333
Schedule 4 and 8 costs	22	26	32	24	23	128
Total expenditure	**483**	**546**	**494**	**448**	**423**	**2,395**
Income						
Advertising income	2	2	2	2	2	10
Retail income	6	7	7	8	9	37
Concessions income	1	1	1	1	1	4
Other property income	6	8	8	8	8	38
Property sales	2	2	2	2	2	11
Commercial property opex	(2)	(2)	(2)	(2)	(2)	(9)
VUC income	19	19	20	20	20	99
Total income	**(35)**	**(36)**	**(38)**	**(39)**	**(40)**	**(188)**
REBS baseline	**448**	**510**	**457**	**409**	**383**	**2,207**

Table D.2: Our assessment of the Anglia REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	42	40	37	36	35	190
Industry costs (RSSB and BTP only)	7	7	7	7	6	34
Network operations	42	41	39	36	34	192
Network maintenance	103	102	100	96	91	493
Renewals	184	210	252	214	175	1,034
Schedule 4 and 8 costs	18	23	26	20	18	105
Total expenditure	**398**	**423**	**461**	**409**	**358**	**2,049**
Income						
Advertising income	2	3	3	3	3	13
Retail income	9	9	10	11	12	50
Concessions income	1	1	1	1	1	5
Other property income	9	10	11	11	12	52
Property sales	3	3	3	3	3	14
Commercial property opex	(3)	(3)	(3)	(3)	(3)	(13)
VUC income	18	18	19	19	19	93
Total income	**(39)**	**(41)**	**(43)**	**(45)**	**(47)**	**(215)**
REBS baseline	**359**	**381**	**418**	**364**	**311**	**1,833**

Table D.3: Our assessment of the East Midlands REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	24	23	22	21	20	110
Industry costs (RSSB and BTP only)	4	4	4	4	4	20
Network operations	20	19	17	15	15	86
Network maintenance	56	55	53	52	50	265
Renewals	146	132	111	105	93	587
Schedule 4 and 8 costs	16	14	12	10	9	61
Total expenditure	**266**	**247**	**219**	**207**	**190**	**1,129**
Income						
Advertising income	1	1	1	1	1	5
Retail income	4	4	4	4	5	20
Concessions income	0	0	0	0	0	2
Other property income	3	4	4	5	5	21
Property sales	1	1	1	1	1	6
Commercial property opex	(1)	(1)	(1)	(1)	(1)	(5)
VUC income	14	14	15	15	15	73
Total income	**(23)**	**(24)**	**(24)**	**(25)**	**(26)**	**(122)**
REBS baseline	**243**	**224**	**195**	**182**	**164**	**1,007**

Table D.4: Our assessment of the Kent REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	37	36	33	32	31	170
Industry costs (RSSB and BTP only)	5	5	5	5	5	25
Network operations	30	29	28	28	24	139
Network maintenance	74	72	68	66	64	344
Renewals	205	198	173	171	180	928
Schedule 4 and 8 costs	17	21	16	17	16	87
Total expenditure	**369**	**360**	**324**	**319**	**320**	**1,692**
Income						
Advertising income	4	4	4	4	5	22
Retail income	14	15	16	18	19	82
Concessions income	2	2	2	2	2	8
Other property income	14	17	18	18	19	86
Property sales	5	5	5	5	5	24
Commercial property opex	(4)	(4)	(4)	(4)	(4)	(21)
VUC income	11	11	11	11	12	56
Total income	**(46)**	**(49)**	**(52)**	**(55)**	**(57)**	**(258)**
REBS baseline	**323**	**311**	**272**	**265**	**263**	**1,435**

Table D.5: Our assessment of the LNE REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	79	75	70	68	65	356
Industry costs (RSSB and BTP only)	12	12	11	11	10	56
Network operations	71	70	65	62	59	328
Network maintenance	164	161	154	151	148	779
Renewals	382	434	392	434	471	2,113
Schedule 4 and 8 costs	33	42	40	39	50	203
Total expenditure	**741**	**793**	**733**	**765**	**804**	**3,836**
Income						
Advertising income	4	4	4	4	5	21
Retail income	14	15	16	18	19	82
Concessions income	2	2	2	2	2	8
Other property income	14	17	17	18	19	86
Property sales	5	5	5	5	5	24
Commercial property opex	(4)	(4)	(4)	(4)	(4)	(21)
VUC income	50	51	53	54	55	265
Total income	**(85)**	**(89)**	**(94)**	**(97)**	**(100)**	**(465)**
REBS baseline	**656**	**704**	**639**	**668**	**704**	**3,371**

Table D.6: Our assessment of the LNW REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	109	104	97	94	90	495
Industry costs (RSSB and BTP only)	19	18	17	17	16	86
Network operations	104	100	98	93	90	484
Network maintenance	273	265	257	247	240	1,281
Renewals	473	497	498	466	457	2,391
Schedule 4 and 8 costs	42	44	45	46	39	216
Total expenditure	**1,019**	**1,028**	**1,012**	**962**	**932**	**4,953**
Income						
Advertising income	6	6	7	7	7	33
Retail income	22	22	24	27	29	124
Concessions income	2	2	2	3	3	12
Other property income	21	26	26	28	29	130
Property sales	7	7	7	7	7	36
Commercial property opex	(6)	(6)	(6)	(6)	(6)	(31)
VUC income	63	64	65	67	68	326
Total income	**(115)**	**(121)**	**(126)**	**(131)**	**(136)**	**(630)**
REBS baseline	**904**	**907**	**886**	**830**	**796**	**4,323**

Table D.7: Our assessment of the Sussex REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	25	24	22	22	21	113
Industry costs (RSSB and BTP only)	5	5	5	5	4	24
Network operations	30	28	28	27	26	138
Network maintenance	57	55	52	51	48	263
Renewals	151	171	140	152	131	745
Schedule 4 and 8 costs	11	12	9	9	13	54
Total expenditure	**279**	**295**	**256**	**265**	**242**	**1,337**
Income						
Advertising income	4	4	4	4	4	20
Retail income	14	14	15	17	18	77
Concessions income	1	2	2	2	2	8
Other property income	13	16	16	17	18	81
Property sales	4	4	4	5	4	22
Commercial property opex	(4)	(4)	(4)	(4)	(4)	(19)
VUC income	9	9	9	9	9	46
Total income	**(42)**	**(45)**	**(47)**	**(50)**	**(51)**	**(234)**
REBS baseline	**237**	**250**	**209**	**215**	**191**	**1,103**

Table D.8: Our assessment of the Wales REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	23	22	20	20	19	103
Industry costs (RSSB and BTP only)	4	4	4	4	4	19
Network operations	25	24	23	24	21	117
Network maintenance	60	58	57	55	54	284
Renewals	173	140	143	108	100	664
Schedule 4 and 8 costs	19	11	18	9	7	64
Total expenditure	**304**	**258**	**266**	**219**	**205**	**1,252**
Income						
Advertising income	1	1	1	1	1	6
Retail income	4	4	4	5	5	23
Concessions income	0	0	0	0	0	2
Other property income	4	5	5	5	5	24
Property sales	1	1	1	1	1	7
Commercial property opex	(1)	(1)	(1)	(1)	(1)	(6)
VUC income	9	9	9	9	9	45
Total income	**(18)**	**(19)**	**(20)**	**(21)**	**(22)**	**(101)**
REBS baseline	**286**	**239**	**246**	**198**	**183**	**1,151**

Table D.9: Our assessment of the Wessex REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	34	32	30	29	27	152
Industry costs (RSSB and BTP only)	7	7	7	6	6	33
Network operations	31	30	30	27	26	143
Network maintenance	87	85	83	78	73	407
Renewals	190	190	225	217	180	1,003
Schedule 4 and 8 costs	16	15	18	20	15	83
Total expenditure	**364**	**360**	**392**	**378**	**328**	**1,821**
Income						
Advertising income	3	4	4	4	4	19
Retail income	13	13	15	16	17	74
Concessions income	1	1	1	2	2	7
Other property income	13	15	16	17	17	78
Property sales	4	4	4	4	4	22
Commercial property opex	(4)	(4)	(4)	(4)	(4)	(19)
VUC income	17	17	17	17	17	85
Total income	**(48)**	**(51)**	**(53)**	**(56)**	**(58)**	**(266)**
REBS baseline	**316**	**308**	**339**	**322**	**270**	**1,555**

Table D.10: Our assessment of the Western REBS baseline

(£m 2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Expenditure						
Support costs	43	41	39	37	36	195
Industry costs (RSSB and BTP only)	8	7	7	7	7	35
Network operations	33	33	31	31	31	159
Network maintenance	109	108	105	102	102	527
Renewals	307	291	268	255	254	1,375
Schedule 4 and 8 costs	26	27	24	24	27	129
Total expenditure	**527**	**507**	**474**	**456**	**456**	**2,421**
Income						
Advertising income	2	2	2	2	2	10
Retail income	7	7	8	8	9	39
Concessions income	1	1	1	1	1	4
Other property income	7	8	8	9	9	41
Property sales	2	2	2	2	2	11
Commercial property opex	(2)	(2)	(2)	(2)	(2)	(10)
VUC income	24	25	25	25	26	125
Total income	**(41)**	**(43)**	**(44)**	**(46)**	**(47)**	**(221)**
REBS baseline	**486**	**464**	**430**	**410**	**409**	**2,200**

Route-level income and cost assumptions

Overview

D.25. For each operating route, we set out below, the following information:

(a) indicative annual operating and capital expenditure assumptions;

(b) indicative revenue requirement calculations; and

(c) indicative key financial information.

Individual route-level income and cost assumptions

Table D.11: Our assessment of the Scotland expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	46	44	41	40	38	209
Network operations	39	38	37	34	33	181
Traction electricity, industry costs and rates	41	49	51	53	57	250
Network maintenance	103	109	104	100	92	508
Schedule 4 & 8 costs	22	26	32	24	23	128
Total operating expenditure	**251**	**266**	**264**	**250**	**243**	**1,275**
Renewals	264	322	274	244	230	1,333
Enhancements	448	413	306	160	79	1,406
Total capital expenditure	**712**	**735**	**579**	**404**	**310**	**2,739**
Total expenditure	**963**	**1,001**	**843**	**654**	**553**	**4,014**

Table D.12: Our assessment of the Scotland revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	251	266	264	250	243	1,275
Add: Long-run steady state amortisation	211	211	211	211	211	1,055
Add: Regulatory tax allowance	0	0	0	0	0	1
Add: Opex memorandum account	1	1	1	1	1	4
Gross rev. req. before cost of capital	**464**	**478**	**476**	**462**	**455**	**2,335**
Add: Allowed return (real cost of capital)	207	227	243	253	256	1,187
Less: Real equity surplus	(107)	(116)	(117)	(116)	(112)	(568)
Adjusted allowed return	100	110	126	137	145	618
Gross rev. req. pre-sustainability adjustments	**564**	**588**	**602**	**600**	**600**	**2,954**
Add: Additional amortisation (sustainability adjustment)	56	56	56	56	56	278
Gross revenue requirement	**619**	**644**	**658**	**655**	**656**	**3,231**
Less: other single till income	(52)	(55)	(57)	(60)	(63)	(288)
Net revenue requirement	**567**	**589**	**600**	**595**	**592**	**2,944**

Table D.13: Our assessment of the Scotland key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	5,139	5,608	5,921	6,058	6,101	6,101
Closing debt	3,326	3,744	3,994	4,061	4,032	4,032
£million (nominal prices)						
Financing costs (exc. FIM fee)	70	79	94	107	119	470
FIM fee	36	42	47	50	52	225
Total financing costs	106	121	141	157	171	695
Adjusted interest coverage ratio	1.01 x	1.01 x	1.01 x	1.01 x	1.01 x	1.01 x
Debt / RAB ratio	64.7%	66.8%	67.5%	67.0%	66.1%	66.1%

Table D.14: Our assessment of the indicative Anglia expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	42	40	37	36	35	190
Network operations	42	41	39	36	34	192
Traction electricity, industry costs and rates	60	73	77	79	84	373
Network maintenance	103	102	100	96	91	493
Schedule 4 & 8 costs	18	23	26	20	18	105
Total operating expenditure	**266**	**278**	**279**	**268**	**261**	**1,353**
Renewals	184	210	252	214	175	1,034
Enhancements	43	52	62	136	63	356
Total capital expenditure	**227**	**262**	**314**	**350**	**237**	**1,391**
Total expenditure	**493**	**540**	**593**	**619**	**499**	**2,743**

Table D.15: Our assessment of the indicative Anglia revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	266	278	279	268	261	1,353
Add: Long-run steady state amortisation	158	158	158	158	158	791
Add: Regulatory tax allowance	0	0	0	0	0	1
Add: Opex memorandum account	2	2	2	2	2	10
Gross rev. req. before cost of capital	**426**	**438**	**439**	**429**	**422**	**2,155**
Add: Allowed return (real cost of capital)	160	161	165	170	174	830
Less: Real equity surplus	(80)	(84)	(84)	(83)	(81)	(412)
Adjusted allowed return	80	77	81	87	93	419
Gross rev. req. pre-sustainability adjustments	**506**	**516**	**520**	**516**	**515**	**2,573**
Add: Additional amortisation (sustainability adjustment)	49	49	49	49	49	244
Gross revenue requirement	**555**	**565**	**569**	**565**	**564**	**2,817**
Less: other single till income	(53)	(59)	(63)	(68)	(72)	(315)
Net revenue requirement	**501**	**505**	**506**	**497**	**492**	**2,501**

Table D.16: Our assessment of the indicative Anglia key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	3,799	3,855	3,962	4,105	4,136	4,136
Closing Debt	2,491	2,511	2,580	2,684	2,671	2,671
£million (nominal prices)						
Financing costs (exc. FIM fee)	56	55	60	68	76	314
FIM fee	28	29	31	33	34	155
Total financing costs	84	84	90	100	110	469
Adjusted interest coverage ratio	1.03 x	1.03 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	65.6%	65.1%	65.1%	65.4%	64.6%	64.6%

Table D.17: Our assessment of the indicative East Midlands expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	24	23	22	21	20	110
Network operations	20	19	17	15	15	86
Traction electricity, industry costs and rates	20	23	24	26	32	125
Network maintenance	56	55	53	52	50	265
Schedule 4 & 8 costs	16	14	12	10	9	61
Total operating expenditure	**136**	**134**	**128**	**124**	**126**	**648**
Renewals	146	132	111	105	93	587
Enhancements	113	149	255	223	182	922
Total capital expenditure	**259**	**281**	**366**	**328**	**274**	**1,509**
Total expenditure	**395**	**415**	**494**	**452**	**400**	**2,157**

Table D.18: Our assessment of the indicative East Midlands revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	136	134	128	124	126	648
Add: Long-run steady state amortisation	101	101	101	101	101	505
Add: Regulatory tax allowance	0	0	-	-	-	0
Add: Opex memorandum account	1	1	1	1	1	6
Gross rev. req. before cost of capital	**239**	**237**	**230**	**226**	**228**	**1,159**
Add: Allowed return (real cost of capital)	106	112	121	130	138	607
Less: Real equity surplus	(52)	(56)	(57)	(56)	(55)	(276)
Adjusted allowed return	53	56	64	74	84	331
Gross rev. req. pre-sustainability adjustments	**292**	**293**	**294**	**300**	**312**	**1,490**
Add: Additional amortisation (sustainability adjustment)	16	16	16	16	16	82
Gross revenue requirement	**308**	**309**	**310**	**317**	**328**	**1,573**
Less: other single till income	(29)	(31)	(33)	(35)	(37)	(166)
Net revenue requirement	**279**	**278**	**277**	**281**	**291**	**1,406**

Table D.19: Our assessment of the indicative East Midlands key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	2,574	2,738	2,986	3,197	3,354	3,354
Closing debt	1,732	1,870	2,088	2,262	2,378	2,378
£million (nominal prices)						
Financing costs (exc. FIM fee)	37	40	48	58	69	252
FIM fee	19	21	24	27	30	121
Total financing costs	56	61	72	85	99	372
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	67.3%	68.3%	69.9%	70.8%	70.9%	70.9%

Table D.20: Our assessment of the indicative Kent expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	37	36	33	32	31	170
Network operations	30	29	28	28	24	139
Traction electricity, industry costs and rates	54	67	71	72	77	341
Network maintenance	74	72	68	66	64	344
Schedule 4 & 8 costs	17	21	16	17	16	87
Total operating expenditure	**212**	**224**	**217**	**216**	**212**	**1,081**
Renewals	205	198	173	171	180	928
Enhancements	501	509	460	371	139	1,981
Total capital expenditure	**706**	**707**	**634**	**543**	**319**	**2,909**
Total expenditure	**918**	**931**	**851**	**758**	**532**	**3,989**

Table D.21: Our assessment of the indicative Kent revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	212	224	217	216	212	1,081
Add: Long-run steady state amortisation	155	155	155	155	155	773
Add: Regulatory tax allowance	0	-	-	-	-	0
Add: Opex memorandum account	2	2	2	2	2	10
Gross rev. req. before cost of capital	**369**	**381**	**373**	**372**	**369**	**1,864**
Add: Allowed return (real cost of capital)	167	189	210	227	237	1,029
Less: Real equity surplus	(81)	(90)	(91)	(90)	(87)	(439)
Adjusted allowed return	86	100	118	136	150	590
Gross rev. req. pre-sustainability adjustments	**455**	**480**	**492**	**508**	**519**	**2,454**
Add: Additional amortisation (sustainability adjustment)	31	31	31	31	31	155
Gross revenue requirement	**485**	**511**	**523**	**539**	**550**	**2,609**
Less: other single till income	(86)	(94)	(101)	(108)	(114)	(503)
Net revenue requirement	**400**	**417**	**422**	**432**	**436**	**2,106**

Table D.22: Our assessment of the indicative Kent key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	4,222	4,744	5,192	5,549	5,683	5,683
Closing debt	2,942	3,415	3,803	4,088	4,142	4,142
£million (nominal prices)						
Financing costs (exc. FIM fee)	60	71	89	107	125	452
FIM fee	31	37	44	49	52	213
Total financing costs	91	108	132	156	177	665
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.01 x	1.01 x	1.02 x
Debt / RAB ratio	69.7%	72.0%	73.2%	73.7%	72.9%	72.9%

Table D.23: Our assessment of the indicative LNE expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	79	75	70	68	65	356
Network operations	71	70	65	62	59	328
Traction electricity, industry costs and rates	67	78	81	86	100	412
Network maintenance	164	161	154	151	148	779
Schedule 4 & 8 costs	33	42	40	39	50	203
Total operating expenditure	**414**	**425**	**410**	**405**	**423**	**2,078**
Renewals	382	434	392	434	471	2,113
Enhancements	260	269	218	309	129	1,184
Total capital expenditure	**642**	**703**	**609**	**743**	**599**	**3,297**
Total expenditure	**1,056**	**1,128**	**1,020**	**1,148**	**1,022**	**5,375**

Table D.24: Our assessment of the indicative LNE revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	414	425	410	405	423	2,078
Add: Long-run steady state amortisation	350	350	350	350	350	1,750
Add: Regulatory tax allowance	1	1	1	1	1	3
Add: Opex memorandum account	4	4	4	4	4	22
Gross rev. req. before cost of capital	**769**	**780**	**765**	**760**	**778**	**3,853**
Add: Allowed return (real cost of capital)	360	370	380	391	401	1,901
Less: Real equity surplus	(179)	(190)	(189)	(187)	(181)	(926)
Adjusted allowed return	180	180	191	204	220	975
Gross rev. req. pre-sustainability adjustments	**949**	**961**	**956**	**965**	**998**	**4,828**
Add: Additional amortisation (sustainability adjustment)	73	73	73	73	73	363
Gross revenue requirement	**1,022**	**1,033**	**1,029**	**1,037**	**1,070**	**5,191**
Less: other single till income	(108)	(117)	(127)	(136)	(145)	(632)
Net revenue requirement	**914**	**916**	**902**	**901**	**926**	**4,559**

Table D.25: Our assessment of the indicative LNE key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	8,632	8,912	9,099	9,419	9,596	9,596
Closing debt	5,721	5,916	6,011	6,236	6,310	6,310
£million (nominal prices)						
Financing costs (exc. FIM fee)	127	128	141	158	179	734
FIM fee	64	68	72	76	80	360
Total financing costs	191	196	213	234	259	1,094
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	66.3%	66.4%	66.1%	66.2%	65.8%	65.8%

Table D.26: Our assessment of the indicative LNW expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	109	104	97	94	90	495
Network operations	104	100	98	93	90	484
Traction electricity, industry costs and rates	115	138	147	156	165	720
Network maintenance	273	265	257	247	240	1,281
Schedule 4 & 8 costs	42	44	45	46	39	216
Total operating expenditure	**642**	**651**	**644**	**635**	**624**	**3,196**
Renewals	473	497	498	466	457	2,391
Enhancements	447	501	406	388	250	1,992
Total capital expenditure	**920**	**998**	**904**	**854**	**707**	**4,383**
Total expenditure	**1,562**	**1,649**	**1,548**	**1,489**	**1,331**	**7,579**

Table D.27: Our assessment of the indicative LNW revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	642	651	644	635	624	3,196
Add: Long-run steady state amortisation	432	432	432	432	432	2,159
Add: Regulatory tax allowance	1	1	1	1	1	4
Add: Opex memorandum account	5	5	5	5	5	27
Gross rev. req. before cost of capital	**1,080**	**1,089**	**1,082**	**1,073**	**1,062**	**5,387**
Add: Allowed return (real cost of capital)	448	468	488	505	518	2,426
Less: Real equity surplus	(223)	(237)	(237)	(234)	(227)	(1,157)
Adjusted allowed return	225	231	251	271	291	1,269
Gross rev. req. pre-sustainability adjustments	**1,306**	**1,321**	**1,333**	**1,344**	**1,353**	**6,656**
Add: Additional amortisation (sustainability adjustment)	46	46	46	46	46	232
Gross revenue requirement	**1,352**	**1,367**	**1,379**	**1,391**	**1,399**	**6,888**
Less: other single till income	(166)	(182)	(193)	(205)	(217)	(963)
Net revenue requirement	**1,186**	**1,185**	**1,186**	**1,185**	**1,182**	**5,925**

Table D.28: Our assessment of the indicative LNW key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	10,833	11,353	11,778	12,154	12,383	12,383
Closing debt	7,237	7,648	7,951	8,196	8,285	8,285
£million (nominal prices)						
Financing costs (exc. FIM fee)	158	164	186	211	238	958
FIM fee	80	87	94	100	105	467
Total financing costs	238	251	280	311	343	1,424
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	66.8%	67.4%	67.5%	67.4%	66.9%	66.9%

Table D.29: Our assessment of the indicative Sussex expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	25	24	22	22	21	113
Network operations	30	28	28	27	26	138
Traction electricity, industry costs and rates	46	56	59	61	63	285
Network maintenance	57	55	52	51	48	263
Schedule 4 & 8 costs	11	12	9	9	13	54
Total operating expenditure	**168**	**175**	**171**	**169**	**170**	**854**
Renewals	151	171	140	152	131	745
Enhancements	54	48	82	61	34	280
Total capital expenditure	**206**	**219**	**222**	**213**	**166**	**1,025**
Total expenditure	**374**	**394**	**393**	**382**	**336**	**1,879**

Table D.30: Our assessment of the indicative Sussex revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	168	175	171	169	170	854
Add: Long-run steady state amortisation	111	111	111	111	111	555
Add: Regulatory tax allowance	0	0	0	0	0	2
Add: Opex memorandum account	1	1	1	1	1	7
Gross rev. req. before cost of capital	**281**	**288**	**284**	**282**	**283**	**1,418**
Add: Allowed return (real cost of capital)	112	115	118	121	123	590
Less: Real equity surplus	(56)	(59)	(59)	(58)	(57)	(289)
Adjusted allowed return	56	56	59	63	66	300
Gross rev. req. pre-sustainability adjustments	**337**	**344**	**343**	**345**	**349**	**1,718**
Add: Additional amortisation (sustainability adjustment)	38	38	38	38	38	190
Gross revenue requirement	**375**	**382**	**381**	**383**	**387**	**1,908**
Less: other single till income	(79)	(87)	(93)	(99)	(105)	(463)
Net revenue requirement	**296**	**295**	**288**	**284**	**282**	**1,444**

Table D.31: Our assessment of the indicative Sussex key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	2,694	2,764	2,837	2,901	2,918	2,918
Closing debt	1,782	1,825	1,870	1,905	1,890	1,890
£million (nominal prices)						
Financing costs (exc. FIM fee)	40	40	44	49	54	225
FIM fee	20	21	22	23	24	111
Total financing costs	60	61	66	72	78	336
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	66.1%	66.0%	65.9%	65.6%	64.8%	64.8%

Table D.32: Our assessment of the indicative Wales expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	23	22	20	20	19	103
Network operations	25	24	23	24	21	117
Traction electricity, industry costs and rates	11	11	11	13	16	64
Network maintenance	60	58	57	55	54	284
Schedule 4 & 8 costs	19	11	18	9	7	64
Total operating expenditure	**139**	**125**	**130**	**121**	**117**	**632**
Renewals	173	140	143	108	100	664
Enhancements	31	42	75	156	82	387
Total capital expenditure	**203**	**182**	**218**	**264**	**183**	**1,051**
Total expenditure	**342**	**308**	**349**	**385**	**300**	**1,683**

Table D.33: Our assessment of the indicative Wales revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	139	125	130	121	117	632
Add: Long-run steady state amortisation	105	105	105	105	105	526
Add: Regulatory tax allowance	0	0	0	0	0	1
Add: Opex memorandum account	1	1	1	1	1	7
Gross rev. req. before cost of capital	**245**	**232**	**237**	**227**	**224**	**1,166**
Add: Allowed return (real cost of capital)	108	111	114	118	122	574
Less: Real equity surplus	(54)	(57)	(57)	(56)	(55)	(279)
Adjusted allowed return	54	54	57	62	67	295
Gross rev. req. pre-sustainability adjustments	**300**	**286**	**294**	**290**	**292**	**1,461**
Add: Additional amortisation (sustainability adjustment)	28	28	28	28	28	138
Gross revenue requirement	**327**	**314**	**321**	**317**	**319**	**1,599**
Less: other single till income	(30)	(32)	(34)	(36)	(38)	(171)
Net revenue requirement	**297**	**281**	**287**	**281**	**281**	**1,428**

Table D.34: Our assessment of the indicative Wales key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	2,605	2,655	2,740	2,871	2,921	2,921
Closing debt	1,728	1,752	1,811	1,913	1,931	1,931
£million (nominal prices)						
Financing costs (exc. FIM fee)	38	38	42	48	55	222
FIM fee	19	20	21	23	24	109
Total financing costs	58	59	64	71	80	331
Adjusted interest coverage ratio	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	66.3%	66.0%	66.1%	66.6%	66.1%	66.1%

Table D.35: Our assessment of the indicative Wessex expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	34	32	30	29	27	152
Network operations	31	30	30	27	26	143
Traction electricity, industry costs and rates	58	70	74	76	79	357
Network maintenance	87	85	83	78	73	407
Schedule 4 & 8 costs	16	15	18	20	15	83
Total operating expenditure	**225**	**233**	**235**	**230**	**220**	**1,143**
Renewals	190	190	225	217	180	1,003
Enhancements	40	49	113	226	285	714
Total capital expenditure	**230**	**239**	**338**	**443**	**466**	**1,717**
Total expenditure	**455**	**473**	**573**	**674**	**686**	**2,860**

Table D.36: Our assessment of the indicative Wessex revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	225	233	235	230	220	1,143
Add: Long-run steady state amortisation	155	155	155	155	155	775
Add: Regulatory tax allowance	0	0	0	0	0	2
Add: Opex memorandum account	2	2	2	2	2	10
Gross rev. req. before cost of capital	**382**	**390**	**392**	**388**	**377**	**1,929**
Add: Allowed return (real cost of capital)	157	158	162	170	181	828
Less: Real equity surplus	(79)	(82)	(82)	(82)	(80)	(405)
Adjusted allowed return	78	76	80	88	101	423
Gross rev. req. pre-sustainability adjustments	**460**	**466**	**472**	**476**	**478**	**2,352**
Add: Additional amortisation (sustainability adjustment)	46	46	46	46	46	228
Gross revenue requirement	**506**	**512**	**517**	**522**	**524**	**2,581**
Less: other single till income	(82)	(90)	(96)	(102)	(107)	(479)
Net revenue requirement	**423**	**421**	**421**	**420**	**417**	**2,102**

Table D.37: Our assessment of the indicative Wessex key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	3,732	3,771	3,909	4,151	4,416	4,416
Closing debt	2,451	2,454	2,555	2,758	2,978	2,978
£million (nominal prices)						
Financing costs (exc. FIM fee)	55	54	59	69	83	319
FIM fee	28	29	30	33	37	156
Total financing costs	83	82	89	102	119	475
Adjusted interest coverage ratio	1.03 x	1.03 x	1.02 x	1.02 x	1.02 x	1.02 x
Debt / RAB ratio	65.7%	65.1%	65.4%	66.4%	67.4%	67.4%

Table D.38: Our assessment of the indicative Western expenditure

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Support costs	43	41	39	37	36	195
Network operations	33	33	31	31	31	159
Traction electricity, industry costs and rates	26	27	27	41	65	187
Network maintenance	109	108	105	102	102	527
Schedule 4 & 8 costs	26	27	24	24	27	129
Total operating expenditure	**238**	**236**	**226**	**236**	**261**	**1,197**
Renewals	307	291	268	255	254	1,375
Enhancements	761	807	729	469	251	3,018
Total capital expenditure	**1,069**	**1,098**	**997**	**723**	**506**	**4,393**
Total expenditure	**1,307**	**1,334**	**1,224**	**959**	**767**	**5,590**

Table D.39: Our assessment of the indicative Western revenue requirement

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Add: Total operating expenditure	238	236	226	236	261	1,197
Add: Long-run steady state amortisation	181	181	181	181	181	905
Add: Regulatory tax allowance	0	0	-	-	-	1
Add: Opex memorandum account	2	2	2	2	2	11
Gross rev. req. before cost of capital	**422**	**420**	**410**	**419**	**444**	**2,115**
Add: Allowed return (real cost of capital)	199	234	266	291	305	1,295
Less: Real equity surplus	(96)	(108)	(110)	(110)	(105)	(529)
Adjusted allowed return	103	126	156	181	200	766
Gross rev. req. pre-sustainability adjustments	**525**	**546**	**565**	**600**	**645**	**2,881**
Add: Additional amortisation (sustainability adjustment)	94	94	94	94	94	470
Gross revenue requirement	**619**	**640**	**659**	**694**	**739**	**3,351**
Less: other single till income	(60)	(65)	(68)	(72)	(75)	(340)
Net revenue requirement	**559**	**575**	**591**	**622**	**664**	**3,011**

Table D.40: Our assessment of the indicative Western key financial information

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	5,124	5,947	6,669	7,117	7,348	7,348
Closing debt	3,626	4,388	5,029	5,379	5,502	5,502
£million (nominal prices)						
Financing costs (exc. FIM fee)	72	90	117	144	167	590
FIM fee	37	47	57	65	69	275
Total financing costs	109	137	174	208	236	864
Adjusted interest coverage ratio	1.02 x	1.02 x	1.01 x	1.01 x	1.01 x	1.02 x
Debt / RAB ratio	70.8%	73.8%	75.4%	75.6%	74.9%	74.9%

Annex E: Funding of enhancement projects

Summary

E.1. This annex summarises our determination on the funding of enhancement projects. In some cases specific schemes are being funded while in others Network Rail is funded to meet a specification.

E.2. Although we have assumed costs for delivering individual projects it is the total cost for England & Wales and for Scotland that we have used to determine how much revenue Network Rail needs. Because there are so many projects at an early stage of development we will revisit these assumptions by the end of 2014-15.

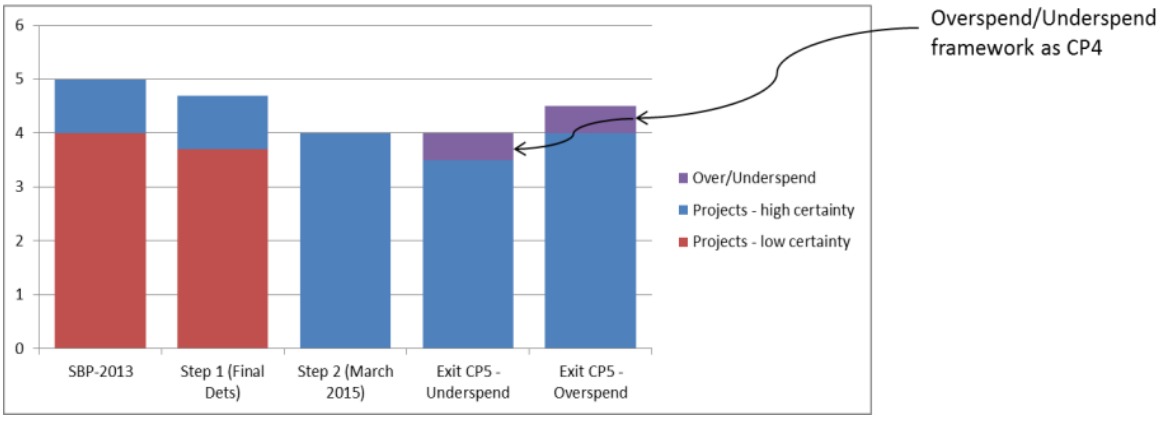
E.3. Once we have completed our second review Network Rail is free to budget for individual schemes as it sees fit and the underspend/overspend framework (RAB roll forward) will apply to the aggregate costs. The exceptions are:

(a) the ring-fenced funds, where Network Rail is funded for spending up to the caps shown in Table E.1; and

(b) schemes subject to bespoke target price arrangements. In England & Wales, these are Thameslink and Crossrail. In Scotland, these are EGIP and Borders.

E.4. Figure E.1 illustrates how the underspend/overspend framework will apply in CP5.

Figure E.1: Enhancements overspend/underspend in CP5



List of projects

Table E.1: Projects in England & Wales

£m (2012-13 prices)	Determination
Schemes not subject to further review and not included in the RAB roll forward	
Thameslink & Crossrail	3,064
Ring-fenced funds	1,179
Sub total	**4,243**
Schemes subject to further review by Mar 2015 and included in the RAB roll forward	
Electrification schemes	
Great Western electrification	
Bridgend to Swansea electrification	
North Trans-Pennine electrification	
Micklefield to Selby electrification	
North West electrification	
MML electrification	
Derby station area remodelling	
The electric spine	
Acton to Willesden electrification (WCML)	
Thames Valley branches	
Walsall to Rugeley electrification	
Welsh Valley Lines electrification	
Other committed projects	
East West rail	
Northern Hub	
IEP programme	
Reading station area redevelopment	
Stafford area improvement scheme	

£m (2012-13 prices)	Determination
West Coast power supply upgrade	
Other named schemes & CP4 rollover	
Oxford station area capacity and enlargement	
Huddersfield station capacity improvement	
Western access to London Heathrow Airport	
Service improvements in the Ely area	
Redhill additional platform	
Waterloo	
Dr Days to Filton Abbey Wood capacity	
Bristol Temple Meads passenger capacity	
Birmingham New Street Gateway	
Bromsgrove electrification	
Redditch branch enhancement	
Kent power supply upgrade (CP4)	
Barry - Cardiff Queen Street corridor	
HLOS capacity metric schemes	
Micklefield turnback	
South London HV traction power upgrade	
West Anglia Main Line capacity increase	
Bow Junction upgrade with turnbacks	
West of England DMU capability works	
South Yorkshire train lengthening	
East Kent re-signalling phase 2	
Stevenage and Gordon Hill turnbacks	
Reading, Ascot to Waterloo train lengthening	
West Yorkshire train lengthening	

£m (2012-13 prices)	Determination
Uckfield line train lengthening	
MML long distance train lengthening	
East Leeds area	
Route gauge clearance for different EMUs	
Bradford Mill Lane capacity	
Leeds platform 0	
Leeds station capacity	
Leeds platform 17 lengthening	
Chiltern Main Line train lengthening	
North West train lengthening	
New Cross Grid	
Anglia traction power supply upgrade	
Sussex traction power supply upgrade	
Wessex traction power supply upgrade	
London Victoria capacity improvements	
Kent traction power supply upgrade	
LNE routes traction power supply upgrade	
Sub total	**6,096**
Overlay for other adjustments[419]	**494**
GRAND TOTAL FOR ENGLAND & WALES	**10,833**

[419] Explained in Table 9.5.

Table E.2: Projects in Scotland

£m (2012-13 prices)	Determination
Schemes not subject to further review and not included in RAB roll forward	
Funds	145
EGIP: Springburn to Cumbernauld	16
Borders	127
Sub total	**288**
Schemes subject to further review by Mar 2015 but not included in RAB roll forward	
EGIP: Edinburgh to Glasgow electrification	
EGIP: Edinburgh gateway	
EGIP: Infrastructure	
Sub total	**474**
Schemes subject to further review by Mar 2015 and included in RAB roll forward	
Aberdeen to Inverness journey time improvements and other enhancements	
Highland Main Line journey time improvements	
Rolling programme of electrification	
Motherwell re-signalling enhancements	
Motherwell area stabling	
Other projects to meet the outputs	
Sub total	**582**
Overlay for other adjustments[420]	**62**
GRAND TOTAL IN SCOTLAND	**1,406**

[420] Explained in Table 9.7 in chapter 9.

Annex F: Further detail on the effect of the financial framework on the level of access charges

Introduction

F.1. This annex sets out:

(a) the total value of the fixed track access charge, if we assume that there are no network grant payments. If part of Network Rail's revenue requirement is not provided by network grants then access charges would increase by the same amount as the reduction in network grants; and

(b) what Network Rail's revenue requirement and access charges would be if we had used its cost of capital without making the adjusted WACC adjustments or using the PR08 ring-fenced approach. The changes to the calculation of the net revenue requirement would be that there would not be an equity surplus adjustment and we would revise the financial sustainability adjustment. To keep this analysis as straightforward as possible, we have assumed that there is no financial sustainability adjustment in this scenario (i.e. revenue is neither increased nor decreased). There are also small consequential changes to corporation tax.

F.2. Table F.1 sets out the fixed track access charges if part of Network Rail's revenue requirement is not provided by network grants. Tables F.2 to F.7 set out the calculation of Network Rail's revenue requirement if we had used its cost of capital without making the adjusted WACC adjustments or using the PR08 ring-fenced approach.

F.3. Chapter 16 on access charges also sets out the effect on charges of network grant and the adjusted WACC approach.

Table F.1: Our comparison of fixed track access charges including and excluding network grant for the whole of CP5

£m in 2012-13 prices	Fixed track access charges for CP5 (based on 5% headroom)	Network grant (based on 5% headroom)	Total	Fixed access charge without grant
Great Britain	4,366	19,586	23,952	23,952
England & Wales	3,559	17,661	21,220	21,220
Scotland	807	1,925	2,732	2,732

Table F.2: Our assessment of the CP5 revenue requirement for Great Britain (cost of capital)

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Total operating expenditure	2,692	2,748	2,703	2,656	2,658	13,456
Add: Long-run steady state amortisation (including non-capex amortisation)	1,959	1,959	1,959	1,959	1,959	9,794
Add: Regulatory tax allowance	4	4	4	124	221	356
Add: Opex memorandum account	23	23	23	23	23	115
Gross rev. req. before cost of capital	**4,677**	**4,734**	**4,689**	**4,761**	**4,860**	**23,721**
Add: Allowed return (real cost of capital)	2,035	2,176	2,317	2,446	2,545	11,518
Less: Real equity surplus	-	-	-	-	-	-
Adjusted allowed return	2,035	2,176	2,317	2,446	2,545	11,518
Gross rev. req. pre-sustainability adjustments	**6,712**	**6,909**	**7,006**	**7,207**	**7,406**	**35,239**
Add: Additional amortisation (sustainability adjustment)	-	-	-	-	-	-
Gross revenue requirement	**6,712**	**6,909**	**7,006**	**7,207**	**7,406**	**35,239**
Less: Other single till income	(747)	(813)	(867)	(921)	(973)	(4,321)
Net revenue requirement	**5,965**	**6,096**	**6,139**	**6,286**	**6,433**	**30,918**

Table F.3: CP5 key financial information for Great Britain (cost of capital)

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	49,831	53,298	56,520	59,426	61,234	61,234
Closing debt	32,486	34,322	35,809	36,897	36,832	36,832
£million (nominal prices)						
Financing costs (exc FIM fee)	708	737	837	952	1,066	4,300
FIM fee	358	392	423	451	469	2,094
Total financing costs	1,067	1,129	1,260	1,402	1,536	6,393
Adjusted interest coverage ratio	2.04 x	2.12 x	2.07 x	2.02 x	1.97 x	2.05 x
Debt / RAB ratio	65.2%	64.4%	63.4%	62.1%	60.1%	60.1%

Table F.4: CP5 revenue requirement for England & Wales (cost of capital)

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Total operating expenditure	2,440	2,482	2,439	2,405	2,415	12,182
Add: Long-run steady state amortisation (including non-capex amortisation)	1,748	1,748	1,748	1,748	1,748	8,739
Add: Regulatory tax allowance	3	3	3	104	195	309
Add: Opex memorandum account	22	22	22	22	22	111
Gross rev. req. before cost of capital	**4,214**	**4,256**	**4,213**	**4,279**	**4,380**	**21,341**
Add: Allowed return (real cost of capital)	1,826	1,945	2,068	2,185	2,278	10,302
Less: Real equity surplus	-	-	-	-	-	-
Adjusted allowed return	1,826	1,945	2,068	2,185	2,278	10,302
Gross rev. req. pre-sustainability adjustments	**6,040**	**6,201**	**6,280**	**6,464**	**6,658**	**31,643**
Add: Additional amortisation (sustainability adjustment)	-	-	-	-	-	-
Gross revenue requirement	**6,040**	**6,201**	**6,280**	**6,464**	**6,658**	**31,643**
Less: Other single till income	(694)	(759)	(810)	(861)	(910)	(4,034)
Net revenue requirement	**5,345**	**5,442**	**5,471**	**5,603**	**5,748**	**27,610**

Table F.5: CP5 key financial information for England & Wales (cost of capital)

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	44,636	47,578	50,433	53,147	54,856	54,856
Closing debt	29,214	30,698	32,005	33,098	33,133	33,133
£million (nominal prices)						
Financing costs (exc FIM fee)	638	660	747	851	957	3,854
FIM fee	323	352	378	403	422	1,878
Total financing costs	961	1,012	1,126	1,255	1,379	5,732
Adjusted interest coverage ratio	2.03 x	2.11 x	2.07 x	2.02 x	1.97 x	2.04 x
Debt / RAB ratio	65.4%	64.5%	63.5%	62.3%	60.4%	60.4%

Table F.6: CP5 revenue requirement in Scotland (cost of capital)

£millions (2012-13 prices)	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
Total operating expenditure	251	266	264	250	243	1,275
Add: Long-run steady state amortisation (including non-capex amortisation)	211	211	211	211	211	1,055
Add: Regulatory tax allowance	0	0	4	27	29	60
Add: Opex memorandum account	1	1	1	1	1	4
Gross rev. req. before cost of capital	**464**	**478**	**480**	**489**	**484**	**2,394**
Add: Allowed return (real cost of capital)	209	230	249	261	267	1,216
Less: Real equity surplus	-	-	-	-	-	-
Adjusted allowed return	209	230	249	261	267	1,216
Gross rev. req. pre-sustainability adjustments	**672**	**708**	**729**	**750**	**751**	**3,610**
Add: Additional amortisation (sustainability adjustment)	-	-	-	-	-	-
Gross revenue requirement	**672**	**708**	**729**	**750**	**751**	**3,610**
Less: Other single till income	(52)	(55)	(57)	(60)	(63)	(288)
Net revenue requirement	**620**	**653**	**672**	**690**	**687**	**3,323**

Table F.7: Our assessment of the CP5 key financial information for Scotland (cost of capital)

£millions	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 total
£million (2012-13 prices)						
Closing RAB	5,195	5,719	6,087	6,280	6,378	6,378
Closing debt	3,272	3,624	3,804	3,800	3,699	3,699
£million (nominal prices)						
Financing costs (exc FIM fee)	70	76	90	101	109	446
FIM fee	35	40	45	47	48	216
Total financing costs	105	117	135	148	157	661
Adjusted interest coverage ratio	2.11 x	2.15 x	2.08 x	2.03 x	2.01 x	2.08 x
Debt / RAB ratio	63.0%	63.4%	62.5%	60.5%	58.0%	58.0%

Annex G: Comparison of PR13 to the Rail Value for Money (RVfM) study

Structure of this annex

G.1. This annex has the following structure:

(a) introduction and background;

(b) key findings of the RVfM study;

(c) sources of efficiencies; and

(d) comparison of RVfM efficiencies to our determination.

Introduction and background

G.2. This annex summarises the purpose and key findings of the Rail Value for Money (RVfM) study led by Sir Roy McNulty and compares the study's recommendations on industry cost savings and efficiencies to our determination.

G.3. The RVfM study, published in May 2011, was commissioned jointly by DfT and ORR. As co-sponsor of the RVfM study, we welcomed and strongly endorsed its findings.

G.4. The aim of the RVfM study was to examine the overall cost structure of all elements of the railway sector and to identify options for improving value for money to passengers and the taxpayer while continuing to expand capacity as necessary and drive up passenger satisfaction. The report specifically did not examine possible cuts to the rail network[421].

Key findings of the RVfM study

G.5. The RVfM study identified a widespread recognition that the industry had problems in terms of efficiency and costs. It also highlighted that unit costs per passenger kilometre have not improved since the mid-1990s and that, based on 2008-09 costs, the industry's costs are 30% higher than European comparators.

[421] The terms of reference of the RVfM study are set out in Annex A of the RVfM Summary report, available at: http://www.rail-reg.gov.uk/upload/pdf/rail-vfm-summary-report-may11.pdf.

G.6. The RVfM study identified a number of key barriers within the industry to improving value for money. These included: the fragmentation of structures and interfaces; the ways in which the roles of Government and industry have evolved; ineffective and misaligned incentives; a franchising system that does not encourage cost reduction sufficiently; management approaches that fall short of best-practice in a number of areas that are key cost drivers; and a railway culture which is not conducive to the partnership and continuous improvement approaches required for effective cost reduction.

G.7. As a result of its analysis, the RVfM study recommended that the industry should aim to achieve a 30% reduction in unit costs (i.e. costs per passenger-km) by 2018-19, compared to 2008-09 costs. The study suggested a three part solution to improving efficiency:

(a) **changes to create an enabling environment**. This included greater clarity on rail policy, objectives and strategies, stronger and more cohesive industry leadership, changes to structures and interfaces to improve the ways in which rail organisations and people work together, incentives that are more effective and better aligned, a review of fares policy and structures, and greater clarity as to what Government subsidy is buying;

(b) **changes which deliver the major savings**: these focus principally on reaching best-practice in asset management, programme and project management, supply chain management, standards and technology, HR management, and pursuing initiatives in the areas of capacity utilisation, information systems, and new approaches to enable lower-cost regional railways; and

(c) **effective approaches to drive implementation**: developing an implementation plan with the involvement and commitment of all concerned to deliver the recommendations of the study, with a small independent 'change team' working closely with DfT and ORR, and a new industry leadership group – the Rail Delivery Group.

G.8. In support of its recommendations, the RVfM study identified a number of key areas where savings could be realised to deliver improved value for money. The majority of these savings were assumed to result from efficiencies in train operations, rolling stock companies and infrastructure management.

Sources of efficiencies

G.9. The RVfM study drew mainly on two types of analysis to support its recommendations for improving value for money by 2018-19:

(a) a desktop (or 'should cost') analysis, based on the evidence we gathered as part of PR08 and other GB and international railway benchmarking evidence; and

(b) a bottom-up analysis, based on an assessment of the individual savings that could be made if the recommendations of the study were to be implemented in full.

G.10. Figure G.1 sets out the areas of the industry that the RVfM study expected to generate savings between 2008-09 and 2018-19. The RVfM study assumed that Network Rail would provide between 67% and 81% of the total savings identified in the report.

Table G.1: Source of total RVfM efficiencies

Total RVfM efficiencies	Should cost assessment		Bottom-up assessment[422]	
2008-09 prices in £billion	**Low**	**High**	**Low**	**High**
Network Rail	1.8 (71%)	2.3 (67%)	2.2 (80%)	2.8 (81%)
Other (including TOC/ROSCOs)	0.7 (29%)	1.2 (33%)	0.6 (20%)	0.7 (19%)
Projected savings required	**2.5**	**3.5**	**2.8**	**3.4**

G.11. Our analysis of the RVfM study has focused on the savings that the report attributed to Network Rail, and more specifically those that the RVfM study assumed would be delivered in CP5. Table G.2 sets out the savings attributable to Network Rail and the rest of the industry in CP5, i.e. excluding efficiencies assumed to be achieved in CP4. For ease of comparison we have presented these savings in 2012-13 prices, as this is the price base for our determination. Table G.2 highlights that the proportion of CP5 RVfM savings in CP5 attributable to Network Rail is between 49% and 73%. Although Network Rail's contribution to the RVfM savings is significant, i.e. between half and three quarters of the total savings, the study still expected the rest of the industry to contribute substantial savings, e.g. from train operations, rolling stock arrangements

[422] In the RVfM study, the bottom-up savings are presented on a funding basis in 2009-10 prices, i.e. including the implications of Network Rail's funding via the RAB. In Tables G.1 and G.2, we have set out the RVfM bottom-up assessment of efficiencies on an expenditure basis to be comparable with the 'should cost analysis'.

and freight operations. Even for the savings attributed to Network Rail, in many cases these savings are dependent on changes or reforms not just within Network Rail but also from other parts of the industry. For example, costs savings from improved alignment of incentives between different industry participants, spreading of peak demand and more track-friendly trains cannot be achieved by Network Rail alone.

Table G.2: Source of CP5 RVfM efficiencies

CP5 RVfM efficiencies	Should cost assessment		Bottom-up assessment[422]	
2012-13 prices in £billion	**Low**	**High**	**Low**	**High**
Network Rail	0.7 (49%)	1.2 (52%)	1.1 (68%)	1.8 (73%)
Other (including TOC/ROSCOs)	0.7 (51%)	1.2 (48%)	0.5 (32%)	0.7 (27%)
Projected savings required	**1.4**	**2.4**	**1.6**	**2.5**

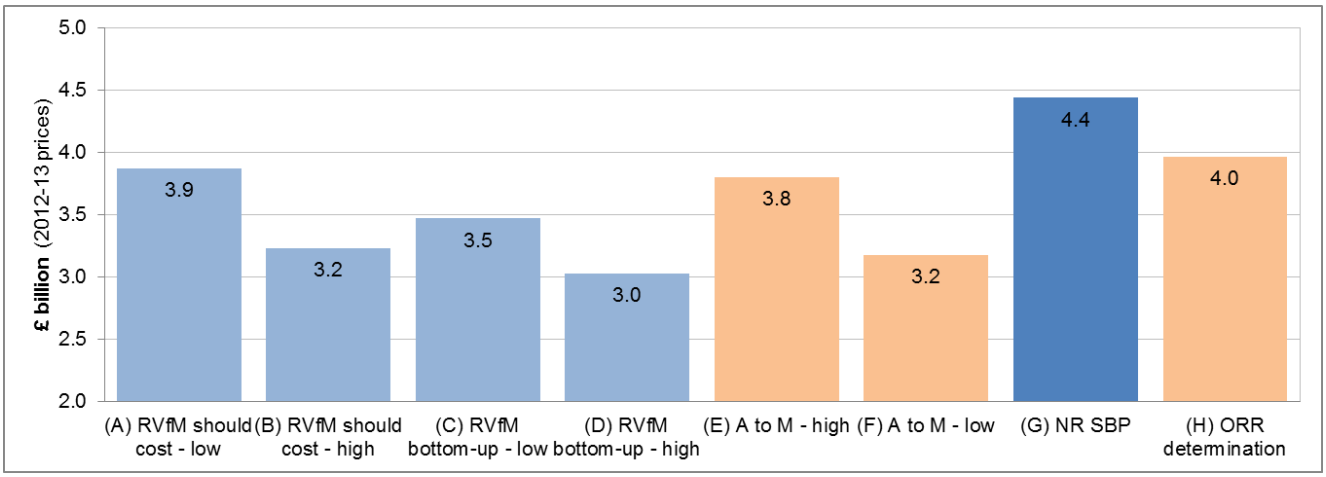
Comparison of efficiencies identified by RVfM study

G.12. In chapter 4, we summarise the efficiencies that we expect Network Rail to achieve in its support, operations, maintenance and renewals costs by the end of CP5. Below we compare our PR13 assumptions on the Network Rail's CP5 post-efficient costs to those in the RVfM study[423].

G.13. The RVfM study was based on the industry structure (and costs and revenues) in 2008-09. In Figure G.2, we present the assumed total value of Network Rail's support, operations, maintenance and renewals costs in 2018-19 as per the RVfM study, Network Rail's SBP and our determination.

[423] The RVfM study also set out recommendations for achieving savings of between around £160m and £325m (in 2013-13 prices) in Network Rail's enhancements costs. These savings were only reflected in its bottom-up analysis and for comparability with the RVfM should cost assessment, we have excluded enhancements costs from the analysis below.

Figure G.1: Comparison of Network Rail's 2018-19 costs



G.14. In financial terms our determination is below Network Rail's SBP but above the RVfM study and our advice to ministers ranges. It is difficult to compare our findings directly with those of the RVfM study, because that study did not take account of increasing outputs or longer term sustainability issues (such as the extra volumes of civils work we now consider need to be delivered). The RVfM study also said that achieving its high estimates for the industry as a whole depended on wide ranging changes across the industry. We are slightly above our advice to ministers range, reflecting the better information we now have.

G.15. In this periodic review we have established and drawn on a much deeper and robust base of studies, with newer evidence and analysis, than was available to the RVfM study or at the time of our advice to ministers. The review sets a strong efficiency challenge and our plans for enhancements efficiency develop this challenge further. Taking all this into account we believe that the efficiency challenge identified in the RVfM study for Network Rail itself will have been fully addressed for CP5.

G.16. It should also be noted that the RVfM study identified savings of £0.5bn to £1.2bn that it considered other parts of the industry, mainly train operators, could make by the end of CP5.

Annex H: List of consultancy and independent reporter studies

Introduction

H.1. This annex sets out the studies carried out by our consultants and the independent reporters that have informed our work on this determination. These are available on our website[424].

Table H.1: List of studies by our consultants and the independent reporters that have informed our determination

Consultancy / reporter study	Consultancy/ reporter firm	Date
Relative infrastructure managers' efficiency study – Evaluation of Gap Analysis Factors	RailKonsult	July 2011
Network Rail materials costs benchmarking study	Arup	August 2011
Initial Industry Plan 2011 Review	AMCL	December 2011
Initial Industry Plan (IIP) 2011 Review	Arup	December 2011
Using Incentives to Improve Capacity Utilisation	NERA	December 2011
Network Rail's Allowed Return	First Economics	December 2011
Review of Network Rail's process to capture enhancement costs	Nichols	January 2012
Network Rail bottom-up benchmarking programme audit	Arup	January 2012
Assessment of robustness of property income forecasts of Network Rail in the Initial Industry Plan (IIP)	DTZ	January 2012
Efficient Expenditure Benchmarking of Network Rail against North American Railroads	RailKonsult	January 2012
Impact of changes in track access charges on rail freight traffic - Stage 1 Report	MDS Transmodal	February 2012

[424] http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php.

Consultancy / reporter study	Consultancy/ reporter firm	Date
Network Rail bottom-up benchmarking review: benchmarking of operations costs	Arup	March 2012
Network Rail's Efficient Enhancement Expenditure	Steer Davies Gleave	March 2012
Scope for improvement in the efficiency of Network Rail's expenditure on support and operations: supplementary analysis of productivity and unit cost change	CEPA	March 2012
Corporate Finance advice on proposals for Network Rail to raise risk capital. Paper 4: Approach to Cost of Capital and Financing	RBC Capital Markets	March 2012
Review of Analysis in Network Rail's 'Freight Cap' Consultation	Arup	May 2012
The Impact of Changes in Access Charges on the Demand for Coal	NERA	May 2012
Review of Network Rail's Supply Chain Management	Civity	May 2012
Network Rail Project and Programme Management Capability	Halcrow	May 2012
IIP Tier 0 & 1 Model Audits	Arup	June 2012
Response to Network Rail Consultation: Variable Usage Charge Estimates and Freight Caps	Morgan Tucker consulting engineers	June 2012
Impact of changes in track access charges on freight traffic. Stage 2 Report: Impact of increases of above 100% on specific commodities.	MDS Transmodal	July 2012
Assessment of Network Rail's CP4 and CP5 savings - Asset Management Segment	Civity	July 2012
Possession Management Review for PR13	Lloyd's Register Rail	July 2012
North West Electrification Programme Management Review	Nichols	July 2012
Review of CP4 Regulated Outputs	Arup	August 2012
RM3 Evaluation of the capability of Network Rail to deliver its Operating Strategy Programme	ORR	September 2012

Consultancy / reporter study	Consultancy/ reporter firm	Date
Update to 'The Impact of Changes in Access Charges on the Demand for Coal' May 2012 NERA assessment	NERA	October 2012
Review of Network Rail VTISM modelling and allocation to market segments for Freight Avoidable Costs	Arup	November 2012
Reduction in Schedule 4 and 8 payment rates	Steer Davies Gleave (SDG)	November 2012
EC4T Transmission losses (AC and DC): Estimate review, final report	AMCL	December 2012 * published in April 2013
Econometric Benchmarking and its uses by ORR: a review	Jon Stern	January 2013
Analysis of road and rail costs between coal mines and power stations	MDS Transmodal	January 2013
Review of Network Availability Forecasts in SBP	Arup	February 2013
Innovation efficiency study	RailKonsult	March 2013
Review of asset management best practice - Inspections and Maintenance	RailKonsult	March 2013
ERTMS Programme Review	Halcrow	March 2013
Review of Network Availability Alternative Metrics	Arup	March 2013
Check of Network Rail's HLOS capacity metrics for CP4 and CP5	Arup	April 2013
Review of Network Rail's Access Charge Supplement Calculation	Arup	April 2013
Review of Network Rail's SBP infrastructure enhancement proposals for CP5	Nichols	April 2013
Review of Coal Spillage Charge	Arup	April 2013
International benchmarking of Network Rail's operations and support functions expenditure	Civity	April 2013
HLOS performance and reliability analysis and targets	Nichols	April 2013
PR13 Maintenance and Renewals Review	AMCL	May 2013

Consultancy / reporter study	Consultancy/ reporter firm	Date
Audit of Asset Data Quality	Arup	May 2013
PR13 Maintenance and Renewals Review • Summary report • Policy and WLCC Model Review	Arup	 May 2013 June 2013
Review of Network Rail's carbon reduction calculations and CP5 trajectory	Arup	May 2013
Cost of Capital	CEPA	May 2013
Property Income	DTZ	May 2013
Assessment of Network Rail's Management of Inflation	Credo	May 2013
Benchmarking employment costs at Network Rail: A research report for the Office of Rail Regulation (ORR)	Incomes Data Services (IDS)	May 2013
Insurance	Willis	May 2013
2013 SBP AMEM Assessment	AMCL	May 2013
PR13 review of Network Rail's Maintenance & renewal unit costs used in planning	Arup	June 2013
Bottom-up benchmarking review - 2012 update	Arup	June 2013
Standards Efficiency Study	Nichols	June 2013
PR13 review of Network Rail CP5 efficiency proposals	Arup	June 2013
Rail Specific Plant - Review of Investment Case	Halcrow	July 2013
Update report on the scope for improvement in the efficiency of Network Rail's expenditure over CP5.	CEPA	June 2013
Scope for improvement in the efficiency of Network Rail's expenditure on support and operations: supplementary analysis of productivity and unit cost change.	CEPA	June 2013
Model Audit Report	PKF	June 2013
Assessment of EAU charge proposals: PR13 review	AMCL	June 2013
Update of Schedule 8 payment rates	Halcrow	June 2013

Consultancy / reporter study	Consultancy/ reporter firm	Date
Final report on recalibration of Schedule 8 benchmarks and update of payment rates	Halcrow	August 2013

Annex I: PR13 stakeholder engagement

Introduction

I.1. This annex gives an overview on the engagement we have carried out with stakeholders throughout PR13.

Our consultations and supporting workshops

I.2. Table I.1 below sets out all of our consultations during the course of PR13 and the main workshop events held by us.

Table I.1

Published document	Purpose / workshops / seminars
Periodic review 2013: First consultation document, May 2011	The purpose of this document was to: • explain the context, process and timetable for the review to allow stakeholders to plan their engagement; • set out our objective for PR13; and • consult on a range of key issues relating to the approach we will take to determining Network Rail's outputs and access charges for CP5. **Supporting workshops** As part of the consultation process, we held workshops in Edinburgh (5 July 2011); Cardiff (11 July 2011), London (12 July 2011) and Manchester (21 July 2011). During and after this consultation we also held sessions focused on particular areas to help us develop our thinking: • a workshop on the Schedule 8 performance regime on 25 July 2011; • workshops on efficiency benefit sharing and capacity utilisation on 23 September 2011; and • a workshop on the Schedule 4 possessions regime on 11 November 2011.

Published document	Purpose / workshops / seminars
Establishing Network Rail's efficient expenditure PR13 consultation, July 2011	The purpose of this document was to explain our approach to establishing the level of efficient expenditure for Network Rail in CP5, including the methods we intended to use, the range of studies we intended to undertake and the work Network Rail would do in this area. We held a workshop on this consultation on 21 September 2011. We also held a follow-up workshop on 26 October 2012 to update industry stakeholders on the progress of our work on assessing the efficient levels of expenditure for Network Rail, including how we planned to assess efficient expenditure elements of Network Rail's SBP once it was published in January 2013
Invitation to comment on the Initial industry plans, September 2011	This was not a formal consultation, but an opportunity for stakeholders to support and inform ORR's analysis of the Initial industry plans (IIPs) produced by Network Rail and the industry. Our analysis of the IIPs was a key input into our advice to ministers documents, published in March 2012. We also provided all the responses to Network Rail, DfT and Transport Scotland to help feed into their planning work for the HLOSs and SBP.
Consultation on the potential for increased on-rail competition, October 2011	This consultation asked for stakeholder views on the potential for increased on-rail competition.
Consultation on incentives, December 2011	This document followed up our May 2011 consultation document and set out more detailed issues and proposals relating to incentives as part of our work on PR13. We held a workshop on 9 January 2012 to discuss the issues raised in our incentives consultation.
Advice to ministers & ORR's requirements for Network Rail's strategic business plan, March 2012	These documents set out our advice to Scottish Ministers and the Secretary of State on Network Rail's costs and outputs for control period 5 ('CP5'). This was to inform the decisions that the two governments would make on what they wanted the railways to achieve in CP5 and the public funds required to deliver this when they published their 'high-level output specification' (HLOS) and 'statement of funds available' (SoFA). We also issued our requirements to Network Rail for its strategic business plan.
Setting the financial and incentive framework for Network Rail in CP5, May 2012	This document concluded on a number of issues raised in three previous consultations: • our first consultation on PR13; • consultation on the potential for increased on-rail competition; and • our consultation on incentives.

Published document	Purpose / workshops / seminars
Aligning incentives to improve efficiency: update and further consultation, May 2012	This provided an update, following the first consultation on PR13 and the consultation on incentives, on our position on the introduction of route-level efficiency benefit sharing (REBS) in CP5. It sought views on the options for how REBS would interact with alliancing. We also sought views on proposals to introduce a regulatory mechanism to expose train operators to changes in Network Rail's costs at future periodic reviews, and an alternative proposal for exposing franchised train operators to changes in the variable usage charge.
Consultation on the variable usage charge and a freight specific charge, May 2012	This consultation sought views on the likely scale of the variable usage charge for CP5, in order for us to establish a cap on the average level of the variable usage charge. We also consulted on the introduction of a new track access charge for certain rail freight commodities to recover infrastructure costs caused by freight operating on the network that are not currently recovered from other freight charges. We held a workshop on 18 May 2012 and a follow-up workshop on 5 July 2012 to give stakeholders the opportunity to ask questions and discuss our proposals. We also held a number of meetings with stakeholders on issues relating to this workstream.
Network Rail's output framework for 2014-19, August 2012	Following the two HLOSs, this consultation sought views on: the outputs that we should Network Rail for CP5; the main indicators we would use to monitor Network Rail; and the enablers (measures of Network Rail's capability to deliver). We held a workshop on this consultation on 7 September 2012.
Consultation on financial issues for Network Rail in CP5, August 2012	This document consulted on detailed issues relating to the financial framework that would apply to Network Rail in CP5, such as our approach to inflation risk. We held a workshop to discuss the consultation on 5 September 2012.
Consultation on Schedules 4 and 8 possessions and performance regimes, November 2012	Following up on high-level decisions taken through previous consultations, this document sought views on a range of detailed issues relating Schedules 4 and 8 of track access contracts (the compensation train operators receive for the financial impact of planned and unplanned rail service disruption attributable to Network Rail or other train operators). We held a workshop on this consultation on 16 January 2013
Consultation on financial issues for Network Rail in CP5: decisions, December 2012	This concluded on our consultation issued on 1 August 2012.
Volume incentive consultation, December 2012	This consultation set out our package of proposals to improve the effectiveness of the volume incentive. We held a focused industry seminar on this on 28 January 2013

Published document	Purpose / workshops / seminars
Aligning incentives to improve efficiency: decisions, December 2012	This concluded on our consultation issued on 3 May 2012.
Invitation to comment on Network Rail's strategic business plan, January 2013	Whilst not a formal consultation, we sought stakeholders views on Network Rail's SBP documentation to help inform our analysis. We also held a stakeholder workshop on 13 February 2013 at which Network Rail presented its SBP and we chaired a discussion.
Conclusions on the average variable usage charge and a freight specific charge, January 2013	This document concluded on our May 2012 consultation on the variable usage charge and a freight specific charge.
Consultation on a freight specific charge for biomass, February 2013	This consultation was issued following the conclusions document issued on 11 January 2013.
Consultation on electricity for traction charges for control period 5, April 2013	This consultation followed-up our high-level decisions on traction electricity charges in our *Setting the financial and incentive framework for Network Rail in CP5* document from May 2012. In particular, it sought views on the assumed levels of transmission losses for CP5 and how we proposed to reform the volume wash-up.
Consultation on contingency planning for PR13 implementation, April 2013	This set out our proposed approach in the event of a delay to the statutory implementation process.

Other engagement

I.3. As infrastructure manager, Network Rail has carried out significant engagement and consultation as part of PR13, particularly in respect of access charges. This work informed its submissions to us. Its website sets out details of this engagement[425]. We have been involved in this work, including through attendance of industry working groups relating to charges, such as the variable track access charge group, capacity charge working group and traction electricity steering group (TESG). Further detail on this is set out in chapter 16 relating access charges.

I.4. We also established industry working groups to discuss issues relating to specific PR13 issues. This includes for example the 'Schedules 4 and 8 for passenger

[425] http://www.networkrail.co.uk/publications/delivery-plans/control-period-5/periodic-review-2013/pr13-closed-consultations/.

operators' industry group' and 'Schedules 4 and 8 for freight operators' industry group'. These discuss technical and policy issues relating to the update of Schedules 4 and 8 possessions and performance regimes for passenger and freight operators.

I.5. Besides this, we have held many regular and ad-hoc bilateral and multilateral meetings with stakeholders over the course of PR13. This includes the 'QUADs' group which has met since late 2011 to discuss key issues relating to PR13. The QUADs group consists of DfT, Transport Scotland, ATOC, the Rail Freight Operators' Association, Network Rail and ORR.

Annex J: ORR's statutory duties

Introduction

J.1. We have a number of statutory duties which we must balance when exercising our economic functions. These duties are not in any order of priority and do not point in any one direction. In reaching our decisions, we have considered all of our statutory duties and weighed them as we considered appropriate.

Our statutory duties

J.2. We have the following duties under Section 4 of the Railways Act 1993:

- To promote improvements in railway service performance;
- Otherwise to protect the interests of users of railway services;
- To promote the use of the railway network in Great Britain for the carriage of passengers and goods, and the development of that railway network, to the greatest extent which we consider economically practicable;
- To contribute to the development of an integrated system of transport of passengers and goods;
- To contribute to the achievement of sustainable development;
- To promote efficiency and economy on the part of persons providing railway services;
- To promote competition in the provision of railway services for the benefit of users of railway services;
- To promote measures designed to facilitate the making by passengers of journeys which involve use of the services of more than one passenger service operator;
- To impose on the operators of railway services the minimum restrictions which are consistent with the performance of our functions under Part 1 of the Railways Act 1993 or the Railways Act 2005 that are not safety functions;
- To enable persons providing railway services to plan the future of their businesses with a reasonable degree of assurance;

- To take into account the need to protect all persons from dangers arising from the operation of railways;
- To protect the interests of users and potential users of services for the carriage of passengers by railway provided by a private sector operator, otherwise than under a franchise agreement, in respect of the prices charged for travel by means of those services, and the quality of the service provided;
- To have regard to the effect on the environment of activities connected with the provision of railway services;
- To protect the interests of persons providing services for the carriage of passengers or goods by railway in their use of any railway facilities which are for the time being vested in a private sector operator, in respect of the prices charged for such use and the quality of the service provided;
- In the case of our safety functions other than those we have as an enforcing authority for the purposes of the Health & Safety at Work etc. Act 1974, to have regard to any general guidance given to us by the Secretary of State about railway services or other matters relating to railways;
- To act in a manner which we consider will not render it unduly difficult for persons who are holders of network licences (i.e. Network Rail) to finance any activities or proposed activities of theirs in relation to which we have functions;
- To have regard to any notified strategies and policies of the National Assembly for Wales, so far as they relate to Welsh services or to any other matter in or as regards Wales that concerns railways or railway services;
- To have regard to the ability of the National Assembly for Wales to carry out the functions conferred or imposed on it by or under any enactment;
- To have regard to any general guidance given by the Secretary of State about railway services or other matters relating to railways;
- To have regard to any general guidance given by Scottish Ministers about railway services wholly or partly in Scotland or about other matters in or as regards Scotland that relate to railways and when doing this to give appropriate weight to the extent (if any) to which the guidance relates to matters in respect of which expenditure is to be or has been incurred by Scottish Ministers;

- To have regard to the funds available to the Secretary of State for the purposes of his functions in relation to railways and railways services;
- To have regard to the ability of the Mayor of London and Transport for London to carry out the functions conferred or imposed on them by or under any enactment;
- To have regard, in particular, to the interests of persons who are disabled in relation to services for the carriage of passengers by railway or to station services; and
- To have regard to the interests, in securing value for money, of the users or potential users of railway services, of persons providing railway services, of the persons who make available the resources and funds and of the general public.

J.3. We also have duties under other legislation, as follows:

- Section 17 of the London Olympic Games and Paralympic Games Act 2006 provides that section 4(1) of the Railways Act 1993 shall be treated as including the objective of facilitating the provision, management and control of facilities for transport in connection with the London Olympics. We do not consider this duty will be relevant for CP5.
- Section 21 of the Channel Tunnel Rail Link Act 1996 gives us an overriding duty to exercise our regulatory functions in such a manner as not to impede the performance of any development agreement. We do not expect this duty to be engaged as part of PR13.
- Section 22 of the Crossrail Act 2008 provides that section 4(1) of the Railways Act 1993 shall be treated as including the objective of facilitating the construction of Crossrail.
- Section 72 of the Regulatory Enforcement and Sanctions Act 2008 requires us to keep our functions under review and secure that in exercising these functions that we do not:
  - impose burdens which we consider to be unnecessary, or
  - maintain burdens which we consider to have become unnecessary.

J.4. We also have an equalities duty under Section 149 of the Equality Act 2010 which requires us in the exercise of our functions to have due regard to the need to:

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under that Act;
- advance equality of opportunity between persons who share a relevant protected characteristic[426] and persons who do not share it; and
- foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

[426] relevant protected characteristics are – age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; and sexual orientation.