OFFICE OF RAIL REGULATION

2013 Periodic Review

Advice to Scottish Ministers on Network Rail's costs and outputs in CP5

15 March 2012

Office of Rail Regulation

Contents

Abbreviations and acronyms

Abbreviation / acronym	Meaning
AOCL	Automatic open crossings, locally monitored
Capex	Capital expenditure
CAPM	Capital asset pricing model
CIRAS	Confidential Incident Reporting & Analysis System
CP3	Control Period 3 (which ran from 1 April 2004 to 31 March 2009)
CP4	Control Period 4 (1 April 2009 – 31 March 2014)
CP5	Control Period 5 (expected to run from 1 April 2014 to 31 March 2019)
CST	Common Safety Targets
DfT	Department for Transport
DP11	Network Rail's 2011 delivery plan
EGIP	Edinburgh-Glasgow Improvement Programme
ERA	European Rail Agency
FIM	Financial indemnity mechanism
FOC	Freight operating company
FWI/yr	Fatalities and weighted injuries per year
FWSI	Fatalities and Weighted Serious Injuries
GRIP	Network Rail's 'Governance for Railway Investment Projects'
HLOS	High-level output specification
IIP	Initial industry plan (N.B. Two documents were published – one for England & Wales and one for Scotland)
IOPI	Infrastructure output price index
LEMS	Labour, energy, materials and services

LICB	The dataset of international comparators established by UIC, the International Union of Railways
NRDF	Network Rail Discretionary Fund
NRV	National Reference Value
NSIP	National Stations Improvement Programme
Opex	Operating expenditure
OSTI	Other single till income
PPM	Passenger Performance Measure
PR08	The 2008 periodic review (relating to CP4)
PR13	The 2013 periodic review (relating to CP5)
RAB	Regulatory asset base
RAGs	Regulatory accounting guidelines
RDG	Rail Delivery Group
REEM	Real Economic Efficiency Measure
ROSCO	Rolling stock leasing company
RPI	Retail Prices Index
RSSB	Railway Safety and Standards Board
RUOE	Real unit operating expenditure
RVfM	The Rail Value for Money study
SBP	Network Rail's strategic business plan for CP5, due by 7 January 2013
SFAIRP	So far as is reasonably practicable
SoFA	Statement of funds available
SRM	RSSB's Safety Risk Model
TFP	Total factor productivity
The Act	The Railways Act 1993
TOC	Train operating company
WACC	Weighted average cost of capital

Executive summary

Purpose of this document

1. The 2013 periodic review (PR13) will determine the outputs that Network Rail will be required to deliver in control period 5 (CP5) and the access charges the company can levy on train operators for using its network. We expect CP5 to run from 1 April 2014 to 31 March 2019. PR13 will also establish the wider 'regulatory framework' for CP5. This includes the financial framework within which Network Rail operates and the incentives that will encourage both it and train operators (and through them on suppliers and ROSCOs) to deliver and outperform our determination, including targets for performance and assumptions for efficiency. We plan to publish our final determination for CP5 in October 2013.

2. This document is an important step in the PR13 process. Its main purpose is to:

(a) begin the 'formal review' phase of PR13;

(b) provide advice to Scottish Ministers on the possible range for Network Rail's revenue requirement in Scotland for CP5, based on the work we have completed to date. This is intended to assist Scottish Ministers in developing their 'high level output specification' (HLOS) and 'statement of funds available' (SoFA) for CP5 that will be published by the end of July 2012; and

(c) provide advice on how the outputs in the HLOS could be structured.

3. We are also publishing a similar document setting out our advice to the Secretary of State for Transport, in respect of England & Wales[1]. However, for reference, we have included in Annex B of this document the key financial figures for Network Rail across Great Britain as a whole.

PR13 objective and context

4. Our high-level objective for PR13 is to protect the interests of customers and taxpayers by:

ensuring our determination enables Network Rail and its industry partners to deliver or exceed all the specified outcome and output requirements safely and sustainably at the most efficient levels possible comparable with the best railways in the world by the end of the control period.

5. Furthermore, we see PR13 as an important facilitator and driver of industry reform, through:

(a) a clear **focus on what matters** to passengers, freight customers and taxpayers – particularly improving value for money;

(b) a **more disaggregated approach** – increasing transparency, facilitating greater localism, and in due course allowing a more comparative approach to regulation;

[1] This is available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

(c) **alignment of incentives** – improving the interfaces between different players in the industry, facilitating alliances, efficiency benefit sharing at the route level and bespoke arrangements;

(d) **greater contestability** – ensuring that there is more competition in the provision of infrastructure-related services where appropriate, delivering further savings.

Access charges review initiation notice

6. At the same time this document is published, we are serving a review initiation notice informing Scottish Ministers, the Secretary of State and HM Treasury and other relevant parties of our proposal to undertake a review of access charges, under paragraph 1C of Schedule 4A to the Railways Act 1993. That notice starts the formal review phase of PR13.

Ranges for Network Rail's revenue requirement

Overall approach to establishing ranges

7. At this stage in PR13, there is still uncertainty around Network Rail's revenue requirement for CP5 so we are producing what we consider to be plausible ranges for this. Our calculation of the revenue requirement follows the normal building block approach[2].

8. The Initial Industry Plan (IIP) for Scotland, published in September 2011 by Network Rail and its industry partners, has been a key input to our assessment. The IIP was produced at our request to inform the periodic review process including the development of the HLOS and SoFA and planning more generally. (A separate IIP for England & Wales was also produced which we have considered for our advice to the Secretary of State.)

9. Our range for the revenue requirement is produced for what the IIP terms the 'current railway'. This is the railway at the end of CP4 but including committed enhancements (i.e. those funded through PR08 or subsequent to PR08 but not yet completed) and the outputs, such as train performance, assumed by the IIP. It also includes some specific investments to reduce costs in CP5 and beyond.

10. At this stage, we have taken as given Network Rail's assumptions in the IIP regarding the proposed industry outputs, network capability and capacity, safety and environmental performance, and the company's assumptions of forecast demand. However we have formed our own view of how much funding we consider the company might need based on our review and challenge of the IIP and Network Rail's work, as well as the studies we have commissioned.

11. We have also assumed that Network Rail achieves the expenditure levels, efficiencies and outputs we built into our PR08 determination for CP4 in accordance with its delivery plan 2011 (DP 2011). Therefore, the value of the closing regulatory asset base (RAB) and debt for CP4 is, for the purposes of this assessment, as projected by Network Rail in its DP 2011. We will review our assumptions for the CP4 'exit rate' in more detail as part of deriving our final determination for CP5.

12. There are still a wide range of issues and uncertainties to be resolved in PR13. At this stage, our assessment takes account of many of the uncertainties. However, there are some areas of policy choice

[2] The key element of the model is that operating expenditure is remunerated on a 'pay-as-you-go' basis and capital expenditure is, generally, added to the Regulatory Asset Base (capitalised) and remunerated through the amortisation charge and a return on the RAB.

and/or uncertainty which mean that we cannot provide narrower ranges, and indeed the final revenue requirement could ultimately lie outside the range presented here, for instance due to government policy choices or due to uncertainty in financial markets.

13. Our assessment does not make any assumptions about the potential reduction to Network Rail's revenue requirement arising from the possibility that it lets an infrastructure concession during CP5. Similarly, we have not made any assumptions about the potential reduction in Network Rail's expenditure, other single till income and RAB (and hence revenue requirement) from the transfer to train operating companies (TOCs) of greater responsibilities for the management of stations.

14. When we make our final determination for CP5 we will make decisions as part of a package which is challenging but achievable for Network Rail. In doing this we will consider the balance of risk and reward and the strength of incentives. At this stage, our assessment does not take into account the extent to which incentives will affect the revenue requirement.

Financial structure scenarios

15. Network Rail's financial structure is an important driver of the company's revenue requirement. Working with Transport Scotland, Department for Transport (DfT) and Network Rail, we hope to be able to reach a clearer position on the company's financial structure by the time we publish our Framework for Setting Network Rail's Funding document in April 2012.

16. At this stage, because the different approaches can give rise to significant differences in the revenue requirement, and in order to draw out clearly the implications of the different options, we have produced separate revenue ranges for two alternative financial structure scenarios:

(a) the **PR08 approach**. This approach assumes that Network Rail's return in CP5 will be based on a weighted average cost of capital (WACC) including a cost of equity, which provides for the possible phased introduction of unsupported debt, and where the equity return (i.e. the surplus cash as the cost of capital is higher than the cost of financing) is recycled into the 'ring fenced fund' to provide for some capital expenditure on a pay-as-you-go basis. This is essentially a continuation of the current approach determined in PR08 for CP4, although Network Rail has not issued any unsupported debt.

(b) the **adjusted WACC approach**. Under this approach, a weighted average cost of capital (WACC) return is established but it is not reinvested via the ring fenced fund as in the PR08 approach. Instead, since Network Rail does not have shareholders and does not pay a dividend, we reduce the revenue requirement for the amount of funding that is in excess of what we consider Network Rail will need to fund its efficient financing costs and any surplus that we consider Network Rail may need to manage risk efficiently (i.e. the risk buffer). In other words, the 'equity' return component of the WACC that is unnecessary to remunerate shareholders is netted off the revenue requirement, hence reducing the funding that government needs to put in.

Financial framework policy

17. To provide our advice we have needed to make decisions and assumptions on certain key issues relating to the financial/regulatory framework:

(a) **duration of the control period** – we expect CP5 to last five years, from 1 April 2014 to 31 March 2019;

(b) **indexation of allowed revenues** – we are assuming the same approach as established in PR08 (indexing yearly by RPI) but this is still an open issue, which we will raise in our August 2012 consultation on financial issues; and

(c) **our high-level approach to amortisation** – we will retain our existing policy of basing amortisation on average long-run steady-state renewals (plus the amortisation of the non-capex RAB) subject to financeability. However, if we adopt the adjusted WACC approach we will further consult on our approach to amortisation.

Assessment of efficient expenditure

18. We have derived our ranges for the different categories of expenditure by adjusting Network Rail's numbers to reflect our assessment of the opportunities for reducing levels of activity and/or expenditure without adversely affecting the network outputs and the risks that could feasibly give rise to a higher level of expenditure. We have reviewed and challenged the IIP and drawn on our own benchmarking studies to inform our assessment.

19. Table 1 summarises our assessment of the potential range of Network Rail's efficient expenditure in CP5, which includes support functions, network operations, network maintenance, industry costs and rates, traction electricity costs, Schedule 4 (restrictions of use regime) costs and renewals expenditure; and is also shown with and without committed enhancements.

Table 1: Efficient expenditure assessment for CP5

£millions (2011-12 prices)	CP4	IIP	Our range for CP5
Expenditure excluding committed enhancements	2,370	2,410	2,150 – 2,560
Expenditure including committed enhancements	2,770	2,820	2,550 – 2,960

Note: CP4 is Network Rail's 2011 delivery plan.

20. Our view is that the level of expenditure could potentially be £270m (10%) less or £140m (5%) higher than Network Rail has projected in the IIP.

Comparison against the Rail Value for Money Study

21. The Rail Value for Money (RVfM) Study led by Sir Roy McNulty (commissioned jointly by the Secretary of State and ORR) identified potential Great Britain-wide industry cost savings by 2018-19 on a 'top-down' (based on a so called 'should cost' exercise) and 'bottom-up' basis compared to expenditure levels in 2008-09[3]. In Figure 1, we have allocated the projected RVfM Study to Network Rail and then further disaggregated to Scotland for 2013-14 and 2018-19[4].

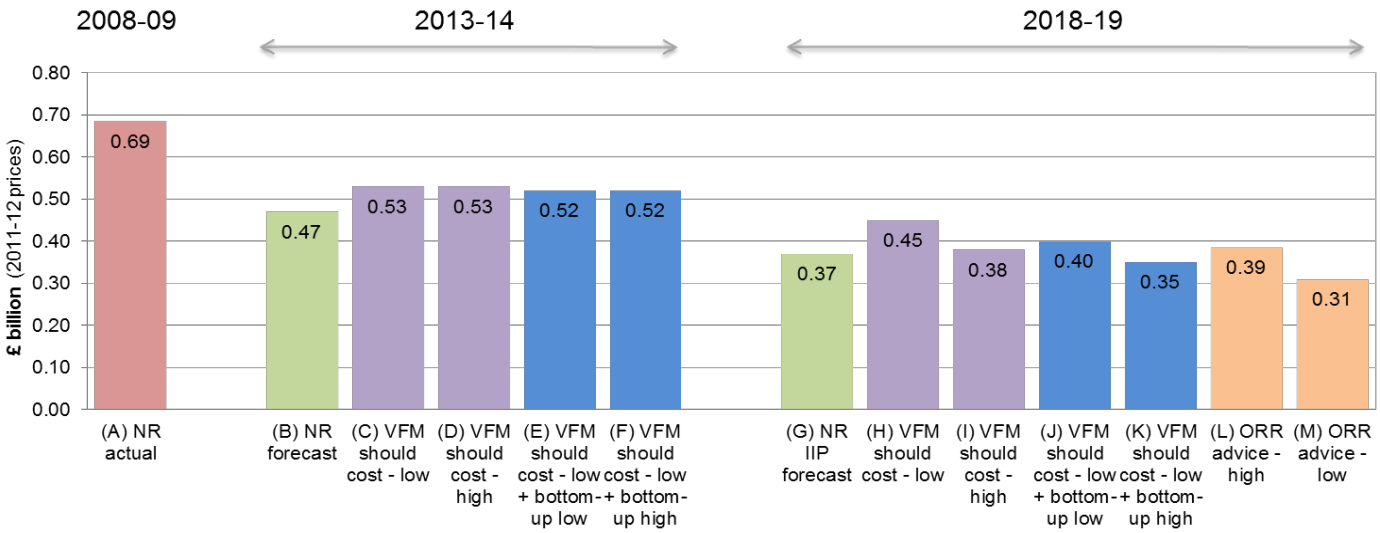
22. In 2008-09 Network Rail's controllable operating (support functions and operations), maintenance and renewals expenditure was £690m for Scotland. In 2013-14, the final year of CP4, it is projected to be £470m, which is slightly lower than the assumptions made in the RVfM Study on the basis of both the top-

[3] Whilst Transport Scotland was involved in the Study and the findings and recommendations will have applicability to Scotland as well as in England & Wales, the recommendations are formally made in respect of England & Wales.

[4] This is based on an assumption of 12% of Network Rail's expenditure being in Scotland.

down and bottom-up analysis according to our disaggregation. In 2018-19, Network Rail forecasts in the IIP its expenditure to be £370m, which is slightly lower than the RVfM Study should cost low estimate. This compares to the RVfM Study's top-down ('should cost') analysis of £380m - £450m and bottom-up analysis of £350m - £400m, according to our disaggregation of it. Our range is £310m - £390m, which is slightly lower than the RVfM Study's top-down analysis[5].

Figure 1: Our range compared to the RVfM Study (disaggregated to Scotland)



Revenue requirement

23. Table 2 shows our current assessment of the possible ranges for Network Rail's CP5 'SoFA revenue requirement' in Scotland. The SoFA revenue requirement is that which is funded by access charges (track and station) from franchised passenger operators, or, potentially, grant paid by government in lieu of track access charges. As with the range for expenditure, the revenue requirement range is shown for the 'current railway' and does not reflect the revenue requirement of any additional outputs or enhancements Scottish Ministers may wish to buy through their HLOS and SoFA.

Table 2: SoFA revenue requirement assessment for CP5

£millions (2011-12 prices)	CP4	IIP	Our range
PR08 approach	3,020	3,190	2,700 – 3,390
Adjusted WACC approach			2,570 – 3,250

Note: CP4 is our PR08 determination.

24. The SoFA revenue requirement in the IIP is higher than in CP4 largely due to Network Rail's RAB in CP5 being higher than in CP4 and amortisation being higher, which is not offset by the efficiencies Network Rail is projecting for CP5 and higher other single till income (from sources other than track and station access charges).

[5] The RVfM Study's top-down expenditure range is derived from the headline RVfM assessment which says that £2.5bn - £3.5bn in overall industry costs can be saved by 2018-19 across Great Britain. We have separated out the Network Rail element and expressed it in annual expenditure terms in 2011-12 prices and also, to provide for better comparability, excluded savings assumed by the RVfM Study that are assumed to be achievable in enhancement expenditure.

25. In the PR08 approach financial scenario, our range for Network Rail's SoFA revenue requirement is £2,700m - £3,390m compared to Network Rail's forecast of £3,190m. The low end of our range is £490m, or 15%, lower than Network Rail's projection, which largely reflects our view that we consider Network Rail can achieve more efficiencies in running its business than Network Rail has projected, can earn more other single till income, that amortisation could be lower and its cost of capital could be lower. The high end of our range is £200m, or 6%, higher than Network Rail forecast in the IIP, which largely reflects our view that amortisation and the cost of capital could be higher than Network Rail forecast in the IIP.

26. In the adjusted WACC financial scenario, the low end of our range is £2,570m and the high end of our range is £3,250m compared to Network Rail's forecast of £3,190m. In this approach the allowed return is calculated excluding any surplus equity return (this means that the allowed return in both the low and high end of the range is lower than the IIP) and amortisation is based on our forecast of annual average CP5 renewals expenditure (this means that amortisation in both the low and high end of the range is higher than the IIP). Also, in both the low and high end of the range we have used an allocation of support costs and industry costs and rates between England & Wales and Scotland based on Network Rail's DP11 instead of the IIP. This means that the revenue requirement is £54m higher than Network Rail's IIP, in both the low and high end of the range, as a result of these allocation issues.

27. The low end of our range is £620m, or 19%, below Network Rail's forecast, which apart from the differences due to the different approach described above, largely reflects our view that we consider Network Rail can achieve more efficiencies in running its business than it has forecast, can earn more other single-till income and its efficient financing costs could be lower.

28. The high end of the range is £60m, or 2%, higher than Network Rail's forecast, which apart from the differences due to the different approach described, largely reflects our view that amortisation and efficient financing costs could potentially be higher than Network Rail assumed in its forecast.

Structure of outputs

29. We propose that HLOS outputs should be framed at a genuinely high-level, because the periodic review provides a staged process (e.g. through our determinations and Network Rail's delivery plan) for further outputs and detail to be added. We will also buttress Network Rail's outputs with defined enablers (to unlock future efficiencies) and monitoring KPIs, and ensure that there is a clear line of sight to outcomes.

30. After the HLOS is published, we will consult in August 2012 on the specfic outputs that Network Rail should be required to deliver in CP5, the enablers and the monitoring KPIs.

31. Network Rail is required to meet its health and safety obligations and we will take full account of this in PR13. Since PR08 the EU has established Common Safety Targets and we therefore recommend that the HLOS does not need to set further high level safety targets. We are considering setting Network Rail more detailed health and safety targets; this will also be covered in our August 2012 consultation on outputs.

1. Introduction

Purpose of this document

1.1 This document is an important step in the 2013 periodic review (PR13) of Network Rail's outputs, access charges and the wider regulatory and incentive framework. The document has three specific purposes:

(a) to begin the 'formal review' phase of PR13;

(b) to provide advice to Scottish Ministers on the possible range for Network Rail's revenue requirement in Scotland for control period 5 (CP5), which we expect to run from 1 April 2014 to 31 March 2019, based on the work we have completed to date in PR13[6]. It is provided to assist Scottish Ministers in developing their 'high level output specification' (HLOS) and 'statement of funds available' (SoFA) for CP5 that will be published by the end of July 2012; and

(c) to provide advice on how outputs could be structured.

1.2 We are also publishing an equivalent document providing advice to the Secretary of State in respect of England & Wales. However, recognising that health and safety is a matter reserved for the UK Government, we have included details for health and safety for Great Britain as a whole in both advice documents, disaggregated to England & Wales and Scotland.

1.3 In addition, we are today publishing our requirements to Network Rail on the form and content of its 'strategic business plan' (SBP) for CP5 which it is required to provide to us and publish by 7 January 2013[7].

Access charges review initiation notice

1.4 At the same time as this document is published, we are serving a 'review initiation notice' in accordance with paragraph 1C of Schedule 4A to the Railways Act 1993 informing Scottish Ministers, the Secretary of State for Transport and other relevant parties of our proposal to undertake this review. That notice starts the 'formal review phase' of PR13, following the 'development phase' that has run from May 2011 (when we published our first consultation document).

1.5 The initiation notice is also available on our website[8]. In accordance with paragraph 1C(3) of Schedule 4A to the Act, this notice sets out that:

[6] At this stage of PR13, we can only set out our expectation for how long the control period will be. Under the statutory process, Scottish Ministers and the Secretary of State may make representations to us following our review initiation notice if they consider a different duration period would be more appropriate.

[7] Our SBP guidance to Network Rail is available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

[8] The review initiation notice is available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

(a) the period to which we expect the PR13 determinations to relate is 1 April 2014 to 31 March 2019 (CP5);

(b) Scottish Ministers and the Secretary of State for Transport need to provide to us, by 31 July 2012, information about what they want to be achieved by railway activities during this period and the public financial resources that are, or are likely to be, available for the achievement of those activities; and

(c) there are no conditions which we require to be satisfied if we are to proceed with PR13.

Structure of this document

1.6 The rest of this document is structured as follows:

(a) Chapter 2 provides relevant background, including our timetable for PR13.

(b) Chapter 3 explains the approach we have taken to produce our advice.

(c) Chapter 4 sets out our decisions and assumptions on key financial/regulatory framework variables that are necessary to produce our advice.

(d) Chapter 5 describes our assessment of the possible range for Network Rail's efficient expenditure.

(e) Chapter 6 describes our assessment of the financial variables underlying the calculation of Network Rail's revenue requirement.

(f) Chapter 7 provides our assessment of the possible range for Network Rail's CP5 revenue requirement for the 'current railway'.

(g) Chapter 8 discusses the structure of outputs and issues relating to health and safety.

2. Background

Introduction

2.1 The purpose of this chapter is to provide some background to our advice. It sets out:

(a) general background to PR13;

(b) our PR13 objective; and

(c) our high-level timeline for PR13.

Context for undertaking PR13

2.2 PR13 will determine the outputs that Network Rail will be required to deliver in CP5 and the access charges the company can levy on train operators for using its network. PR13 will also establish the wider 'regulatory framework' for CP5. This includes the financial framework within which Network Rail can operate and the incentives that will act on both it and train operators (and through them on suppliers and ROSCOs) to deliver and outperform our determination, including targets for performance and assumptions for efficiency.

2.3 Reflecting the separate responsibilities for setting the strategy and funding the railway across Great Britain, we will determine separate outputs, access charges and regulatory frameworks for Network Rail in England & Wales and in Scotland, whilst taking account of the fact that Network Rail is a single company.

Legal procedure for conducting an access charges review

2.4 PR13 follows the amended procedure for conducting an access charges review. This procedure was applied for the first time in PR08 after Schedule 4A to the Act was amended by the Railways Act 2005. Schedule 4A requires Scottish Ministers to provide us with information about what they want to be achieved by railway activities in Scotland during the control period and the public financial resources that are, or are likely to be, available for the achievement of those activities. Scottish Ministers are intending to do this by producing a 'high level output specification' (HLOS), setting out what they want to be achieved, and a 'statement of funds available' (SoFA). The same arrangements apply for the Secretary of State for Transport in respect of England & Wales.

2.5 Scottish Ministers' HLOS and SoFA form a key input to our work to determine Network Rail's outputs, revenue requirement and access charges. In addition to the HLOS and SoFA, we will take account of the reasonable requirements of all of Network Rail's customers and other funders in undertaking our work and making our decisions in PR13.

Previous consultations

2.6 To help develop our thinking on key issues ahead of the start of this 'formal' phase of PR13 we carried out the following consultations[9] last year:

(a) in May 2011 we published our first PR13 consultation. In this document we consulted on a wide-range of issues covering our proposed objective for the periodic review, the high-level timetable, and issues relating to incentives, outputs and the financial framework;

(b) in July 2011, we consulted on our proposed approach to establishing the level of Network Rail's efficient expenditure for CP5;

(c) in September 2011, we sought views on the potential for increased on-rail competition; and

(d) in December 2011, in light of the May 2011 consultation, we consulted on more detailed matters relating to incentives, including on certain financial framework issues.

2.7 In this document, informed by the responses to the May and July consultations, we set out some key decisions on the regulatory framework that we have now made, which are necessary to produce our advice and enable Scottish Ministers to produce their HLOS and SoFA (such as how long we expect the control period to be). However, we will set out the full reasons for the financial and incentive framework for CP5 in April 2012 when we publish our Framework for Setting Network Rail's Funding.

2.8 We have set out our response on those issues from the May 2011 consultation which are directly relevant to this document (mainly relating to outputs) in a separate document available on our website[10]. This document also includes our consideration of the responses to our consultation on establishing the level of Network Rail's efficient expenditure in CP5. The approach we take following this consultation is particularly important for the work we do ahead of, and our review of, Network Rail's SBP later in PR13.

PR13 objective

2.9 Our high-level objective for PR13[11] is to protect the interests of customers and taxpayers by:

ensuring our determination enables Network Rail and its industry partners to deliver or exceed all the specified outcome and output requirements safely and sustainably at the most efficient levels possible comparable with the best railways in the world by the end of the control period.

2.10 Furthermore, we see PR13 as an important facilitator and driver of industry reform, through:

(a) a clear **focus on what matters** to passengers, freight customers and taxpayers – particularly improving value for money;

(b) a **more disaggregated approach** – increasing transparency, facilitating greater localism, and in due course allowing a more comparative approach to regulation;

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[9] Further details on these consultations, including the responses received, are available at http://www.rail-reg.gov.uk/pr13/consultations/index.php.

[10] This is available at http://www.rail-reg.gov.uk/pr13/consultations/orr013.php.

[11] We consulted on our proposed overarching objective for PR13 in May 2011 and we stated in our consultation on incentives in December 2011 that in light of the positive feedback from stakeholders we intend to retain it. We intend to discuss the main issues stakeholders raised in respect of the objective in our Framework for Setting Network Rail's Funding document in April 2012

(c) **alignment of incentives** – improving the interfaces between different players in the industry, facilitating alliances, efficiency benefit sharing at the route level and bespoke arrangements;

(d) **greater contestability** – ensuring that there is more competition in the provision of infrastructure-related services where appropriate, delivering further savings.

PR13 timetable

2.11 In May 2011, we set out our proposed high-level timetable for PR13. We asked stakeholders if they had any views on it and whether they needed further information to plan their involvement.

2.12 The majority of stakeholders were content with our timetable. However, there were some concerns that it would be challenging to deliver. There were also requests for early resolution of issues relating to freight charges and for us to provide greater certainty in respect of outputs/the content of Network Rail's delivery plan in good time before the start of CP5 to help ensure that Network Rail plans its activities so that there is no undue hiatus that could hamper the effective and efficient delivery of work by Network Rail and its suppliers. Some franchised operators suggested that we should give guidance as to how any franchise re-letting processes would be affected by PR13. Our response to the points raised on the high-level timetable is set out on our website[12]. Our latest high-level timetable for the remainder of PR13 is set out below in Table 2.1.

[12] This is available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

Table 2.1: Current high-level timetable for PR13

Formal review phase	
15 March 2012	We publish our 'advice to ministers' (for both England & Wales and Scotland) and issue our review initiation notice formally starting PR13
April 2012	Consultation on exposing train operators to changes in Network Rail's costs
April 2012	Consultation on a cap for certain freight charges
30 April 2012	We publish our Framework for Setting Network Rail's Funding, which sets out the approach we will be taking on the incentive and financial framework issues following our consultations on these issues in December 2011, as well as the conclusions on our consultation on on-rail competition last autumn
July 2012	We publish our decisions on caps for freight charges for CP5
By 31 July 2012	Scottish Ministers and Secretary of State for Transport publish their HLOSs and SoFAs
1 August 2012	We consult on the outputs Network Rail should be required to deliver, and the wider framework of enablers and monitoring KPIs
1 August 2012	We consult on detailed financial issues concerning Network Rail's financial framework for CP5
28 September 2012	Our consultations on Network Rail's outputs and detailed financial issues close
8 November 2012	Consultation on more detailed issues relating to Schedules 4 and 8 restrictions of use and performance regimes
7 January 2013	Network Rail publishes its strategic business plan
14 January 2013	We consult on Network Rail's strategic business plan
8 April 2013	Our consultation on Network Rail's strategic business plan closes
6 June 2013	We publish our draft determination
5 September 2013	Consultation on our draft determination closes
31 October 2013	We publish our final determination

Implementation phase (assuming no objections by Network Rail to our review notice)	
November/December 2013	Final access charges (price lists/charge schedules) are audited and approved by us. Review notices are served which start the formal implementation of PR13. (Subsequent dates depend on exactly when the review notices are issued.)
January/February 2014	Final point (specific date to be defined) at which objections could be made to our review notices (not less than six weeks from the date of publication of the review notice)
January/February 2014	We issue notice of agreement (specific date to be defined)
February/March 2014	We issue our review implementation notice (specific date to be defined)
By 31 March 2014	Network Rail publishes its delivery plan
1 April 2014	Implementation of PR13 determination and start of CP5

Subsequent key stages in PR13

Framework for Setting Network Rail's Funding (30 April 2012)

2.13 In April, we will issue our framework document which will set out:

(a) our decisions on certain key aspects of the overall regulatory framework. This will include further explanation for the approach on the financial framework that we are taking in this document (see chapter 4) following consultation;

(b) our approach and next steps in respect of those aspects of incentives on which we consulted in December 2011;

(c) our decisions on on-rail competition following our consultation in autumn 2011;

(d) our decisions on how aspects of the price control will be disaggregated; and

(e) a further update on the PR13 timeline and workplan.

Publication of HLOS and SoFA (by 31 July 2012) and ORR's consultation on outputs (1 August 2012)

2.14 As mentioned above, Scottish Ministers and Secretary of State will each publish their HLOS and SoFA (for Scotland and England & Wales respectively). Following this we will then need to consider how to convert the HLOSs into output requirements for Network Rail. Also, subject to funding constraints, we can require Network Rail to deliver other outputs beyond those in the HLOS. We will be publishing a consultation document after the HLOSs/SoFAs are published to seek views on the outputs that Network Rail should be required to deliver.

Consultation on detailed issues relating to the financial framework (1 August 2012)

2.15 In this document, we are setting some decisions and assumptions on the financial framework. We will explain these decisions further in our April 2012 framework document as well as making decisions on other

issues such as the treatment of risk. However, there are more detailed financial issues that we will need to take decisions on after this, such as the risk buffer. We will consult on these further financial issues in August 2012.

Network Rail's strategic business plan (SBP) (due by 7 January 2013)

2.16 Network Rail's SBP is its response to the HLOSs and SoFAs, setting out how it intends to deliver what it will be required to do in CP5. Our PR13 determinations will draw on the SBP. The SBP thus needs to contain the key information we will need to make our determination. We will consult on the SBP in January 2013 to inform the analysis we carry out for our draft determination.

Draft and final determinations (June and October 2013)

2.17 In June 2013, we expect to consult on our draft determination of Network Rail's outputs, funding and all aspects of the regulatory framework. Stakeholders can then comment before we make final decisions in October 2013.

2.18 After our final determination, we will begin the process of implementation of PR13. Further discussions with involved stakeholders will take place ahead of this to ensure we have a clear and effective process for implementation.

3. Overall approach to establishing our ranges

Introduction

3.1 The purpose of this chapter is to explain our approach to producing our advice. It sets out:

(a) our overall approach to providing ranges for Network Rail's revenue requirement;

(b) the funding scenarios;

(c) the scope and limitations of our assessment;

(d) a summary of the Initial Industry Plan (IIP) and an explanation of how we have used it in our assessment; and

(e) how our assessment relates to the wider context of the RVfM study.

Overall approach to establishing ranges

3.2 In PR13 we will make our decisions on Network Rail's expenditure and revenue requirement as part of a balanced package, which will need to be considered and judged as a whole. In taking decisions on outputs and the associated levels of access charges/funding we will establish a level of efficiency which we consider is ambitious but which can be outperformed if the company rises to the challenge and works with its industry partners. This will include considering the profile of efficiency improvement over the course of the control period. The incentives that we develop for CP5 will have a bearing on the scope for efficiency improvements and will thus affect the level of Network Rail's revenue requirement that we ultimately determine in PR13. We will also establish financial and risk frameworks (including mechanisms to deal with unforeseen cost or revenue shocks), the contractual and financial incentives and the structure of charges. We will also consider the monitoring and enforcement arrangements.

The 'current railway'

3.3 Our ranges for expenditure and revenue requirement are for what the IIP terms the 'current railway'. This is the railway at the end of CP4 but including committed enhancements (those funded through PR08 or subsequent to PR08 but not yet completed). In particular it examines the output and costs of a railway that assumes the CP4 enhancement programme is delivered to planned timescales but that no new enhancements to the railway are delivered beyond these schemes. It also includes some specific investments intended to reduce costs in CP5 and beyond.

Calculating the SoFA revenue requirement

3.4 For the purpose of this advice we calculate Network Rail's 'SoFA revenue requirement'. This is the gross revenue requirement that we determine will be received from all funding sources less our assumptions for the income that Network Rail will receive from sources other than franchised passenger

train operating companies (TOCs) which offset the gross revenue requirement. This other income is principally from property rental and sales, and charges paid by open access passenger and freight operators. It is the SoFA revenue requirement – the level of the company's revenue requirement that is funded by TOCs – that is relevant for Scottish Ministers to consider in making decisions on the level of public financial support for the railway as part of her SoFA. The SoFA revenue requirement is consistent with how Network Rail's income was presented in the IIP.

3.5 Our calculation of the revenue requirement follows the normal building block approach, which is the same approach we used to determine the requirement for CP4. The 'building block' model (illustrated in Figure 3.1 below) has at its heart the concept that operating expenditure is remunerated on a 'pay-as-you-go' basis and capital expenditure is, generally, added to the RAB (i.e. capitalised) and remunerated through the amortisation charge and a return on the RAB.

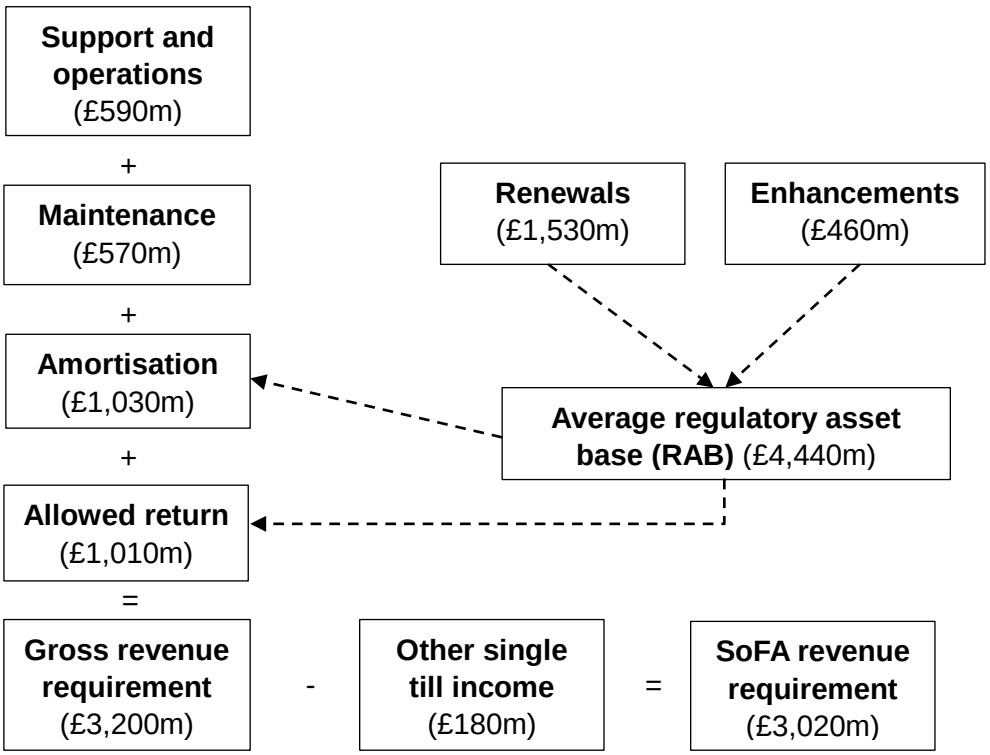
3.6 In order to provide our advice on the ranges for Network Rail's revenue requirement we assess each of the building blocks, establishing a range for each of them, which includes our assessment of the potential scope for efficiency improvement in CP5. We have made our assessments on the basis of our review of the IIP (discussed below), benchmarking and other studies that we have commissioned (discussed further in the next chapter), and through the review and challenge meetings that we have had with Network Rail since the IIP was published at the end of September 2011.

3.7 We do not include the revenue requirement implications of the various enhancement options set out in the IIP in our revenue requirement range as these will be considered individually by Scottish Ministers when they prepare their HLOS.

3.8 Figure 3.1 sets out the building block model (showing the values we determined for CP4). Further explanation of the building block approach is provided in chapter 6 of our May 2011 first PR13 consultation document[13].

[13] See http://www.rail-reg.gov.uk/pr13/consultations/orr013.php.

Figure 3.1: Building blocks of Network Rail's revenue requirement – with PR08 determination values for CP4 (2011-12 prices)



3.9 Network Rail currently receives its net revenue through a combination of track access charges paid by franchised passenger train operating companies (TOCs) and grant paid to the company by Transport Scotland (and the DfT for England & Wales) in lieu of access charges. Table 3.2 shows the high-level breakdown of the sources of Network Rail's income assumed for CP4 at our PR08 determination.

Table 3.2: Sources of Network Rail's income in CP4

£m (2011-12 prices)	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Franchised passenger train operators – total variable charges	28	29	29	31	31	148
Franchised passenger train operators – fixed charges	120	125	135	266	304	950
Income from freight operators	11	11	11	11	11	54
Income from open access operators	0	0	0	0	0	0
Station long term charge income	17	17	17	17	17	84
Schedule 4 and 8 income	12	11	11	9	8	51
Other income (inc property rental, property sales and depots income)	27	27	28	28	27	137
Network grant	422	426	416	280	235	1,779
Total income	**636**	**645**	**646**	**641**	**633**	**3,201**

Network grant

3.10 As noted above, a proportion of Network Rail's revenue requirement has in the past been paid directly by Transport Scotland to Network Rail in the form of network grant, in lieu of fixed track access charges on a pound-for-pound basis. In PR08 both Transport Scotland and DfT asked us to allow fixed track access charges to be substituted by network grant, which we allowed up to the level dictated by two financial tests – which resulted in around two-thirds of Network Rail's income coming from network grant in CP4[14]. The request to pay network grant was made by Transport Scotland and DfT and approved by the ORR board in order to meet government accounting rules that mean that payments of track access charges are booked as resource expenditure in national accounts but payments to Network Rail can be booked as capital expenditure. In making our decisions on network grant we take into account our section 4 duties, including government's financial position, and consider Network Rail's key accountabilities to its train operator customers and ORR.

3.11 Our preferred method of funding Network Rail is for all of its income to come from train operating companies and other customers. However, we must have regard to the financial position of Scottish Ministers and the Secretary of State. We note that the RVfM study recommended abolishing network grant to ensure that Network Rail receives all its funding through train operators – in order to improve Network Rail's customer focus, and help drive better value for money.

3.12 We intend to consult on our approach to network grant in our August 2012 consultation on financial issues, where we will address the accountability, incentive and transparency issues raised by network grant.

Financial structure scenarios

3.13 Network Rail's financial structure is an important determinant of the company's revenue requirement. In PR08 we, along with DfT, Transport Scotland and HM Treasury, supported the move by Network Rail to start to raise unsupported debt (outside the financial indemnity mechanism (FIM) provided by the Secretary of State for Transport) in order to bring greater investor scrutiny, and hence incentives for cost control and efficiency, on the company and transfer risk away from government. However, since PR08, due principally to conditions in the financial markets, Network Rail has not issued unsupported debt.

3.14 There is currently uncertainty about Network Rail's financing arrangements for CP5 and we consulted on the issues and a number of alternative approaches in our incentives consultation in December 2011[15]. Working with Transport Scotland, DfT and Network Rail we hope to be able to reach a clearer position on the company's financing arrangements for CP5 by the time of our Framework for Setting Network Rail's Funding document that we will publish in April 2012.

3.15 Ahead of that, because the different approaches give rise to significant differences in the company's revenue requirement, and in order to draw out clearly the implications for the governments of different

[14] The investment test states that network grants that are accounted for as capital expenditure in the government's accounts cannot exceed Network Rail's capital investment (i.e. renewals and enhancements). Any network grants paid in excess of capital investment are accounted for as resource expenditure. This test applies in respect of the governments in Scotland and England & Wales separately. The market body test requires that Network Rail's annual income from sales (equal to access charges plus other single till income) covers at least half of the company's production costs (equal to operating and maintenance expenditure and statutory depreciation). This test applies to Network Rail as a whole and separate calculations do not need to be made for Scotland and England & Wales.

[15] Responses to our December 2011 consultation on incentives are available on our website at http://www.rail-reg.gov.uk/pr13/consultations/orr020.php. We will respond to the comments made by stakeholders in our April 2012 Framework for Setting Network Rail's Funding.

options, we have produced separate revenue ranges for two alternative approaches to financing Network Rail in CP5[16]:

(a) **Unsupported debt – gradualist approach (the PR08 approach)**. This approach assumes that Network Rail's return in CP5 will be based on a weighted average cost of capital (WACC) including a cost of equity, which provides for the possible phased introduction of unsupported debt, and where the equity return (i.e. the surplus cash as the cost of capital is higher than the cost of financing) is recycled into the 'ring fenced fund' to provide for some capex on a pay-as-you-go basis. This is essentially a continuation of the current approach determined in PR08 for CP4[17].

(b) **Adjusted WACC approach**. A WACC return is established but it is not reinvested via the ring fence fund as in the PR08 approach. Instead, since Network Rail does not have shareholders and does not pay a dividend, we reduce the revenue requirement for the amount of funding that is in excess of what we consider Network Rail will need to fund our projection of its efficient financing costs and any surplus that we consider Network Rail may need to manage risk efficiently (i.e. a risk buffer). In other words the 'equity' return component of the WACC that is unnecessary to remunerate shareholders is netted off the revenue requirement, hence reducing government funding.

3.16 In terms of the impact on Scottish Ministers' financial position, the adjusted WACC approach has the equivalent impact as the 'rebate approach' and the 'cost of debt approach' included in our December 2011 incentives consultation[18]. Furthermore, as with the rebate and the cost of debt approaches this means that, compared to the PR08 approach, and all other things being equal, debt and the RAB will be higher in CP6.

3.17 If we adopt the adjusted WACC approach we will further consult on our approach to amortisation, as in the December 2011 incentives consultation we recognised that it is important when considering the financing arrangements to take account of longer term financial sustainability. For the purposes of this advice we have assumed amortisation in CP5 is equal to our forecast of average annual renewals expenditure in CP5, which gives a higher level of amortisation than the current amortisation policy which is broadly based on long-run steady-state renewals.

3.18 In each scenario only the assumptions on the definition and application of the cost of capital and amortisation change: our ranges for all other building blocks, e.g. efficiency and expenditure, are consistent for both scenarios.

Scope and limitations of our assessment

3.19 For the purpose of this assessment we have taken as given Network Rail's assumptions in the IIP regarding the proposed industry outputs, network capability and capacity, safety and environmental performance, and the company's assumptions of forecast demand. The HLOSs will state the specific

[16] In our December 2011 consultation on incentives we included three financial structure approaches (the unsupported debt – gradualist approach, cost of debt and the rebate approach), however following further discussion with DfT, Transport Scotland and Network Rail we consider that providing our advice on the basis of the unsupported debt – gradualist approach (the PR08 approach) and the adjusted WACC approach would be more realistic. The adjusted WACC approach also gives effectively the same allowed return as the cost of debt and the rebate approaches that we included in our December 2011 consultation.

[17] Network Rail has not issued unsupported debt in PR08. If it is decided that Network Rail should issue unsupported debt in CP5, in addition to calculating Network Rail's revenue requirement on this basis, we would need to consider how the approach would work in PR13, e.g. what is the appropriate amount of unsupported debt to be issued, when should it start to be issued, what are the arrangements for the ring-fenced fund etc. We would consult on these issues further and discuss them directly with Network Rail, DfT, Transport Scotland and other stakeholders; as well as with the credit rating agencies and others in the financial markets.

[18] These approaches are explained more fully in our *Periodic review 2013: consultation on incentives* document. See paragraph 8.56 at http://www.rail-reg.gov.uk/pr13/PDF/pr13-first-consultation-incentives_141211.pdf.

projection for the high-level railway outputs government wishes to fund, which will then affect our determination of Network Rail's specific outputs.

3.20 We have also assumed that Network Rail achieves the expenditure levels, efficiencies and outputs assumed for control period 4 (CP4) and hence the value of the closing RAB for CP4 is, for the purposes of this assessment, as projected by Network Rail. If Network Rail does not achieve the efficiencies expected in CP4 then we would expect to add the shortfall to the efficiency challenge placed on the company for CP5.

3.21 We are at a comparatively early stage in PR13 and there are still a wide range of issues and uncertainties to be resolved before we complete our determination. At this stage, our assessment takes account of many of the uncertainties. However, there are some areas of policy choice and/or uncertainty which means that we cannot provide narrower ranges, and indeed the final revenue requirement could ultimately lie outside the range presented here. The principal uncertainties are:

(a) the decisions Scottish Ministers take on the outputs they want in CP5 – significant changes to the levels of the outputs assumed in the IIP and hence in our advice, including additional enhancements, will impact the revenue requirement;

(b) as discussed above, Network Rail's financial arrangements for CP5 will have a significant impact on the revenue requirement. Although our approaches and the ranges that have been derived from them cover some of the uncertainty, the ranges do not reflect the impact of all potential changes in the financial markets and hence the assumptions we may then take on the company's allowed return and financing assumptions;

(c) the company's performance over the remainder of CP4 will impact the revenue requirement we determine for CP5. For instance, if there is significant underperformance of our efficiency assumptions and/or the value of the company's RAB and debt changes signficantly from that assumed for this advice. We would consider the effect of any significant efficiency underperformance in establishing our PR13 determination;

(d) Network Rail has yet to produce its strategic business plan for CP5 (due by 7 January 2013), which is its response to the HLOS; and

(e) our assessment of the scope for efficiency improvement in CP5 and the company's asset policies are not complete.

3.22 In addition, our assessment does not make any assumptions about the possible reduction to Network Rail's revenue requirement arising from the potential for it to let an infrastructure concession during CP5. Similarly, we have not made any assumptions about the potential reduction in Network Rail's expenditure and RAB (and hence revenue requirement) from the transfer to TOCs of greater responsibilities for management of stations. Moreover, we have not considered all the possible implications of Network Rail's role as a systems operator[19]. We will be considering all of these areas in more detail over the course of PR13.

[19] In the context of a railway with potential infrastructure concessions and alliances, Network Rail's role as a systems operator would be important to ensure coherent planning, management and seamless operations across the network.

CP4 exit rate

3.23 We need to make assumptions about how much efficiency Network Rail achieves in CP4 and its closing balances on debt and RAB, so that we can calculate Network Rail's revenue requirement and financial position for CP5.

3.24 The starting position for debt and RAB for CP5 is calculated in accordance with the rules set out in PR08 and in the Regulatory Accounting Guidelines[20]. We have assumed for the purposes of our assessment that Network Rail will exit CP4 in accordance with the projections in its 2011 delivery plan (DP11), which Network Rail considers will deliver the PR08 determination. That is also Network Rail's assumption in the IIP. Network Rail will publish its 2012 delivery plan update shortly and we are not expecting it to show a materially different CP4 exit rate than DP11. We will review our assumptions for the CP4 exit rate as part of deriving our PR13 determination.

Price base and precision

3.25 All values in our assessment are in 2011-12 prices unless otherwise stated. Historic data is rebased to November 2011-12 prices using the all items retail prices index (RPI). Financial are rounded to the nearest £10 million unless otherwise stated. As a result not all totals in the tables will sum exactly.

Initial Industry Plan

3.26 The development of the separate IIPs for Scotland and England & Wales was overseen by the industry's Planning Oversight Group (POG), in which Network Rail, passenger and freight train operators and suppliers are represented. The IIP has been produced under the aegis of the Rail Delivery Group (RDG), established by the industry following the RVfM Study.

IIP strategy

3.27 The IIP for Scotland sets out the industry's strategy for the long term, with a focus on what could be delivered in CP5. In our guidance to the industry for developing the IIP[21], we said the plan should provide the information that we and the two governments would need in order to take forward the periodic review. In particular, we said that the IIP should support the production of our advice to ministers and inform the HLOS and SoFA by providing the governments with options in terms of the future outputs from the railway and the level of funding required for this.

3.28 We invited stakeholders to comment on the IIP to help inform our own review of the IIP that we were undertaking as part of the development of this advice. We received almost 80 responses from a wide range of stakeholders. As well as providing comments on areas relevant to this advice document, such as on passenger priorities, there were many points raised on matters that would be of interest to both government and the industry – for example, on possible improvement schemes. Accordingly, we have shared the responses we received with Network Rail on behalf of the industry's Planning Oversight Group (which produced the IIP) and Transport Scotland and DfT. Network Rail has said it will take these responses into account in its development of its Strategic Business Plan.

[20] Regulatory Accounting Guidelines for Network Rail Infrastructure Limited, February 2012, available at http://www.rail-reg.gov.uk/upload/pdf/regulatory-accounting-guidelines-2012.pdf.

[21] http://www.rail-reg.gov.uk/upload/pdf/orr-developing-the-industry-plan-220211.pdf.

3.29 The IIP set out the industry's proposed strategy and the options for intervention. The stated objectives of the industry strategy were to:

(a) improve efficiency and affordability to the taxpayer, including value for money improvements;

(b) stimulate economic growth, reduce journey times and improve connectivity;

(c) maintain high levels of reliability of train service;

(d) better meet the needs of passengers, and take steps towards a long-term ambition of 90% passenger satisfaction levels;

(e) maintain high levels of passenger, public and workforce safety, with an initiative to reduce risk at level crossings by half; and

(f) contribute to a low-carbon economy.

3.30 The outputs that the industry says are required to meet the objectives set out above include:

(a) significant increases in service capacity to meet the increase in demand that is forecast by the IIP (the IIP projections assume passenger km will grow by an average 2.5% per annum by 2034) for both passenger and freight services in CP5.The extra capacity proposed to meet this demand derives from the Edinburgh Glasgow Improvement Programme (EGIP) and enhancement schemes recommended through the RUS process;

(b) maintaining passenger train service reliability, as measured by PPM, at end-CP4 levels, but focus on bringing poor performing services up towards and above 'average' levels; and

(c) a carbon management framework to monitor, manage and help reduce greenhouse gas emissions by the industry. The IIP forecasts show long-term reductions in carbon dioxide emissions through energy-efficiency initiatives, further electrification projects and reductions in the carbon intensity of electricity used in rail (with more electricity being generated from renewable energy sources).

(d) a gradual continued reduction in safety risk driven by station investment, lower risk arising from implementation of new technologies where reasonably practicable, improvements in safety culture, and improvements to engineering arrangements reducing risk to infrastructure workers. We discuss a possible option for a level-crossing safety fund aimed at reducing risk further through targeted investment in chapter 8.

3.31 The IIP says that the efficiency improvements forecast over CP5 are contingent on significant industry reform, consisting of decentralisation of decision making within Network Rail, delivery of the network operating strategy proposed in the IIP and franchise reform (including for instance longer and less prescriptive franchise agreements).

Rail Value for Money Study and the Rail 2014 – public consultation

Rail Value for Money Study

3.32 The RVfM study, which we co-sponsored with the DfT, was published in May 2011. It concluded that the rail industry could make total savings – across Great Britain – of between £2.5bn and £3.5bn (based on its top-down 'should cost' analysis and in 2008-09 prices) by 2018-19 compared to 2008-09[22].

3.33 This equates to savings of between £0.7bn (low estimate) and £1.7bn (high estimate) by 2018-19 in addition to the efficiency we determined that Network Rail should achieve in CP4 and the provisional indications for savings for CP5 we made at PR08. Of the total industry savings, the study attributed around 70% to Network Rail and the rest to the wider industry. However, the study was clear that to achieve the higher range of savings it would be necessary for reform across the industry, including in government, to ensure the enablers required to deliver these savings are established.

3.34 RDG is taking forward many recommendations from the RVfM study on behalf of the industry.

Rail 2014 – public consultation

3.35 In November 2011, Transport Scotland issued its 'Rail 2014' consultation[23]. This sought views on the options for the future of rail in Scotland. The consultation noted the RVfM Study and recognised that there was likely to be significant organisational and operational change across the rail industry as a result. The consultation also noted the internal restructuring being undertaken by Network Rail and welcomed the benefits that this would bring in terms of greater alignment with the interests of Network Rail's customers. Transport Scotland is currently considering how best to support greater alignment through the Scottish HLOS and the next contract for passenger services once the current ScotRail franchise ends in 2014.

3.36 We are discussing with Transport Scotland how best to align the PR13 programme and the successor to the current franchise.

[22] Whilst Transport Scotland was involved in the Study and the findings and recommendations will have applicability to Scotland as well as in England & Wales, the recommendations are formally made in respect of England & Wales.

[23] Rail 2014 – public consultation, Transport Scotland, available at: http://www.transportscotland.gov.uk/files/documents/reports/j203179/j203179_0.pdf.

4. Financial framework policy

Introduction

4.1 This chapter sets out the decisions and assumptions on certain key issues relating to the financial/regulatory framework, which we have needed to make in order to provide our advice. These are:

(a) our expectation for the duration of the control period;

(b) indexation of allowed revenues; and

(c) our high-level approach to amortisation.

4.2 We initially discussed and consulted on these issues in our May 2011 consultation and we have made our decisions and assumptions in light of the responses to that document. In this document we provide a summary of our reasons for taking those decisions. For some of these decisions we will set out our reasons in more detail in our Framework for Setting Network Rail's Funding which we will publish in April 2012.

Duration of control period

4.3 The duration of the control period is a fundamental part of the regulatory framework. Scottish Ministers need to know how long we expect the next control period to be in order for them to set out their desired high level outputs and the associated public funding that is to be made available in the HLOS and SoFA. We are required to set out this information as part of our 'review initiation notice', but at this stage we can only set out our expectation for how long the control period will be; under the statutory process Scottish Ministers have the right to make representations to us following our review initiation notice if they consider a different duration period would be more appropriate.

4.4 The issue of duration is fundamentally tied to the issue of risk and incentives. When considering the length of the control period, we must balance the need to provide appropriate incentives on the company to operate and invest efficiently as the owner and operator of long life assets (and to strive to outperform our determination) with the increased uncertainty involved in forecasting output requirements and costs further into the future. The length of the control period in rail has always been established as five years, generally in line with the duration that has been adopted in other regulated sectors in the UK[24].

4.5 Respondents to our first consultation in May 2011 were generally in favour of retaining a five year control period with a few saying that it should be extended[25]. The respondents that favoured extending the length of the control period were generally concerned about the effect of a five year control period on

[24] Whilst planned to be five years, the second control period was in practice reduced to three years (2001-02 to 2003-04) due to the 'interim' access charges review 2003 that took place after Network Rail took over Railtrack (in administration).

[25] More detail on the responses to the May 2011 consultation document will be included in our April 2012 Framework for Setting Network Rail's Funding document.

suppliers and in particular the problems caused to the supply chain from Network Rail reducing spend (and hence work volumes) in the early part of a control period and then increasing spend in the later part of the control period, as has been seen in CP3 and CP4.

4.6 We consider that five years is a period of time that provides an appropriate balance between planning uncertainty, incentives and risk, and subject to discussions with Transport Scotland and DfT as part of the HLOS/SoFA process we expect to retain the current length of the control period. On this basis, CP5 would run from 1 April 2014 to 31 March 2019.

4.7 We recognise the concerns raised by some respondents and the suggestions that we adopt a longer control period. However, we consider that the fluctuations in work volumes relate more to Network Rail's asset policies and planning. If the industry's planning capabilities are improved (e.g. ensuring that Network Rail has clear and robust asset policies and plans, which give rise to a higher level of predictability in the workbanks), there would be much less support for a longer control period duration to deal with these issues. Also, the 'early start'[26] mechanism can be used by Network Rail to give some early certainty. In addition, in due course, we will expect Network Rail to engage with its suppliers as it produces its CP5 delivery plan – and this is one reason why we consider it important that Network Rail measures supplier satisfaction.

4.8 Transport Scotland has expressed to ORR its wish to dovetail CP5 with the next contract for passenger services in Scotland. We have discussed this with Transport Scotland and suggested that including appropriate trigger points within the incentive mechanisms and potentially other aspects of the regulatory framework we implement through PR13 might be a good way to achieve this. Transport Scotland is considering this and we will work with it to find a suitable approach.

Indexation of allowed revenues

4.9 Our May 2011 consultation set out the issues and options in relation to the treatment of inflation and indexing allowed revenues and input price inflation.

4.10 We have not concluded on these issues at this time and we intend to consult further in our consultation on detailed financial issues that we will publish at the start of August 2012. For the purposes of producing our advice we have assumed that Network Rail's income (access charges and network grant) will be indexed to general inflation on an annual basis in CP5 instead of establishing a nominal price control.

4.11 For input prices, we have assumed that Network Rail is best placed to manage input price inflation and that it should not be provided with any protection from input prices either through specific adjustments to our efficiency assumption or by indexing capex to a specific inflation index such as the infrastructure output price index (IOPI) which we included in our PR08 determination for Network Rail's renewal expenditure in CP4[27]. In the IIP, Network Rail has projected input price effects of 1% over CP5 on its support, operations, maintenance and renewals expenditure – and it reduced its 'gross' efficiency proposals for CP5 from 17% to 16% accordingly.

[26] Early start is a mechanism introduced in PR08 that allowed Network Rail to request an early funding decision on certain projects. We are retaining this mechanism for PR13 and will set out our approach in more detail in our April Framework for Setting Network Rail's Funding.

[27] Network Rail could still be protected through the material change in circumstances price control re-opener.

Amortisation

4.12 Amortisation remunerates Network Rail for its capital expenditure added to the RAB over time, i.e. by allowing Network Rail to recover amortisation through its charges we allow it to recover the cost of its capital (renewals and enhancement) investment[28]. In our May 2011 consultation we proposed to retain the high-level approach to amortisation that we adopted at PR08, where amortisation is based on:

(a) the long-run efficient annual average capital expenditure required to maintain the network in steady state;

(b) the amortisation of the non-capex RAB[29]; and

(c) any adjustments required to address financial sustainability issues.

4.13 Respondents to our May 2011 consultation supported the retention of our current high-level approach to amortisation. If we retain the PR08 approach for Network Rail's financing arrangements in CP5, as discussed in chapter 3, we will retain our high-level approach to amortisation (and we would give further explanation in our April Framework for Setting Network Rail's Funding document). However, as we state in chapter 3, if we adopt the adjusted WACC approach we will consult further on our approach to amortisation – which we will do in our August 2012 consultation on financial issues.

[28] Amortisation is an accounting term that is equivalent to depreciation. In our context it relates to the RAB: whilst our RAB policy is now based on only adding actual capital expenditure to the RAB, the initial RAB was not an exact reflection of the value of the infrastructure assets and there were various non-physical asset based additions to the RAB prior to the current policy starting in CP4.

[29] This is the amortisation over 30 years of additions to the RAB in CP3 that were not related to capex, e.g. incentive payments and revenue deferral.

5. Efficient expenditure assessment

Introduction

5.1 The purpose of this chapter is to explain our assessment of Network Rail's efficient expenditure and set out our the ranges for efficient expenditure for the 'current railway'.

Efficient expenditure

5.2 By efficient expenditure we mean the level and profile of expenditure that reflects our view of the necessary volume of activity and scope for efficiency improvement in CP5 to deliver the outputs that are required.

5.3 In determining the level and profile of efficient expenditure we will review and challenge Network Rail's proposals and its benchmarking evidence, as well as taking account of benchmarking studies that we have commissioned ourselves.

5.4 When we make our final decisions on efficient expenditure in PR13 we will do this as part of the balanced package, taking account of the wider regulatory framework and the incentives we establish.

Network Rail's core efficiency proposals

5.5 Network Rail's overall proposal on efficiency for CP5 included in the IIP is summarised in Table 5.1 (note this excludes so called 'embedded' efficiency, discussed further below). The proposals also include Network Rail's assumptions on input prices.

Table 5.1: Network Rail's core efficiency proposals for CP5

	Efficiency pre-input prices	Input prices	Efficiency post-input prices
Support	12%	(4%)	9%
Operations	21%	(1%)	20%
Maintenance	16%	(1%)	14%
Renewals			
Track	22%	(1%)	21%
Signalling, power, telecoms	19%	(1%)	18%
Buildings & civils	17%	(1%)	16%
Other	8%	(1%)	7%
Total efficiency (with input prices)	**17%**	**(1%)**	**16%**

Overall assessment of efficient expenditure

5.6 We have derived plausible ranges for the different expenditure categories of expenditure by considering the basis of Network Rail's own figures underlying the IIP, for the 'current railway' (including the committed enhancements), and applying adjustments to reflect our assessment of the risks that could feasibly give rise to a higher level of expenditure and the opportunities for reducing levels of activity and/or expenditure without adversely affecting the network outputs. We have drawn on our own benchmarking studies to inform our assessment.

5.7 This section is structured as follows:

(a) support costs;

(b) industry costs and rates;

(c) traction electricity;

(d) operations costs;

(e) maintenance and renewal costs; and

(f) committed enhancements.

5.8 In PR08 support costs and operations costs together were termed 'controllable opex'. Industry costs and rates and traction electricity costs together have previously been termed as 'non-controllable opex'. However, in PR08 the use of the term 'non-controllable opex' may have been misleading as we did apply efficiency assumptions to some of those costs, i.e. we treated some of those costs as having at least a degree of controllability. Therefore, to provide more clarity in PR13 we will not group industry costs and rates and traction electricity costs together in a cost category called 'non-controllable opex'. This better reflects our efficiency assessment where we are focused on appropriately incentivising Network Rail to minimise these costs.

Support costs

Context

5.9 Support costs are those administrative costs that Network Rail incurs in order to achieve its operational outputs, such as "central" or "HQ" costs related to finance, human resources and information management.

5.10 As shown in Table 5.2, Network Rail's expenditure on support costs in CP4 as a whole is projected in DP11 to be £250m and in 2010-11 was £45m. Network Rail achieved efficiency in controllable opex of 28% in CP3 and is projecting to achieve 15.3% efficiency in controllable opex in CP4 on a REEM basis[30].

[30] The Real Economic Efficiency Measure (REEM) is the measure that we have agreed with Network Rail for the public reporting of yearly opex, maintenance and renewals (OMR) efficiency improvements in CP4. For controllable opex and maintenance the baseline is 2008-09 actual expenditure plus adjustments for inflation and other exogenous factors, e.g. changes in traffic and required outputs; and for renewals, the baseline is a combination of our PR08 determination pre-efficient.

Table 5.2: CP4 Scotland support costs

£millions (2011-12 prices)	CP4
Human Resources	33
Information Management	37
Government and Corporate Affairs	11
Planning and Development	6
Finance	13
Commercial Property	26
Utilities	23
Insurance	38
Group	26
Other corporate functions	11
Investment Projects	2
Asset Information	5
Asset Management	8
Engineering	11
National Delivery Service	4
Property costs	(2)
Total	**251**

IIP

5.11 In the IIP Network Rail did not discuss support costs in detail but said that whilst it has improved its efficiency in support costs it is not operating at world class levels of efficiency for a private sector business of its size. In CP5, Network Rail intends to deliver savings by achieving higher efficiency on a function-by-function basis, and reducing the complexity of inter-functional proceesses.

5.12 In the IIP, Network Rail has assumed that it will spend £199m on support costs in CP5 and that it could reduce support costs by 8.6% over the course of CP4 (or 12%, excluding Network Rail's view of support cost input prices). Table 5.3 shows the areas where Network Rail considers that it can make savings.

Table 5.3: Network Rail's breakdown of efficiency savings

£millions (2011-12 prices)	CP5 (pre-efficient)	Post-efficient (as per IIP)	IIP saving
Human Resources	30	27	4
Information Management (inc. telecoms)	34	34	0
Government and Corporate Affairs	11	10	1
Planning and Development	6	5	0
Finance	14	13	0
Commercial Property	25	20	5
Utilities	25	24	1
Insurance	38	39	-1
Group (inc. property income)	4	-21	25
Other corporate functions	12	16	-4
Asset Information	6	7	-2
Asset Management	7	7	0
Engineering	11	11	0
National Delivery Service	3	7	-4
Total	**225**	**199**	**26**

Note: The decrease in group costs is due to a reduction in the amount of support costs recharged to other parts of Network Rail.

5.13 The IIP is relatively high level but Network Rail has provided a number of supporting documents that explain how it calculated its forecast of CP5 support costs. This is an improvement on the analysis we received at a similar stage of the process in PR08. In particular Network Rail's consultants have completed a number of benchmarking studies on employment costs, information management, human resources, finance, procurement and input prices. There are a number of areas though where Network Rail needs to carry out more work. This is discussed further in our requirements for Network Rail's SBP.

Our assessment

5.14 We have reviewed the IIP and Network Rail's supporting documents. We have not yet commissioned our own specific studies to benchmark Network Rail's costs as we said we would decide which studies would need doing after we have reviewed Network Rail's progress.

5.15 However, we have commissioned a study by CEPA to look at productivity improvements in other industries across support and operations expenditure (Oxera undertook similar work for us in PR08) as this work can inform our decisions on the scope for efficiency improvements in Network Rail[31]. CEPA's report considered the following three key measures of productivity improvement:

[31] Scope for improvement in the efficiency of Network Rail's expenditure on support and operations: supplementary analysis of productivity and unit cost change, March 2012, CEPA. This will be published at http://www.rail-reg.gov.uk/pr13/publications/index.php.

(a) real unit operating expenditure (RUOE). This is a measure of productivity which is commonly used by regulators to assess efficiency changes, through expressing costs in 'real unit' terms by adjusting for different levels of outputs over time;

(b) LEMS (labour, energy, materials and services) cost measure. This was used to compare movements in costs (i.e. expenditure on labour and intermediate inputs, excluding expenditure on capital) to changes in outputs to derive a unit cost measure over time; and

(c) total factor productivity (TFP), which takes into account all the factors of production (e.g. capital and labour) used to produce goods and services. It captures the component of change in output that is not explained by changes in inputs and can be used to estimate the scope for support and operations efficiency savings due to frontier shift.

5.16 The conclusions of this work are:

(a) on a RUOE basis CEPA's range for Network Rail's scope for efficiency improvements (net of input prices) in CP5 is 2.1% - 6.5% per annum, with an average of 4.4% per annum;

(b) on a LEMS basis CEPA have identified a range for Network Rail's scope for efficiency improvements (net of input prices) of 1.8% - 5.1% per annum. The bottom of CEPA's range is based on its composite benchmark (i.e. where it compares Network Rail to a combination of other industries based on the activities Network Rail carries out). The top end of the range is a direct comparison to the electricity, gas and water supply industries. CEPA identify that comparison with the electricity, gas and water supply industries may give a more accurate measure of the scope for efficiency improvements in Network Rail as those industries are also regulated and the time period that CEPA compared them to was a similar point in the business cycle to CP5; and

(c) from CEPA's analysis of changes in TFP (net of input prices), its estimate of the scope for ongoing frontier shift is 0.7% - 1.0% per annum for support costs, 0.3% - 0.5% per annum for maintenance costs and 0.3% - 0.4% per annum for renewals costs.

5.17 We have also commissioned work to carry out a comparison of Network Rail's support costs with international railway companies and non-railway companies. We expect this work to be completed in August 2012 and we will publish the findings.

5.18 Our range for efficiency on support costs highlights that we consider there is scope for Network Rail to make savings in excess of the savings it has identified in the IIP. Two of the main areas where we consider Network Rail can achieve more are in managing input prices and the pace of change (i.e. how quickly Network Rail can achieve its efficiency savings). Network Rail's general approach in the IIP to the pace of change has been to spread the savings it considers it can achieve over the next seven years to the end of CP5, which has the effect of increasing the revenue requirement compared to making quicker savings. We consider that this approach is different to a company operating in a competitive market, where we expect it would try to realise efficiency savings as soon as possible, which would be likely to be less than seven years. This is an important issue (both for support costs and other expenditure categories), so we intend to commission consultants to consider what the appropriate pace of change should be given the progress that Network Rail has made over the last ten years and the scope for further efficiency in CP5.

Our results

5.19 As discussed in chapter 3, we have reviewed whether the CP4 exit rate is appropriate for our pre-efficient CP5 assumption and have made minor adjustments (of £1m per year) for areas of expenditure that are not adquately justified at this point for our low value (and left unadjusted for our high value). We then

apply our efficiency assumptions to pre-efficient expenditure to obtain our assumptions on support costs in CP5. Our assessment is set out in Table 5.4.

Table 5.4: Support costs range for CP5

£millions (2011-12 prices)	CP4	IIP	Low	High
Pre-efficient	N/A	220	220	220
Saving (£m)	N/A	-30	-40	-10
Efficiency (%)	N/A	12%	16%	5%
Post-efficient	250	200	180	210

Note: CP4 pre-efficient, saving and efficiency numbers are not shown as in PR08 we assessed support costs as part of controllable opex (including operations).

5.20 The high end of our range for Network Rail's expenditure on support costs is as set out in the IIP. For the low end of the range for Network Rail's expenditure on support costs we have assumed that Network Rail can deliver more efficiency savings in CP5 on the basis of our assessment above. Our view on the range for possible efficiency improvement over the course of CP5 in core support expenditure is 8.6% to 25.8% compared to the IIP projection of 8.6%.

5.21 Our estimate of efficiency savings in the low end of range of 25.8% is based on CEPA's report, where we have taken the average of the high RUOE estimate (6.5% for five years, which equals 28.5% over five years) and the high LEMS estimate (5.1% for five years which equals 23.0% over five years).

5.22 Our estimate of efficiency savings in the low end of range of 8.6% is based on Network Rail's analysis and it is also the LEMS low estimate from CEPA's report.

5.23 The following benchmarks for estimating Network Rail's efficiency for core support costs provide context:

(a) Network Rail's projected CP5 improvement: 8.6% (12% before input prices);

(b) Network Rail's projected CP4 improvement on a REEM basis: 15% (net of input prices);

(c) Roll forward of our indicative assessment in PR08 of the efficiency improvement in CP5 (i.e. in PR08 we assumed Network Rail could only close part of the efficiency gap it faced in CP4 – where we estimated a total efficiency gap of 35%. So we assume in CP5 it closes the remaining part of the gap): 17% (net of input prices);

(d) 'RVfM low' for CP5 (netting off Network Rail's projected CP4 improvement): 24%; and

(e) 'RVfM high' for CP5 (netting off Network Rail's projected CP4 improvement): 30%.

Allocation of support costs between England & Wales and Scotland

5.24 Network Rail's support costs include central support costs such as finance and human resources costs. These central support costs represent 60% of total support costs and need to be allocated between England & Wales and Scotland. Network Rail has taken a relatively high-level approach to this issue in the IIP and used a simple allocation metric that is different to the metric used in its DP11. Using this different metric in the IIP reduced England & Wales support costs by £11m and increased Scotland support costs by £11m over CP5. A separate error in the allocation of group costs increased support costs in England & Wales by £25m and reduced support costs by £25m for Scotland over CP5. The net effect of this change

and the error was CP5 support costs for England & Wales were £14m higher over CP5 and support costs for Scotland were £14m lower than they otherwise would have been. For our advice we have used the allocation metrics used by Network Rail in DP11.

5.25 Network Rail needs to ensure that the rules it uses to allocate costs between England & Wales and Scotland are robust. We have asked Network Rail to review its allocation of costs between England & Wales and Scotland for the SBP and those allocations will be reviewed by Network Rail's auditors. Due to the difference in the relative levels of income and costs of Network Rail in England & Wales and Scotland, any changes to the allocation metrics will only have a minor effect on the England & Wales revenue requirement but could be material for Scotland.

Industry costs and rates

Context

5.26 Industry costs and rates include:

(a) British Transport Police costs;

(b) the Railway Safety and Standards Board (RSSB) levy;

(c) ORR fees (ORR licence fee and the railway safety levy);

(d) other costs such as Confidential Incident Reporting & Analysis System (CIRAS) fees; and

(e) business rates (i.e. cumulo rates).

CP4 and IIP expenditure

5.27 Network Rail's expenditure on industry costs and rates in CP4 as a whole is projected to be £112m and in 2010-11 was £21m, as set out in Table 5.5.

Table 5.5: CP4 industry costs and rates

£millions (2011-12 prices)	2009-10	2010-11	2011-12	2012-13	2013-14	Total CP4
Cumulo rates	8	11	13	15	15	61
British Transport Police	8	7	7	7	7	36
ORR fee	2	2	2	2	2	10
RSSB	1	1	1	1	1	4
RSB (CIRAS)	0	0	0	0	0	0
Total	**19**	**21**	**22**	**24**	**24**	**112**

5.28 Network Rail assumed that it would spend £95m on industry costs and rates in CP5 in the IIP and that industry costs and rates would rise by approximately 20% over the course of CP4.

Our results

5.29 We reviewed the IIP and Network Rail's supporting documents and our calculations of the range for industry costs and rates in CP5 are shown in Table 5.6. For our range, we have assumed that the low end of the range for Network Rail's industry costs and rates is £100m in the low end of the range and £140m in the high end of the range.

Table 5.6: Industry costs and rates range for CP5

£millions (2011-12 prices)	CP4	IIP	Low	High
Pre-efficient	N/A	120	120	120
Saving (£m)	N/A	-28	-20	18
Efficiency (%)	N/A	22%	20%	-15%
Post-efficient	112	95	100	140

Notes: (1) Network Rail also made an error in its allocation of rates between England & Wales and Scotland in the IIP, which had the effect of increasing rates costs in England & Wales by £40m and reducing rates costs in Scotland by £40m. (2) After taking account of this error, there is an increase in industry costs and rates in the IIP compared to CP4, which is due to Network Rail's CP4 exit position having higher rates costs than the start of CP4 due to the effect of transitional relief (i.e. the new level of rates costs is phased in following a revaluation).

5.30 In order to produce our range we have assumed that:

(a) for British Transport Police and RSSB costs: in the IIP, Network Rail provided only limited evidence for these costs. Therefore, we have applied a relatively simple approach to these costs, and in the low end of our range we applied our core support costs general efficiency assumption (26% over CP4) to Network Rail's pre-efficient IIP and the high end of the range is Network Rail's IIP. This is the same method that we used to calculate efficient support costs; and

(b) for rates: as the next valuation process has not started, we have simply assumed the low end of our range is 20% below the IIP and the high end of the range is 20% above the IIP.

Traction electricity

5.31 Traction electricity is procured by Network Rail on behalf of the train operators operating electrified services. Network Rail's expenditure on traction electricity in CP4 as a whole is projected to be £71m and in 2010-11 was £13m. Network Rail has assumed that it will spend £123m on traction electricity in CP5 in the IIP. The increase in CP5 spend, compared to CP4, can be attributed to three factors:

(a) a rising trend in train kilometres in the next control period, leading to increased consumption;

(b) the expanision of the electrified network as electrification enhancements projects are completed; and

(c) the rising price of electricity forecast by the Department for Energy & Climate Change (DECC).

5.32 We reviewed the IIP and Network Rail's supporting documents. We have assumed that traction electricity costs are £110m in the low end of the range and £140m in the high end of the range over the course of CP5. Given the uncertainty in the forecast of traction electricity costs, due principally to international energy market factors but also to demand by train operators and the levels of Network Rail's own system use/losses, we have simply assumed a range of +/-10% round Network Rail's IIP forecast at this stage.

Operations expenditure

Context

5.33 Operations costs include expenditure on activities that 'operate' the infrastructure to allow trains to run such as signallers, control staff and timetabling. In CP4 Network Rail was funded £190m and spent £40m on operations costs in 2010-11. The largest aspect of this category is signaller costs and the RVfM study identified signalling as a possible opportunity to reduce the industry's cost base, where a long-term capital programme could eliminate less productive old technology.

Initial Industry Plan

5.34 The major influence in reducing operations expenditure is Network Rail's operating strategy which aims to reduce annual operations expenditure by: reducing its workforce from 540 to less than 150; migrating operational management from 89 locations to two centres; and deploying modern signalling and control systems. Elements of this strategy, such as filling up the new centres, are already underway in CP4. In CP5 Network Rail plans to invest £190m. This investment, along with plans to reduce non signaller and central costs, will reduce its annual operations expenditure to £34m by 2018-19.

Our assessment

5.35 Network Rail's plans set out a new way to reduce operations expenditure. We have therefore taken a different approach to PR08 but our objective remains the same, which is to determine the efficient levels of operations expenditure required for CP5. The efficient level of investment, mainly signalling renewals, is covered by our maintenance and renewals assessment. At this stage of the review process we have focussed on signaller costs, which is the main factor affecting our range.

5.36 We have examined the operating strategy business case for Scotland that informed the IIP and have reviewed the plans to bring the centres into use. There are many components involved in delivering the strategy, including renewing signals at Motherwell, extending the Glasgow centre, introducing new IT systems and redeploying staff. In producing its programme Network Rail needs to balance a number of factors, such as industrial relations, supply chain capability (both within Scotland and within England & Wales) and optimal renewal schedules. Renewing signals represents the main component of the strategy and we have examined Network Rail's delivery to date in CP4.

5.37 The RVfM study examined the operating strategy and concluded that it was an opportunity to further reduce staff numbers. It did not make any additional recommendations in this area and did not include any further benefits in its estimates. This study was supported by a report produced by Civity, which provides some approximate international benchmarks[32]. We compared these to Network Rail's target levels of expenditure.

5.38 We have also audited Network Rail's own international benchmarking work and found that, whilst it has been difficult to gather enough information, it has approached the task thoroughly. The work done to date has not yet produced a firm set of comparrisons but it builds upon the work carried out for the RVfM study. It shows that Network Rail is not yet on a level with the best in Europe but the operations strategy will take them closer to the frontier[33].

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[32] http://www.rail-reg.gov.uk/upload/pdf/rvfm-civity-benchmarking-090511.pdf.

[33] Network Rail bottom up benchmarking review: benchmarking of operations costs - Final Report by Arup - Executive Summary, March 2012, available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

Our results

5.39 We believe that the rationale for the operating strategy in Scotland is sound but the target levels of operations expenditure by the end of CP6 do not compare as favourably with European operators as England & Wales. Our range reflects the rate at which Network Rail can be expected to deliver these savings in CP5, with high efficiency representing acceleration of savings ahead of current plans and low efficiency representing risks to delivering the strategy as planned.

Table 5.7: Operations costs range for CP5

Costs in £millions (2011/12 prices)	CP4	CP5		
	Actual and forecast	IIP	Low	High
Pre-efficient	n/a	190	190	190
Efficiency overlay	n/a	6%	8%	3%
Post-efficient	190	180	180	190

5.40 Network Rail is broadly on target to deliver its signalling renewals volumes in CP4. It has also already built the two new centres, although it needs to extend the one in Glasgow. However, its ability to deliver other aspects, such as new IT systems, is unproven and its recent track record on delivering related or comparable projects, such as ITPS across GB and ERTMS in Wales, has been poor.

5.41 To address these shortcomings it has linked up with the infrastructure operator in Switzerland and is using expertise from there in delivering the new traffic management system. It is also using the independent reporters to learn lessons from ITPS and the ERTMS Cambrian trial to strengthen its ability to deliver related schemes and wider business change.

5.42 On balance, we believe that Network Rail's plans to deliver the operating strategy are achievable but it may be able to accelerate the schedule to deliver the benefits sooner. There is a noticeable difference with England & Wales in CP5 savings, with about 25% reduction in posts compared to about 15% in Scotland. This is because most of the reductions in Scotland are planned in CP6 and CP7, driven by the GB wide roll out plan for the European Train Control System.

Uncertainties and future work

5.43 Between now and the Strategic Business Plan we expect the business case to develop sufficiently to inform the plan and be presented in an appropriate format to justify the level of efficient operations expenditure during our assessment of the SBP. We will be challenging the rate of delivery to ensure that Network Rail has got the right balance between factors to produce the optimal programme, noting the differences with England & Wales.

5.44 We will also be looking further at comparisons with England & Wales and other international benchmarks to build upon our initial analysis to gauge how Network Rail's levels of expenditure compare to other infrastructure operators.

Maintenance and renewals

Context

5.45 This section sets out our assessment of Network Rail's plans for efficient maintenance and renewal expenditure in Scotland and presents our range for potential expenditure levels in CP5.

5.46 We have conducted a separate assessment of Network Rail's plans for Scotland. In doing so we have applied the same overall methodology as applied to the rest of the network. In certain areas, discussed below, we have identified that Network Rail must do further work to ensure that its plans for Scotland are made more robust by the time of SBP.

5.47 Maintenance expenditure covers the work required to maintain assets efficiently and sustainably. Maintenance expenditure is forecast and assessed for each of the following main asset categories: track, civil structures, signalling, electrification and telecommunications. Funding for maintenance in CP4 totals £566m. Network Rail spent £101m on maintenance activities in 2010-11. During CP3 the company achieved 35% efficiency in maintenance activities. In CP4 we assumed that it could achieve 18%.

5.48 Renewal expenditure covers work to replace assets which have reached, or are nearing, the end of their useful lives with the modern equivalent asset. Renewal expenditure is forecast and assessed for the same asset types as maintenance (track, civil structures, signalling, electrification, telecommunications) as well as operational property, fleet and other renewals. Funding for renewals in CP4 totals £1,526m. Network Rail spent £278m on renewals activities in 2010-11. During CP3 the company achieved 24% efficiency in renewals works. In CP4 we assumed that it could achieve a further 24%.

IIP

5.49 The IIP documents describe the opportunities identified by the rail industry to deliver greater efficiencies. Network Rail's plans to improve value for money in Scotland include:

(a) decentralisation: Scotland was one of the first routes to be decentralised in May 2011. This transferred decision making and management accountability with the aim of improving efficiency and responsiveness to the needs of customers;

(b) developing an alliancing agreement between Network Rail and ScotRail to align behaviours through shared incentives;

(c) improved management of the supply chain and introduction of competition for project delivery;

(d) providing better defined, more stable workbanks;

(e) improved asset management to reduce the whole lifecycle, and whole system cost of network assets;

(f) revising standards and operating rules; and

(g) developing a multi-skilled, flexible workforce.

5.50 Network Rail has also provided a detailed breakdown of data and some of the modelling used in support of its contribution to the IIP. The models cover the GB network but costs and volumes can be reported separately for Scotland and have been subject to separate review. Network Rail's renewals and maintenance expenditure plans deliver the low estimate of the efficiency gap from the top-down 'should-cost' analysis in the RVfM Study. This is based on the catch-up efficiency gap identified by us as part of PR08 using a combination of top-down and bottom-up evidence. Its maintenance and renewals expenditure plans are summarised in Tables 5.8 and 5.9.

5.51 Efficiencies can be presented in different ways. In the IIP the efficiencies forecast for Network Rail did not include efficiencies from its proposed CP5 asset policies, which Network Rail has called “embedded efficiencies”. In Tables 5.8 and 5.9 we have presented the total efficiency which Network Rail is proposing, including efficiencies delivered by its proposed CP5 asset policies.

Table 5.8: Network Rail’s maintenance plans in the IIP

£millions (2011-12 prices)	CP4	CP5 IIP
Pre-efficient	545	446
Efficiency overlay	18%	14%
Post-efficient	464	407

Table 5.9: Network Rail’s renewal plans in the IIP

£millions (2011-12 prices)	CP4	CP5 IIP
Pre-efficient	1,687	1,624
Efficiency overlay	24%	21%
Post-efficient	1,519	1,366

Our assessment of maintenance and renewal efficient expenditure

5.52 We have developed our range of plausible expenditure requirements for maintenance and renewal through robust challenge of Network Rail’s plans. We have made adjustments to its plans where we have identified factors which may lead to an increased or reduced expenditure requirement. In doing so we have considered:

(a) the potential range of scope efficiencies delivered through improved asset policies; and

(b) the potential range of unit cost efficiencies available.

5.53 We have assessed the robustness of Network Rail’s volume forecasts and projections of unit costs to the end of CP4. Network Rail’s volume forecasts are built on its proposed asset policies for CP5, applied to its network assets as projected during the period. We have therefore considered the quality of Network Rail’s:

(a) draft CP5 asset policies;

(b) asset data knowledge;

(c) asset degradation understanding;

(d) forecasts of unit costs at the end of CP4 – which are relevant as they are necessary to produce the pre-efficient levels of expenditure for CP5, i.e. before further efficiency improvement; and

(e) modelling used to derive cost and volume plans.

5.54 Network Rail has then applied assumed efficiencies, over and above those delivered by its asset policies. These include unit cost efficiencies. We have assessed its efficiency assumptions using the following methods and evidence:

(a) review and challenge of Network Rail's efficiency forecasts;

(b) review of Network Rail's bottom-up benchmarking;

(c) evidence from our own bottom-up benchmarking studies;

(d) evidence from top-down benchmarking studies; and

(e) evidence from the RVfM study.

5.55 We have used a statistical technique called Monte Carlo analysis to understand the likely range of post-efficient maintenance and renewal expenditure given uncertainties in the scope and unit cost efficiencies which may be achievable. The analysis reflects the fact that it is unlikely that all highest or lowest possible expenditure requirements from the underlying maintenance and renewal analyses will be realised. The Monte Carlo analysis conducted has narrowed our ranges presented.

Our key findings

5.56 For renewals, our low expenditure (high efficiency) end of the range is 13% lower than the IIP and our high expenditure (low efficiency) is 5% higher than the IIP. For maintenance, our low expenditure (high efficiency) end of the range is 13% lower than the IIP and our high expenditure (low efficiency) is 2% lower than the IIP.

5.57 Network Rail has made some good progress towards producing a robust SBP. It has recognised the importance of developing best practice asset management capability and is implementing plans to achieve this. Its draft CP5 asset policies are a work-in-progress but it is already apparent that they have the potential to be a significant improvement on the current policies. Network Rail is working to develop the capability to carry out minimum whole life cycle (whole system) cost analysis.

5.58 However, there is still a lot of work to do and this is reflected in our ranges. The key findings influencing the low ends of our ranges are:

(a) Draft asset policies:

(i) **Minimum whole lifecycle cost:** Network Rail's draft asset policies have not yet been demonstrated to be minimum whole lifecycle (and whole system) cost. We therefore think that further efficiencies may be realised. This applies to all major categories of asset.

(ii) **Risk:** The draft asset policies have not yet been demonstrated to fully consider risk. For example, they do not yet appear fully to consider the benefits available from risk based maintenance.

(iii) **Link to outputs:** Network Rail has not yet adequately demonstrated the link between the draft asset policies and delivery of its proposed outputs.

(iv) For renewals, these factors account for roughly £50million of the difference between Network Rail's IIP forecast and the low end of our range. For maintenance they account for roughly £12m.

(b) Modelling and asset information:

(i) **Asset data knowledge:** Network Rail's asset data knowledge is variable. We have particular concern over knowledge of civil structure assets, drainage assets, and switches and crossings.

(ii) **Asset degradation:** Network Rail has not yet demonstrated that it has sufficient understanding of asset degradation. We have particular concerns over understanding of civils structures, buildings, electrification and signalling.

(iii) **Unit costs:** Network Rail has further work to do in developing CP4 exit unit costs. In some cases these costs are developed from actual, reported unit costs. We wrote to Network Rail in May 2011 to set out our expectations for improvement of its unit cost framework for PR13[34]. Network Rail has responded and is in the process of implementing a plan to improve the quality and coverage of its unit cost reporting. In developing its SBP Network Rail needs to do far more to understand regional variations in unit cost in order to develop robust regional expenditure plans. In the IIP it has used network-wide unit costs. This has implications for the accuracy and robustness of its separate plans for Scotland.

(iv) **Planning models:** Network Rail's models which are used to develop its plans are of variable quality. Modelling of civil structures policy is poor. There is concern over the quality of inputs to the civil structures and buildings models. More transparency is required where workbanks are derived outside of the strategic planning models. This includes signalling, electrification, buildings and civil structures workbanks.

(v) For renewals, these factors account for roughly £50million of the difference between Network Rail's IIP forecast and the low end of our range. For maintenance they account for roughly £30million.

(c) Further unit cost efficiencies:

(i) **Network Rail's bottom-up benchmarking:** This work is at an early stage of development. It has not yet produced robust quantified benchmarks using sufficient data points.

(ii) **ORR bottom-up studies:** Initial findings from our supply chain management and possessions management benchmarking studies indicate that further efficiencies may be available above those considered by Network Rail.

(iii) **Asset management:** The asset management reporter, AMCL, estimates that between 15% and 20% maintenance savings and between 10% and 15% renewals savings can be gained from continued improvements in asset management over the course of CP5.

(iv) **The RVfM study:** This has indicated that further efficiencies could be achieved through improvements in cross-industry collaboration and by removing barriers.

(v) For renewals, these factors account for roughly £70million of the difference between Network Rail's IIP forecast and the low end of our range. For maintenance they account for roughly £11million.

5.59 The key findings influencing the high ends of our ranges are:

(a) **Modelling and input information uncertainty:** There are uncertainties introduced by the quality of modelling and input information which may result in a higher expenditure requirement than forecast by Network Rail.

(b) **Delivery of efficiencies:** In some areas we think there is a risk that Network Rail may not be able to deliver the efficiencies which it has forecast for CP5.

[34] http://www.rail-reg.gov.uk/upload/pdf/unit_costs_letter-090511.pdf

(c) Following our Monte Carlo analysis the high ends of our range are lowered, bringing them closer to Network Rail's IIP forecasts.

Long-run rate of renewals

5.60 The average long-run rate of renewals is used as the basis of our amortisation provisions in the PR08 approach financial scenario (as explained in chapters 3 and 6). Network Rail has forecast its maintenance and renewals expenditure over 35 years from the start of CP5 to the end of CP11. To derive the long run rate of renewals we have:

(a) taken Network Rail's long-term pre-efficient renewals expenditure plans;

(b) developed a range around these plans based on our range for pre-efficient expenditure in CP5 and projecting this forward to CP11;

(c) calculated the high and low annual average pre-efficient expenditure to CP11;

(d) applied low and high efficiencies as calculated for the final year of CP5 to all control periods to CP11; and

(e) applied a range of annual frontier shifts based on the findings of a consultancy study which will be published later in March 2012

Our results

5.61 Our ranges for maintenance and renewal expenditure are set out in Tables 5.10 and 5.11.

Table 5.10: Our range for maintenance expenditure in CP5

£millions (2011-12 prices)	CP4	CP5		
		IIP	Low	High
Pre-efficient	545	446	420	450
Efficiency overlay	18%	14%	21%	16%
Post-efficient	464	407	350	400

Table 5.11: Our range for renewals expenditure in CP5

£millions (2011-12 prices)	CP4	CP5		
		IIP	Low	High
Pre-efficient	1,687	1,624	1,560	1,620
Efficiency overlay	24%	21%	33%	16%
Post-efficient	1,519	1,366	1,180	1,440

Uncertainties and future work

5.62 Network Rail has further work to do in developing its SBP and to reduce the uncertainty associated with its plans. This includes:

(a) further work to improve its efficient expenditure forecast for Scotland, including doing far more work to understand the unit costs and efficiency opportunities particular to Scotland;

(b) further development of asset policies to demonstrate that they are capable of delivering the required outputs for Scotland both in the short and long-term, at minimum whole life (and whole industry) cost;

(c) further development of strategic planning models to accurately model the application of asset policy to the asset base;

(d) further work to gain the best possible understanding of the asset base, including understanding of degradation as particular to Scotland; and

(e) further work to understand available efficiencies in CP5, including further effort to acquire and analyse international benchmarking data and to quantify identified efficiency opportunities.

International benchmarking

5.63 In PR08, econometric analysis using the LICB dataset (dataset of international comparators established by UIC, the International Union of Railways) was an important contributor towards our estimate of the scope for Network Rail to improve the efficiency of its maintenance and renewals expenditure. The dataset was provided to us by Network Rail with the agreement of the UIC and the members of the LICB group. In summary, we estimated that the efficiency gap to the upper quartile at the end of CP3 was 35% but we only assumed two-thirds of this in our determination for CP4 – recognising the realistic pace of change for the company given all of the other obligations placed on it through PR08, and that there was uncertainty in the international econometric analysis. All the other qualitative and quantitative, top-down and bottom-up, international benchmarking undertaken in PR08 by us, and also by Network Rail, confirmed a substantial efficiency gap in line with the results of the econometric analysis[35].

5.64 We updated our econometric analysis in 2010 (using data up to and including 2008), which broadly confirmed the efficiency gap established in PR08 (our work produced an efficiency gap of 34 – 40% compared to the leading comparator)[36].

5.65 Since PR08, several issues have come to light regarding the quality of the LICB dataset that has been developed and collected by the UIC since 1995. Network Rail, through its work with the UIC and other infrastructure managers, has highlighted potential issues with completeness and consistency of some of the historical data in LICB, including inconsistencies around the definition of renewals and enhancement data. In addition to this, a number of countries no longer provide data to the LICB dataset.

5.66 We have updated our analysis using the more recent data from the LICB and the gap between Network Rail and comparators has narrowed; beyond that which would be expected through Network Rail's own improvements in efficiency. We believe this to be due to a combination of:

[35] See chapters 7 and 8, Periodic Review 2008: Determination of Network Rail's outputs and funding for 2009-14, available at http://www.rail-reg.gov.uk/upload/pdf/383.pdf.

[36] The report is available at http://www.rail-reg.gov.uk/upload/pdf/econometric_update_2010_orr_benchmarking_report.pdf.

(a) an increase in maintenance and renewals expenditure in some of the comparator countries in recent years;

(b) a substantial reduction in Network Rail's renewal costs in 2009-10, in part due to deferrals; and

(c) adjustment to Network Rail's renewals cost data to make it, in Network Rail's view, more consistent with other countries.

5.67 We have started to review Network Rail's work on the LICB dataset and the findings of its engagement with other infrastructure managers.

5.68 The low estimate of the RVfM top-down analysis was based on our PR08 estimate of the efficiency gap between Network Rail and comparators, i.e. that Network Rail should close the 35% gap by 2018-19. Despite the potential issues with the LICB dataset and the econometric analysis this, Network Rail has committed in the IIPs to the low RVfM estimate. The company acknowledges that it can make significant efficiency improvements and that, in any case, it would not see the efficiency of the (publicly owned) leading European railways as the limit of what it can or should achieve.

Enhancements

Expenditure assessment

5.69 We have treated enhancements differently to the other areas of expenditure. We have included the IIP numbers for the Edinburgh to Glasgow Improvement Programme in our calculations of the revenue requirement but we have not calculated a range.

5.70 Our approach to determining the efficient cost of enhancement schemes in PR13 will necessarily depend on how outputs are specified in the HLOS, but broadly speaking it will involve: (a) if the HLOS requires capacity improvements or other changes which require enhancement projects to be specified, deciding what projects are actually needed to meet the specification; (b) deciding on the efficient costs of schemes that Transport Scotland has already committed to and which span control periods; and (c) deciding on the efficient costs of any new schemes required either as a result of the HLOS or Scottish Ministers' other reasonable requirements.

Wider advice

5.71 The remainder of this section provides wider advice on the proposed enhancements. At this stage of the process this advice sets out options that Ministers will want to consider in developing their HLOS and is structured around the categories of investment set out in the IIP and supporting documentation.

Committed projects

5.72 There are two projects that were committed either through the last periodic review or since then. In our CP5 determination we will need to calculate the closing RAB for CP4 and the efficient levels of funding for CP5 for these. We have been working with Network Rail and Transport Scotland on efficient costs. Table 5.12 lists the committed projects and current stage of development.

Table 5.12: Status of committed projects

Project	Current status
	GRIP stage
Edinburgh to Glasgow Improvement Programme	4
Borders railway	3/4

Funds

5.73 In CP4 we allowed a mechanism for funding unspecified projects known as 'funds' as well as funding specific projects with defined outputs. These are designed to give the industry flexibility to determine the most cost effective way to deliver outputs and flexibility to respond to emerging risks and unforeseen circumstances. Our role varies according to the purpose of each fund but we require Network Rail to ensure they are spent efficiently.

5.74 During the course of the current control period we have used the independent reporters to check the efficiency of some of the funds in England & Wales and have published reports on our website[37]. We have also undertaken a recent review[38] to pull together conclusions from these audits and learn any lessons specific to Scotland and/or England & Wales for CP5 against some specific criteria, namely transparency and localism.

5.75 Overall the funds have so far been used appropriately in CP4 with the Network Rail Discretionary Fund (NRDF) achieving high value for money schemes and National Stations Improvement Programme (NSIP) following good procurement practice. However, we think there are ways to make outputs clearer and more visible to stakeholders. If funds are specified in the HLOS, the purpose of each should be clearly identified. We will then make sure that Network Rail interprets how best to achieve this in the Strategic Business Plan and appropriate cross industry governance arrangements are put in place and reported in the CP5 delivery plan.

Proposed schemes

5.76 The information supporting the IIP is at a more advanced stage than at the equivalent point in the last periodic review and is generally at GRIP stage 2 or 3. This is in part because we provided Network Rail with funding to develop schemes in CP4 through the Tier 3 Project Development Fund. However, Motherwell area stabling, Motherwell North resignalling and Portobello Junction projects are at a very early stage of development.

[37] http://www.rail-reg.gov.uk/server/show/nav.2231

[38] Review of CP5 proposed funds – report, March 2012, available at http://www.rail-reg.gov.uk/pr13/publications/index.php.

6. Financial variables

Introduction

6.1 The purpose of this chapter is to explain our assessment of the ranges for the financial variables/building blocks that underlie the calculation of Network Rail's revenue requirement, in particular amortisation, the allowed return and the opening RAB for CP5. The chapter also covers other single till income.

Amortisation

6.2 As explained in chapter 3, amortisation remunerates Network Rail for its capital expenditure, i.e. the recovery of the cost of its historic capital (renewals and enhancement) investment.

6.3 In PR08 we determined that Network Rail's amortisation in CP4 as a whole would be £1,032m; in 2010-11 it was £206m. In the IIP, applying largely the same method as we did in PR08, Network Rail assumed that amortisation would be £1,110m over the course of CP5, which is £222m per annum.

6.4 As set out in chapter 3, depending on the approach to Network Rail's financing arrangements that is decided on for CP5 different approaches will potentially be adopted. We have said that we will consult further on amortisation in our August 2012 consultation on financial issues.

PR08 approach

6.5 For the PR08 approach we are assuming for this advice that we will retain our current approach, based broadly on long-run steady-state renewals expenditure.

6.6 In order to establish our range for amortisation, we have reviewed the IIP and Network Rail's supporting documents and this review has been taken account of in our calculations of the range for amortisation. Our amortisation calculation is set out in Table 6.1, showing the annual values.

Table 6.1: Calculation of amortisation – annual values

£millions (2011-12 prices)	PR08 determination	CP5		
		IIP	Low	High
Pre-efficient average long-run steady state renewals	297	267	270	280
Efficiency overlay	36%	15%	33%	16%
Frontier shift	-	10%	6%	4%
Post-efficient average long-run steady state renewals	190	204	170	230
Non-capex amortisation	18	18	20	20
Total	208	222	190	250

6.7 In terms of the CP5 total, we have assumed that amortisation is £190m in the low end of the range and £250m in the high end of the range over the course of CP5, which on average is £40m per annum in the low end of the range and £50m per annum in the high end of the range. The main differences to the IIP are:

(a) we have reviewed Network Rail's projection of long-run renewals in its IIP and where necessary taken a different view for our high value; and

(b) we have assumed that Network Rail can make total efficiency improvements of 20% in the low end of the range and 39% in the high end of the range. This is made up of 16% in the low end of the range in CP5 and 33% in the high end of the range in CP5 and 6% in the low end of the range after CP5 and 4% in the high end of the range after CP5. This is derived from our CP5 efficiency assessment discussed in chapter 5 and our view of efficiencies post-CP5 based on the CEPA report also discussed in chapter 5. CEPA set out a range for renewals frontier shift of 0.3% - 0.4% per annum. In contrast, Network Rail in addition to the renewals efficiencies it thinks it can achieve in CP5 (15%) also thinks it can achieve an additional 10% overlay for long-run efficiencies.

6.8 The key issues that we need to consider further in CP5, depending on the approach to amortisation we adopt, are:

(a) the level of pre-efficient long-run renewals; and

(b) the efficiency assumption that we use to calculate post-efficient long-run renewals.

6.9 In addition, we will also need to consider financial sustainability issues. An assessment of financial sustainability involves considering whether Network Rail's financial obligations can be met efficiently over the longer time, i.e. can Network Rail's debt be re-financed when appropriate and serviced efficiently and is the level of debt appropriate for a company such as Network Rail.

6.10 These issues ultimately will be concluded on in our PR13 determination. However, before then in our consultation on detailed financial issues in August 2012 we will set out the detailed issues involved in calculating our amortisation assumption.

Adjusted WACC approach

6.11 If we adopt the adjusted WACC approach we will further consult on our approach to amortisation as in the December 2011 incentives document we recognised that it is important when deciding on our approach to take account of financial sustainability, e.g. debt is higher. For the purposes of this advice we have assumed that annual amortisation in CP5 is equal to the annual average of our forecast of renewals expenditure in CP5.

Allowed return

6.12 The allowed return funds Network Rail for its financing costs in relation to its RAB[39].

6.13 We determined that Network Rail's allowed return in CP4 as a whole was £1,010m and in 2010-11 was £200m. In the IIP, Network Rail assumed that its allowed return would be £1,180m over the course of CP5, which is £240m per annum.

[39] The allowed return is Network Rail's RAB multiplied by the rate of return (cost of capital) we determine.

6.14 Network Rail did not forecast its cost of capital in CP5 for the IIP. It simply used the PR08 assumption of 4.75% (real, vanilla[40]), which is disappointing given the importance of the cost of capital in the revenue requirement calculation.

6.15 Our consultants, First Economics, have reviewed recent regulatory precedent on the cost of capital and market conditions and we have used their report to determine our range for cost of capital in this document[41].

6.16 The weighted average cost of capital (WACC) reflects the risks that a conventionally financed Network Rail (i.e. financed with debt and equity unsupported by government) would take and hence the income that a company would require for managing those risks. The underlying methodology that we have used to estimate Network Rail's cost of capital is the capital asset pricing model (CAPM). This model has been extensively used by regulators to estimate the cost of capital for regulated companies.

6.17 Estimating a company's cost of capital is difficult and a number of questions have been raised about CAPM and whether it is appropriate. Acknowledging this, some regulators have used other models such as the dividend growth model, in order to provide a sense check on the estimates provide by CAPM. We will discuss in the August 2012 detailed financial issues consultation how we intend to estimate Network Rail's cost of capital in PR13.

6.18 For this advice we have assumed that the low end of the range for Network Rail's cost of capital (real, vanilla) is 3.92% and the high end of the range is 4.87%. In the PR08 approach financial scenario this translates to an allowed return of £980m in the low end of the range and £1,200m in the high end of the range over the course of CP5, which on average is £200m per annum in the low end of the range and £240m per annum in the high end of the range. In the adjusted WACC scenario this translates to an allowed return of £990m in the low end of the range and £1,220m in the high end of the range over the course of CP5, which on average is £200m per annum in the low end of the range and £240m per annum in the high end of the range.

6.19 In the adjusted WACC approachfinancial scenario we have also deducted from Network Rail's revenue requirement an amount that represents the return that is assumed to have been required by equity holders. This is £350m in the low end of the range and £370m in the high end of the range over the course of CP5.

6.20 For the purposes of this advice we have taken account of the costs of Network Rail's embdedded interest costs in our forecast of Network Rail's CP5 interest costs (i.e. the amount of Network Rail's interest costs that are fixed in CP5).

6.21 Network Rail's debts are guaranteed by the Secretary of State for Transport through the financial indemnity mechanism (FIM). In return for the FIM, Network Rail pays DfT, as provider of the FIM, an annual fee (the FIM fee) that reflects the value of the credit quality enhancement that the FIM provides. We have assumed that is 0.78% in the low end of the range and 1.29% in the high end of the range. In the PR08 approach financial scenario this translates to £110m in the low end of the range and £180m in the high end of the range over the course of CP5, which on average is £20m per annum in the low end of the range and £40m per annum in the high end of the range. In the adjusted WACC scenario this translates to £120m in

[40] A 'vanilla' return is based on a pre-tax cost of debt and post-tax cost of equity.

[41] First Economics, Network Rail's Allowed Return, December 2011. This report is available at: http://www.rail-reg.gov.uk/upload/pdf/fe-cost-of-capital-assessment.pdf.

the low end of the range and £200m in the high end of the range over the course of CP5, which on average is £20m per annum in the low end of the range and £40m per annum in the high end of the range.

6.22 In PR08, we established a 'risk buffer' for Network Rail, as part of the financial framework, to enable Network Rail to manage business risk and normal fluctuations in cash flow. We will consult on our detailed approach to the risk buffer in our August 2012 detailed financial issues document.

6.23 For the purposes of this advice we have made relatively simple assumptions for the risk buffer. We have assumed that in the PR08 approach financial scenario the risk buffer will be £100m in the low end of the range and £140m in the high end of the range over the course of CP5. The low end of the range is based on Oxera's PR08 report for us on risk and the high end of the range is simply the PR08 assumption rolled forward[42]. In the adjusted WACC scenario we have assumed that in the low end of the range Network Rail will not have a risk buffer and in the high end of the range that the risk buffer will be equal to the PR08 assumption, which is £140m over the course of CP5.

6.24 Key issues that we will be working on over the course of PR13 in relation to the allowed return are:

(a) what is the appropriate cost of capital, cost of equity, cost of debt and gearing;

(b) what are Network Rail's efficient financing costs;

(c) what is an appropriate FIM fee;

(d) what risk buffer (if any) does Network Rail require;

(e) how we should take account of current market conditions; and

(f) in the PR08 approach financial scenario, if retained, how should the ring-fenced fund work.

Modelling the two financial scenarios

6.25 The way we have modelled the two financial scenarios in order to produce our ranges are:

(a) **PR08 approach.** The key assumptions in this aproach are:

(i) we assume a gradual increase in Network Rail's use of unsupported debt through CP5 (issuing around £200m of unsupported debt over CP5), i.e. we apply the PR08 gradualist approach [43];

(ii) any surplus cash (i.e. allowed return less efficient financing costs (on a cash basis) less FIM fee less risk buffer) is re-invested in the network by Network Rail through the use of the ring-fenced fund;

(iii) we have assumed that the risk buffer is not drawn down (i.e. Network Rail's delivers the determination without overspending, so the surplus is then used to pay down debt); and

(iv) we have not assumed that the issue of unsupported debt will increase Network Rail's efficiency.

(b) **Adjusted WACC approach.** A WACC return is established but it is not reinvested via the ring fence fund as in the PR08 approach. Instead, since Network Rail does not have shareholders and does not pay a dividend, we reduce the revenue requirement for the amount of funding that is in excess of what

[42] This report is available at http://www.rail-reg.gov.uk/upload/pdf/pr08-isbp-oxera.pdf .

[43] Originally in PR08 we assumed that Network Rail would raise all additional debt on an unsupported basis from the start of CP4. Given the movements in financial markets this approach was changed to the gradualist approach over the course of PR08 and reflected in our final determination.

we think Network Rail will need to fund its efficient financing costs and any surplus that we consider Network Rail may need to manage risk efficiently (i.e. the risk buffer).

In other words the 'equity' return component of the WACC that is unnecessary to remunerate shareholders is netted off the revenue requirement, hence reducing government funding.

In terms of the impact on Scottish Ministers' financial position in relation to the level of the allowed return, this approach has the equivalent impact as the 'rebate approach' and the 'cost of debt approach' included in our December 2011 incentives consultation[44]. Furthermore, as with the rebate approach and the cost of debt approach this means that, all other things equal, compared to the PR08 approach, debt and RAB will be higher in CP6. As set out above, if we adopt the adjusted WACC approach we will further consult on our approach to amortisation.

6.26 Professor Dieter Helm advocates an approach that would see regulators no longer set a single WACC for a regulated utility but instead establish two separate WACCs. One would apply to the riskier elements of the business, for example construction of new assets, reflecting substantial equity finance. The other would apply to the lower risk elements of the business, such as operating existing assets. Professor Helm suggests that a RAB-based approach could provide the basis for cost recovery in the lower risk portion of the business, and that the higher risk part of the business could sell assets on completion into the RAB at the efficient cost of construction.

6.27 In rail, Professor Helm has suggested that this approach could allow the RAB to be held in a form of public trust, reflecting its national importance, while allowing the transfer of equity-type risk (e.g. as associated with construction) to the private sector. We are assessing this approach further and in our April 2012 document we will provide our views on whether we think this split cost of capital approach is suitable for Network Rail in CP5.

Other single till income

Context

6.28 We have assessed Network Rail's forecasts OSTI. For the purposes of calculating the SoFA revenue requirement, this is income from:

(a) Network Rail's property portfolio,

(b) third parties that are independent of the franchised access regime (e.g. from freight and open access passenger operators); and

(c) income that is derived from franchised operators but is not 'reset' at periodic reviews, and is independent of the track and stations access charges regime (e.g. facility charge income).

6.29 Network Rail's total OSTI for Scotland in CP4 is forecast to be £152m as per their delivery plan update 2011[45]. Table 6.2 provides the breakdown of this income by category. In 2010-11, Network Rail's actual OSTI was £21m.

[44] See paragraph 8.56 of http://www.rail-reg.gov.uk/pr13/PDF/pr13-first-consultation-incentives_141211.pdf for further details.

[45] http://www.networkrail.co.uk/aspx/12072.aspx#.

Table 6.2: Income from OSTI in CP4 (on a SoFA basis)[46]

£million (2011-12 prices)	CP4 income
Property income (includes income from managed station retail, commercial property, concessions and advertising income. It does not include qualifying expenditure, station lease income and station long term charge.	66
Property sales and developments	16
Freight operators	33
Other income	1
Investment Framework schemes (facility charges and income from Network Rail self financing income generating schemes)	36
Total income	**152**

Our assessment and results

6.30 Table 6.3 shows the range for OSTI (on a SoFA basis).

Table 6.3 Other single till income (on SoFA basis)

Scotland (£m, 2011/12 prices)	CP4	CP5		
		IIP	Low	High
Other single till income	152	150	160	200

6.31 The high end of our range for OSTI is higher than the IIP largely due to higher property income and additional freight income in CP5. In the low end of the range we have largely assumed the IIP levels of income apart from property income, which could be higher than Network Rail forecast in its IIP.

6.32 Property income is more than half of the total OSTI in the IIP and therefore it has been the main focus of our analysis. DTZ reviewed the work undertaken by Network Rail's property consultants GVA Grimley. This was relatively high-level and did not look at Scotland specifically. For the review of the SBP we will use consultants to review Network Rail's property income in Scotland. At this stage we are assuming that the underlying reasons for Great Britain ranges are applicable to Scotland as well.

6.33 It should be noted that the property income forecasts provided by Network Rail were calculated in April 2011 and were based on the economic indicators as of September 2010. Network Rail will be refreshing its income forecasts in the SBP taking into account the most recent economic indicators at that time.

[46] Source: Network Rail Delivery Plan update 2011

6.34 We are considering the option of higher track access charges for some freight traffic, notably freight serving the electricity supply industry (ESI) with coal, this is the high end of our range.

CP5 starting position – debt and RAB

6.35 The starting position for debt and RAB for CP5 is calculated in accordance with the rules set out in PR08 and in the regulatory accounting guidelines.

6.36 In order to forecast Network Rail's CP5 revenue requirement and financial position in CP5 we have assumed for the purposes of this document only that Network Rail will exit CP4 in accordance with its delivery plan update 2011. This is what Network Rail assumed in the IIP. Network Rail will publish its delivery plan update 2012 shortly. After discussions with Network Rail we are not expecting the 2012 delivery plan update to show a materially different CP4 exit rate than DP11.

6.37 Our CP5 starting position assumptions are:

(a) Debt (in nominal prices): £3,300m; and

(b) RAB (2011-12 prices): £4,780m

6.38 The key issues, drivers and uncertainties which we are working on are:

(a) Network Rail's forecast efficiency in CP4 and expenditure on renewals and enhancements in CP4 and how it affects the RAB. These issues affect the value of the RAB because our RAB roll forward policy adjusts our PR08 determination assumption for actual expenditure subject to the RAB roll forward rules, e.g. in simple terms Network Rail retains 25% of an efficient underspend as long as it has delivered the outputs required in CP4 and maintained the serviceability and sustainability of the network in the short, medium and long-term;

(b) inflation. To maintain the value of the RAB in real terms the RAB is uplifted by RPI. Therefore, to estimate the starting position of the RAB for CP5 we need to estimate the effect of inflation to the start of CP5. For the purposes of this document only we have used the same assumptions as in the IIP. These assumptions were: 3.0% for 2012-13 and 2013-14. For rolling forward the RAB for our final determination we will use actual inflation for 2012-13 and an estimate for 2013-04; and

(c) the IOPI adjustment. In PR08 we introduced a policy where we adjust the RAB for movements in input prices as represented by movements in IOPI. Therefore, the starting position of the RAB for CP5 will be adjusted by movements in IOPI. Movements in the IOPI can be volatile. For the purposes of this document we have assumed the IOPI adjustment is the same as in the IIP.

Corporation tax

6.39 The corporation tax policy we established in PR08 was to provide an ex-ante allowance for the corporation tax we assume that an efficient Network Rail will pay in CP5. In calculating the amount of corporation tax that the revenue requirement will fund in CP5 we need to take account of two issues:

(a) in accordance with our PR08 corporation tax policy our opening balance for Network Rail's losses brought forward and capital allowances at the start of CP5 are per the assumptions in our PR08 determination and not Network Rail's forecast CP4 outturn position; and

(b) in PR08 we decided that Network Rail had been overfunded for corporation tax in CP3 and so we made an adjustment to Network Rail's regulatory corporation tax position. This adjustment holds the amount of the corporation tax double count on account and it is reduced every year by the amount we think an efficient Network Rail would pay in corporation tax.

6.40 Network Rail is only forecasting to make relatively small corporation tax payments in CP5 (approximately £20m over CP5 in Great Britain), which given the corporation tax double count adjustment we do not intend to fund through the CP5 revenue requirement. As such we have made no provision for this in our ranges.

Financeability, financial sustainability and affordability

Financeability

6.41 We have a duty to act in a manner that will not render it unduly difficult for Network Rail to finance its activities. This means that besides making decisions on each of the separate building blocks that make up our determinations, we need to satisfy ourselves that the overall package (which includes protections to deal with risk and uncertainty), and the level of access charges and income we assume Network Rail will earn, will enable it to finance itself in CP5 on reasonable terms – and reflecting an appropriate level of efficiency.

6.42 We assess financeability 'in the round'. In other words, we take into account a suite of financial indicators, consistent with those used by the credit ratings agencies, and the business risks and regulatory protections provided to Network Rail in our determinations as a whole to inform our assessment.

6.43 Financeability issues are different depending on which financial scenario is being considered. We have largely taken the same approach to financeability for the PR08 approach financial scenario as in PR08, i.e. we are considering the same financial indicators.

6.44 The key issues, drivers and uncertainties are:

(a) calculating Network Rail's efficient financing costs;

(b) how do we treat Network Rail's embedded financing costs; and

(c) do we provide Network Rail with a risk buffer and if so how much is it.

6.45 When we consider financeability we tend to focus on whether Network Rail can raise debt efficiently in the control period that we are considering, i.e. are the financial indicators consistent with raising debt efficiently. Therefore, given in the adjusted WACC financial scenario Network Rail is not raising unsupported debt short-term financeability is not a major issue. However, in both scenarios long-term financial sustainability and affordability are very important issues.

Financial sustainability

6.46 Financial sustainability can mean a number of things, some of which are interconnected (e.g. the level of the revenue requirement is partly dependent on the level of debt). In particular, it includes the following key issues:

(a) is the level of debt appropriate for a company such as Network Rail; and

(b) can the debt be re-financed when appropriate and serviced efficiently.

6.47 It is very important that Network Rail's financial sustainability is maintained and that in CP5 we provide a financial framework and revenue requirement that are consistent with maintaining the flexibility to change Network Rail's financing structure in the future.

Affordability

6.48 One of the criteria that we use to assess our approach to Network Rail's cost of capital is whether the revenue requirement is affordable over time by funders. This is important given that we have a statutory duty which, in summary, means that we have to have regard to the expenditure that is to be incurred by Scottish Ministers.

6.49 The affordability of the revenue requirement depends upon the financial position of the funders. The key funders are DfT and Transport Scotland and they will provide us with their formal views by the end of July 2012 on affordability for CP5 in their SoFAs. We cannot require the SoFAs to look further ahead than the length of the next control period but we will ask DfT and Transport Scotland for a view on long-term affordability as we expect them to be considering affordability over a longer period of time than five years when developing the SoFAs.

6.50 Some stakeholders have previously raised concerns about the levels of Network Rail's debt. Network Rail's debt has increased considerably for a number of reasons:

(a) the level of actual capital expenditure exceeds the level of amortisation – which is in part due to heightened levels of renewals activity compared to the longer term (dealing with the 'backlog' following the Hatfield accident and the collapse of Railtrack) and current levels of efficiency not matching those expected over the longer term (reflected in the amortisation calculation) – as our current policy is based on a policy that customers and funders over the long term should pay for the current levels of inefficiency; and

(b) significant levels of enhancements (specified by government) in the network to improve the capacity and capability of the network.

6.51 Ultimately if Network Rail's funders want debt to be lower, they will need to increase their funding to reduce the debt (everything else being equal). This highlights the tension between improving the sustainability of Network Rail's financial position while ensuring the affordability of the revenue requirement to funders now. The increased pressure on public finances as compared to the situation during PR08 is likely to result in stronger calls from funders to ensure affordability in CP5. But we must ensure the overall sustainability of Network Rail's finances over the long-term. This is an issue we expect to discuss further with Transport Scotland (and DfT) following this advice.

7. Revenue requirement ranges the current railway

Introduction

7.1 This chapter provides our assessment of the possible ranges for Network Rail's CP5 'SoFA revenue requirement' in Scotland to assist Scottish Ministers in the development of their HLOS and SoFA. As explained in chapter 3, the SoFA revenue requirement is that which is funded by access charges (track and station) from franchised passenger operators, or, potentially, grant paid by government in lieu of track access charges.

7.2 Because there is still uncertainty around the future revenue requirement we are not providing a central projection in this document.

Assessment of the possible ranges for the CP5 revenue requirement

7.3 Tables 7.1 – 7.2 show the build up of the revenue requirement, compared to the IIP assumptions and CP4, for the current railway scenario in the IIP for each of our two scenarios. Given that we are considering two approaches for Network Rail's financing, we are setting out clearly how the ranges are calculated by showing the financing costs (i.e. allowed return) and additional amortisation separately to the other revenue requirement building blocks. Therefore, the tables show a total for the gross revenue requirement before the approaches for the cost of capital are considered and then we show the gross revenue requirement and SoFA revenue requirement in each of the two approaches.

7.4 One of the key points to note in the analysis is that the costs of support, network operations, industry costs and rates, network maintenance, traction electricity, Schedule 4 & 8, corporation tax and other single-till income are paid for in the year they are incurred whereas the cost of renewals (apart from in the adjusted WACC scenario where CP5 amortisation is set to equal expected renewals) and enhancements are spread over time. Hence, the revenue requirement is less sensitive to the costs of renewals and enhancements, including the efficiency assumptions that are made.

7.5 Annex A contains the annual CP5 values underpining the totals in Tables 7.1 and 7.2.

Table 7.1: Expenditure ranges for CP5 for the current railway

£millions (2011-12 prices)	CP4	IIP	Low	High
Support costs	370	200	180	210
Network operations		180	180	190
Network maintenance	570	410	350	400
Industry costs and rates	110	90	100	140
Traction electricity	70	120	110	140
Schedule 4 & 8 costs	50	40	30	50
Total operating expenditure	**1,160**	**1,050**	**960**	**1,120**
Renewals	1,530	1,370	1,180	1,440
Enhancements	460	400	400	400
Total capital expenditure	**1,990**	**1,770**	**1,590**	**1,840**
Total expenditure	**3,140**	**2,820**	**2,550**	**2,960**

Note: The table shows the comparative numbers for CP4. Elsewhere in this document where we show CP4 numbers they reflect either actual income and expenditure or our/Network Rail's forecast for CP4. However, in this table because we are showing how we derive the revenue requirements the CP4 comparative numbers are the assumptions that we used in the PR08 determination to calculate the revenue requirement.

Table 7.2: Revenue requirement ranges for CP5

£millions (2011-12 prices)	CP4	IIP	Low	High
Gross rev. req. before cost of capital				
Total operating expenditure	1,160	1,050	960	1,120
Amortisation	1,030	1,110	960	1,230
Gross rev. req. before cost of capital	2,190	2,160	1,920	2,350
PR08 approach				
Allowed return (full cost of capital)	1,010	1,180	980	1,200
Gross rev. req.	**3,200**	**3,330**	**2,900**	**3,550**
Less: SoFA OSTI	(180)	(150)	(210)	(160)
SoFA rev. req.	**3020**	**3,190**	**2,700**	**3,390**
Adjusted WACC approach				
Allowed return (full cost of capital)	1,010	1,180	990	1,220
Less: equity surplus	-	-	(350)	(370)
Add: additional amortisation	-	-	230	210
Gross rev. req.	**3,200**	**3,330**	**2,780**	**3,410**
Less: SoFA OSTI	(180)	(150)	(210)	(160)
SoFA rev. req.	**3,020**	**3,190**	**2,570**	**3,250**

Comparison of revenue requirement ranges

7.6 The chapters on expenditure, income and financial variables explain how we have derived the above ranges for the building blocks.

7.7 The low end of our range for expenditure (excluding enhancements) is £2,150m and the high end of our range is £2,560m. Network Rail's expenditure (excluding enhancements) included in its part of the IIP was £2,410m. Therefore, the low end of our range is £260m (11%) below Network Rail's part of the IIP and the high end of the range is £150m (6%) higher than Network Rail's part of the IIP. Our range, as shown in Table 7.1 reflects our view that we think Network Rail can achieve more efficiencies in running its business than Network Rail assumed in the IIP, but that some expenditure, e.g. traction electricity, could be higher than assumed in the IIP.

7.8 For the gross revenue requirement before the cost of capital, Table 7.2 shows that the low end of our range is £1,920m and the high end of our range is £2,350m. Network Rail's gross revenue requirement before the cost of capital included in the IIP was £2,160m.Therefore, the low end of our range is £240m (11%) below the IIP. The high end of the range is £190m (9%) higher than the IIP.

7.9 In chapter 6 we have outlined the differences between the two funding scenarios. In financial terms the main differences between the two scenarios are:

(a) the PR08 approach financial scenario provides for a surplus above efficient financing costs (and a risk buffer if necessary). This surplus is used to pay for investments through the ring-fenced fund; and

(b) in the adjusted WACC approach we have calculated amortisation in CP5 so that it is equal to our forecast of average annual renewals expenditure in CP5.

7.10 In the PR08 approach financial scenario, our range for Network Rail's SoFA revenue requirement is £2,700m - £3,390m compared to Network Rail's forecast of £3,190m. The low end of our range is £490m, or 15%, lower than Network Rail's projection, which largely reflects our view that we consider Network Rail can achieve more efficiencies in running its business than Network Rail has projected, can earn more other single till income, that amortisation could be lower and its cost of capital could be lower. The high end of our range is £200m, or 6%, higher than Network Rail forecast in the IIP, which largely reflects our view that amortisation and the cost of capital could be higher than Network Rail forecast in the IIP.

7.11 In the adjusted WACC financial scenario, the low end of our range is £2,570m and the high end of our range is £3,250m compared to Network Rail's forecast of £3,190m. In this approach the allowed return is calculated excluding any surplus equity return (this means that the allowed return in both the low and high end of the range is lower than the IIP) and amortisation is based on our forecast of annual average CP5 renewals expenditure (this means that amortisation in both the low and high end of the range is higher than the IIP). Also, in both the low and high end of the range we have used an allocation of support costs and industry costs and rates between England & Wales and Scotland based on Network Rail's DP11 instead of the IIP. This means that the revenue requirement is £54m higher than Network Rail's IIP, in both the low and high end of the range, as a result of these allocation issues.

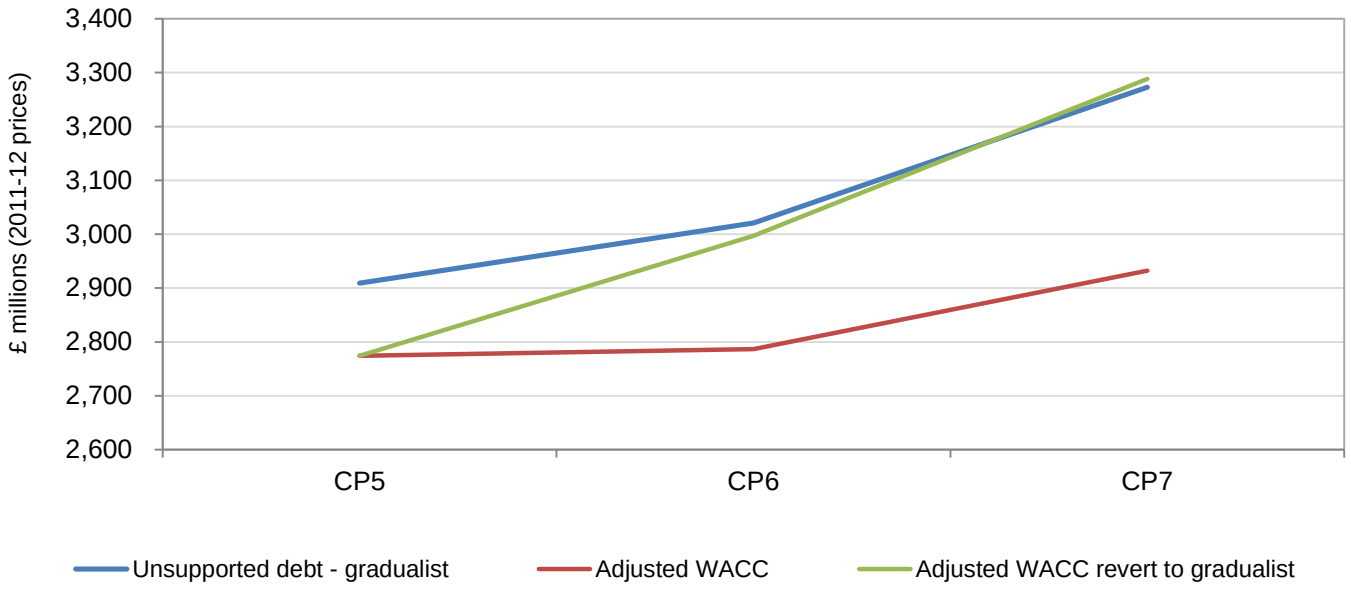
7.12 The low end of our range is £620m, or 19%, below Network Rail's forecast, which apart from the differences due to the different approach described above, largely reflects our view that we consider Network Rail can achieve more efficiencies in running its business than Network Rail has forecast, can earn more other single-till income and its efficient financing costs could be lower.

7.13 The high end of the range is £60m, or 2%, higher than Network Rail's forecast, which apart from the differences due to the different approach described, largely reflects our view that amortisation and efficient financing costs could potentially be higher than Network Rail assumed in its forecast.

7.14 As we have set out in chapter 3, there are a number of uncertainties that could affect our range for the revenue requirement, including Network Rail's performance over the remainder of CP4; the decisions Scottish Ministers take on required outputs in their HLOS (noting that these ranges do not include the revenue requirement impact of further enhancement expenditure); and the state of the financial markets.

7.15 For a high-level illustration, we have also considered the longer term impact of the two options by extending our financial modelling into CP6 and CP7. Figure 7.3 illustrates the net revenue requirement for CP5, CP6 and CP7 for each approach to funding Network Rail's activities (based on an illustrative central value in our range). In addition to the two financial approaches we have also modelled the situation where the adjusted WACC approach is adopted in CP5 and then there is a switch to the PR08 approach in CP6 and CP7, to reflect an assumption that Network Rail starts to issue unsupported debt from CP6.

Figure 7.3 Network Rail revenue requirements for the period CP5 to CP7



Financial implication of funding scenarios

7.16 It is important to understand the effects on Network Rail's financial sustainability from the funding approaches set out in the section above. Tables 7.5 and 7.6 show the impact on key financial ratios and on RAB and debt.

7.17 The key financial indicators that we have shown in Tables 7.5 and 7.6 are the adjusted interest cover ratio (which we established in PR08 as a trigger for one of the re-openers of our CP4 determination) and the debt:RAB ratio which is the basis of a cap on Network Rail's level of indebtedness that we established following PR08 and is set out in the company's network licence. These financial indicators are used by other regulators and credit rating agencies.

7.18 The key points that Tables 7.4 and 7.5 highlight are:

(a) in PR08 approach financial scenario the gearing ratios are slightly higher (i.e. worse) than we assumed in PR08 and the AICRs are at lower (i.e. worse) levels than in PR08;

(b) in the adjusted WACC approach the gearing ratios are higher (i.e. worse) than those assumed in PR08;

(c) in the adjusted WACC approach we are not focusing on the level of the AICR as it is assumed that the FIM remains. At the low end of the range the AICR is 1.0 as we have assumed no risk buffer; and

(d) the debt:RAB ratio is higher (i.e. lower) as PR08 in the adjusted WACC scenario.

Table 7.4: Financial implications of funding scenario: PR08 approach

£millions (nominal prices)	CP4	CP5		
		IIP	Low	High
Interest	470	630	590	590
FIM fee	100	140	140	230
Risk buffer	140	160	110	160
Ring-fenced fund	1,010	420	290	410
Closing debt	2,740	3,800	3,870	3,780
Closing RAB	4,730	6,160	6,260	6,110
Closing debt: RAB	60%	62%	62%	62%
Average AICR	1.78	1.63	1.53	1.55

Table 7.5: Financial implications of funding scenario: adjusted WACC approach

£millions (nominal prices)	CP4	CP5		
		IIP	Low	High
Interest	470	630	590	590
FIM fee	100	140	140	230
Risk buffer	140	160	-	160
Ring-fenced fund	1,010	420	-	-
Closing debt	2,740	3,800	4,000	3,940
Closing RAB	4,730	6,160	6,290	6,290
Closing debt: RAB	60%	62%	64%	63%
Average AICR	1.78	1.63	0.99	1.07

Comparison of SoFA revenue requirement and net revenue requirement

7.19 Table 7.6 shows a reconciliation between the SoFA revenue requirements presented in Table 7.2 and the net revenue requirement. The net revenue requirement is set out in the IIP and is the gross revenue requirement less all other single till income leaving just track access charges payable by franchised passenger train operators (some of which pay be switched to network grant).

Table 7.6: SoFA vs. net revenue requirement

£millions (2011-12 prices)	CP4	CP5		
		IIP	Low	High
PR08 approach				
SOFA revenue requirement	3,020	3,190	2,700	3,390
Additional OSTI	(100)	(150)	(150)	(140)
Net revenue requirement	2,930	3,040	2,550	3,250
Adjusted WACC approach				
SOFA revenue requirement	3,020	3,190	2,570	3,250
Additional OSTI	(100)	(150)	(150)	(140)
Net revenue requirement	2,930	3,040	2,430	3,110

Note: Additional OSTI is income from station long-term charges, qualifying expenditure (income from TOCs for managed station operating costs), station lease income and depots income.

7.20 Table 7.7 below shows the effect of £100m of additional enhancement spend (profiled evenly over CP5) on the SoFA revenue requirement, interest costs, debt, RAB, AICR and debt:RAB.

7.21 In the PR08 approach the enhancement will be added to the RAB. The allowed return and the SoFA revenue requirement will then be higher as the cost of capital will be applied to a higher RAB (after the effect of the ring-fenced fund). As the enhancement will be funded by debt, debt and financing costs will also be higher.

7.22 In the adjusted WACC approach the enhancement will be added to the RAB. The enhancement will be funded by debt, so debt and fiancing costs will be higher. As the adjusted WACC approach funds efficient financing costs, the SoFA revenue requirement will also be higher.

Table 7.7: Effect on financial metrics of additional enhancements

£millions (2011-12 prices)	CP5					
	SOFA rev. req	Interest costs	Closing debt	Closing RAB	AICR	Debt:RAB
PR08 approach						
Low	20	20	190	200	-0.01	0.8%
High	20	20	190	200	0.00	0.8%
Adjusted WACC approach						
Low	20	20	190	200	0.01	0.7%
High	20	20	190	200	0.01	0.7%

8. Structure of outputs

Introduction

8.1 This chapter sets Scottish Ministers' HLOS in the wider context of the periodic review. The purpose is to explain:

(a) How the HLOS outputs can be framed at a genuinely high level, with further detail added later in the process by the industry with ORR providing regulatory supervision, or directly by ORR. Transport Scotland can then meet its aim of avoiding getting involved in too much detailed specification;

(b) How the outputs established by the periodic review process will be buttressed by enablers and monitoring KPIs designed to unlock future efficiencies and ensure longer term benefits are not compromised in the short term. We also intend to develop a better link between outputs and outcomes; and

(c) What further work we plan to do on developing outputs that are not likely to be specified in the HLOS, and our plans for a consultation on outputs in August 2012.

8.2 The actual content of the HLOS, including the levels at which any outputs are set, is a matter for Ministers and is not covered here.

8.3 The chapter begins with a review of the outputs, enablers and monitoring KPIs which were established for CP4 and then describes how we plan to establish a 'line of sight' from outputs to outcomes in CP5. It explains the different stages in the periodic review process when outputs can be set, with examples of how the process worked in PR08. It then sets out our planned work on outputs for PR13.

8.4 As for PR08, our PR13 determination will be a balanced package. In particular, it must balance economic and safety factors – the outputs must be capable of being delivered safely - and we will consider this throughout the review. At this stage of the process the issue what Scottish Ministers need to take into account for the HLOS and SoFA. This chapter therefore also includes specific advice on safety issues, including whether further work at level crossings meets the 'reasonably practical' test and an assessment of safety targets.

CP4

8.5 In the PR08 final determination we established a set of outputs, including the HLOS outputs, which Network Rail is required to deliver during CP4. These are obligations on the company and a failure to deliver could be a potential licence breach. We established monitoring KPIs for asset condition which are not obligations, but which help us understand whether problems might be building up for the future, so that we can take corrective action in time. During the control period we established two enablers – an asset management trajectory and a safety excellence trajectory. An enabler is something which unlocks output increases or cost reductions in the future.

8.6 In their last HLOS (for PR08) which was issued in 2007, Scottish Ministers set out requirements in terms of:

(a) an output specification for the existing railway infrastructure (maintaining capability and capacity; maintaining station condition; improving PPM to 92% by the end of CP4; and some funding for small scale schemes);

(b) named infrastructure enhancement schemes (e.g. Airdrie to Bathgate);

(c) notice of further intended enhancements which at the time of the HLOS were not funded (e.g. the Edinburgh to Glasgow improvement programme).

8.7 In respect of safety, the Secretary of State's HLOS included a safety metric covering risks to passengers and workers, which applied to Great Britain as a whole.

8.8 During the periodic review process we broadened these obligations. The full set of outputs that Network Rail is required to deliver in CP4 is set out in annex C to our first consultation on PR13[47]. Table 8.1 provides a brief summary.

Table 8.1: Summary of Network Rail's CP4 output requirements

Output	Description
Safety	Network Rail must meet its health and safety obligations. In addition the Secretary of State specified industry wide risk reduction targets
Train service performance	A range of PPM and CaSL (cancellations and significant lateness) and delay minutes outputs
Station condition	Maintain average condition of stations across network
Depot condition	Maintain average condition of depots across network
Network availability	Requirement to reduce disruption to passengers from planned engineering works (and no increase in disruption to freight)
Network capability	Maintain network capability (e.g.on gauge)
Environment	No formal output but Network Rail's delivery plan sets out plans to improve in areas such as recycling, CO2 emissions from property and condition of Network Rail owned Sites of Special Scientific Interest (SSSIs)

Outcomes

8.9 In our consultation on incentives (December 2011) we said that our objective for PR13 included a stronger focus on outcomes. We said that outcomes 'are high level objectives that the industry's activities are intended to deliver and represent what customers and society actually value'**.** The acid test for an outcome is that it should be something that people recognise as valuable. We proposed five measures**:**

(a) passenger satisfaction;

(b) freight customer satisfaction;

[47] Periodic Review 2013: frst consultation – annexes, available at http://www.rail-reg.gov.uk/pr13/PDF/PR13-first-consultation-annexes.pdf.

(c) economic growth;

(d) connectivity; and

(e) environmental sustainability.

8.10 We want to ensure that we have a better understanding of the link between the outputs Network Rail delivers and these outcomes, and we have asked Network Rail (in our SBP requirements letter) to develop this in its SBP. Delivery of specific levels of outcomes will not be an obligation on the company, but developing the link between outputs and outcomes will facilitate a better understanding of the impact of PR13 and the changing outcomes could be monitored during CP5.

When decisions can be made

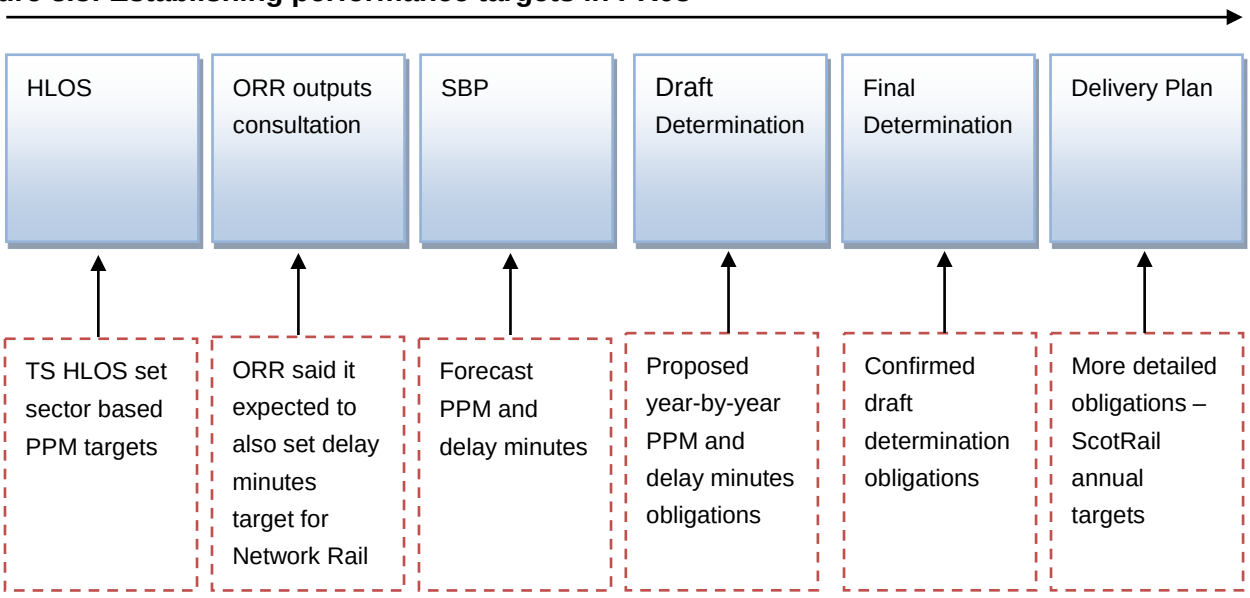
8.11 The periodic review process has a number of points where outputs can be defined, as shown in Table 8.2. This staged process allows Government to specify its requirements at a high level in the HLOS and these outputs can be unpacked (e.g. disaggregated), or further outputs specified, later in the process.

Table 8.2: Stages in the periodic review process

Stage	Responsible	Date
HLOS	Scottish Ministers	July 2012
Consultation on Network Rail's outputs	ORR	August 2012 (consultation closes on 28 September)
SBP	Network Rail	January 2013
PR13 draft determination	ORR	June 2013
PR13 final determination	ORR	October 2013
Delivery plan	Network Rail	March 2014

8.12 In PR08, Scottish Ministers specified an end-CP4 PPM requirement. Further performance obligations were added during the process in terms of new outputs (reducing delay minutes) or more disaggregation of HLOS requirements (e.g. year by year PPM requirements). This process in illustrated in Figure 8.3.

Figure 8.3: Establishing performance targets in PR08



8.13 This process for setting outputs worked well in PR08 and we believe it should be used for PR13.

Planned work

8.14 We have discussed the possible contents of the HLOS with Transport Scotland and we are currently working with Transport Scotland and Network Rail to clarify certain issues, such as the split between CP4 and CP5 costs for committed enhancement projects. We have also reviewed the experience of working with the funds that were specified in the 2007 HLOSs in both England & Wales and Scotland so that lessons can be learnt in terms of specification and governance (see paragraph 5.75-5.77).

8.15 Transport Scotland has indicated that their HLOS is likely to contain requirements on performance, enhancment projects and may make allowances for certain funds; we are in discussion on this.

8.16 We are reviewing whether the further outputs (beyond the HLOS requirements) specified in PR08 should also be specified again and if so whether the measure should be changed in any way. We are also reviewing whether any new outputs should be added or existing outputs dropped and the cost implications of any changes (which must be affordable given the SoFA). In doing this we are drawing on the helpful material in the Initial Industry Plan.

8.17 In our August 2012 consultation we will set out what the options are – given the content of the HLOS – for the overall framework of outputs, enablers and monitoring KPIs for PR13.

Health and safety

Introduction

8.18 The Health and Safety at Work etc. Act 1974 and the EU Railway Safety Directive[48] prescribe what the requirements are for health and safety – to maintain, and where reasonably practicable, improve safety.

[48] Directive 2004/49/EC, amended by Directive 2008/110/EC.

Network Rail therefore has a general duty to control the risks arising from its activities so far as is reasonably practicable[49] (SFAIRP).

8.19 Network Rail's responsibility is to manage its business in a way that enables it to meet its legal obligations (including health and safety obligations), alongside the delivery of the reasonable requirements of its customers and funders. ORR will take account of Network Rail's health and safety obligations, in terms of risks created from its operation and any shared system risks that arise from this, and ensure that our determination for CP5 sets the funding required to ensure that the outputs are delivered in a safe, efficient and sustainable way.

Specific safety outputs

Reduction in level crossing risk

8.20 Network Rail has committed to reducing level crossing risk by 25% by the end of CP4 - from a baseline of 11.8 FWI/yr[50]. The majority of this reduction is expected to be gained by fitting barriers to 57 Automatic Open Crossings, Locally monitered (AOCLs) and closing nine of them. This would reduce the number of AOCLs on the network from 114 to 48 and, Network Rail predicts, reduce level crossing risk to 8.85 FWI/yr by April 2014.

8.21 The IIP for the preferred railway proposes a level crossing fund to the value of £304m for England and Wales and £42m for Scotland to reduce level crossing risk by 50% by the end of CP5. Our initial review suggests that around £65m of this in England and Wales and £13m in Scotland (see Table 8.4 below) may need to be spent to meet its legal health and safety obligations and that this would, from the information Network Rail has provided, reduce level crossing risk by 3.02 FWI/yr. This would reduce level crossing risk to 5.83 FWI/yr giving a 34% reduction in risk from the current baseline (11.8 FWI/yr). We will review this further with Network Rail once its review of risk assessments and model is complete.

Table 8.4: Breakdown of schemes which may be SFAIRP

Project	England & Wales (£m)	Scotland (£m)	Total (£m)	Cost:benefit ratio (CBR)	Reduction in FWI/yr
Miniature Warning Lights at User Works Crossings in Long Sections	34	6	40	1.45	0.60
User Works Crossings closure programme	21	4	25	1.41	0.42
Campaign / Education	11	4	15	0.71	2.00
Total	**66**	**13**	**80**	**N/A**	**3.02**

[49] In health and safety law, reasonably practicable means that risk is balanced against the costs (in time or money) to avert that risk; and the risk must be averted unless there is a gross disproportion between the risk and the costs.

[50] This means Fatalities and weighted injuries per year. One FWI is equal to: one fatality; 10 major injuries; or 200 RIDDOR-reportable minor injuries; or 200 Class 1 shock/trauma events; or 1,000 non-RIDDOR-reportable minor injuries; or 1,000 Class 2 shock trauma events. **RIDDOR** means the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995. A **Class 1 shock/trauma** covers injuries relating to witnessing fatality incidents and train accidents (collisions, derailments and fires). A **Class 2 shock/trauma** covers injuries relating to all other causes of shock/trauma such as verbal assaults, witnessing physical assaults, witnessing non-fatal incidents and near misses).

8.22 The remaining schemes, totalling £238m in England & Wales and £29m in Scotland, seem to go beyond the requirement to manage risk so far as is reasonably practicable. They should therefore be considered as options for funding, though we question the value for money for these. In saying this we note in respect of:

(a) the £47m proposal to undertake selected enforcement, education and behaviour interventions, that this cost would be offset elsewhere through the receipt of penalties; and

(b) the £17m proposal to fund an AOCL upgrade in Scotland, that Network Rail has already committed, through a national programme, to upgrade 18 of the 23 AOCLs in Scotland with barriers by December 2013. Network Rail Scotland is also looking to fit barriers to the remaining five AOCLs, where the associated risk is low in any case due to low line speeds, in the same time period. This suggests that the £17m is not required.

Safety Targets

8.23 The HLOS safety specification for CP4 required that by the end of CP4 there should be:

(a) a reduction in passenger safety risk measured as fatalities and weighed injuries, normalised per million passenger kilometres, of 3%; and

(b) a reduction in workforce safety risk measured as fatalities and weighted injuries, normalised per million employee hours, of 3%.

8.24 Measurement of the delivery of the specification is by reference to the RSSB's Safety Risk Model (SRM) which was run at the beginning of CP4 and at an intermediate point and again at the end of CP4

8.25 The EU through establishment of a European Safety Directive required Common Safety Targets (CST)[51] to be set from April 2009. ERA then set the first CSTs in the form of National Reference Values (NRVs) for each member state covering:

(a) Passengers – measured as fatalities and weighted serious injuries (FWSI)/bn train kms (NRV1.1) and FWSI/bn pass kms (NRV1.2)

(b) Employees (NRV2); level crossing users (NRV 3); others (NRV 4); unauthorised persons (NRV 5); and whole society (NRV 6) – measured as FWSI/bn train kms for each category.

8.26 The requirement being for each member state to at least maintain the safety levels defined by the NRVs in future years.

8.27 ORR collates industry performance and submits this to ERA by the end of September each year (for the preceding calendar year). ERA then, using predefined methodology, assesses progress against the NRVs. Should performance fail to meet the NRVs, the responsibility for initiating corrective actions rests with the member state (DfT and ORR) through cascade to the industry.

8.28 We recommend that the HLOS reaffirms a commitment to deliver EU targets rather than set separate domestic targets. We are considering setting Network Rail further specific safety targets for CP5 to drive further safety improvements which will support delivery of the CSTs. This will be covered in our August 2012 consultation on outputs.

[51] See Article 6 of Directive 2004/49/EC – EC Decision on Common Safety Method for Assessment of Achievement of Safety Targets, dated 5 June 2009, at: http://www.era.europa.eu/Document-Register/Pages/decision-common-safety-method-for-assessment-achievement-safety-targets.aspx.

Annex A: Expenditure and revenue requirement ranges – detail

Expenditure ranges: annual data

Table A.1 shows the annual expenditure projections for CP5 in the initial industry plan, and our low and high expenditure ranges.

Table A.1: Annual expenditure ranges

£millions (2011-12 prices)	Scenario	2014-15	2015-16	2016-17	2017-18	2018-19	CP5
Support costs	IIP	40	40	40	40	40	200
	High	40	40	40	40	40	210
	Low	40	40	40	30	30	180
Network operations	IIP	40	40	40	40	30	180
	High	40	40	40	40	40	190
	Low	40	40	40	30	30	180
Network maintenance	IIP	90	80	80	80	80	410
	High	90	80	80	80	70	400
	Low	80	70	70	70	60	350
Industry costs and rates	IIP	20	20	20	20	20	90
	High	30	30	30	30	30	140
	Low	20	20	20	20	20	100
Traction electricity	IIP	20	20	20	30	30	120
	High	20	30	30	30	30	140
	Low	20	20	20	20	20	110
Schedule 4 & 8 costs	IIP	10	10	10	10	10	40
	High	10	10	10	10	10	50
	Low	10	10	10	10	10	30
Total operating expenditure	**IIP**	**210**	**210**	**210**	**210**	**200**	**1,050**
	High	**230**	**230**	**220**	**220**	**220**	**1,120**
	Low	**200**	**200**	**190**	**190**	**180**	**960**
Renewals	IIP	300	300	280	260	220	1,370
	High	310	320	290	270	230	1,440
	Low	270	270	240	220	180	1,180
Enhancements	IIP	140	240	20	-	-	400
	High	140	240	20	-	-	400
	Low	140	240	20	-	-	400
Total capital expenditure	**IIP**	**450**	**540**	**300**	**260**	**220**	**1,770**
	High	**460**	**560**	**320**	**270**	**230**	**1,840**
	Low	**420**	**510**	**260**	**220**	**180**	**1,590**

£millions (2011-12 prices)	Scenario	2014-15	2015-16	2016-17	2017-18	2018-19	CP5
Total expenditure	**IIP**	**660**	**760**	**510**	**470**	**420**	**2,820**
	High	**690**	**780**	**540**	**500**	**450**	**2,960**
	Low	**620**	**710**	**460**	**410**	**360**	**2,550**

Revenue requirements: annual data

The following tables show the annual breakdown of the allowed return and revenue requirements for each of the financial scenarios.

Table A.2: PR08 approach

£millions (2011-12 prices)	Scenario	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total
Operating expenditure	IIP	210	210	210	210	200	1,050
	High	230	230	220	220	220	1,120
	Low	200	200	190	190	180	960
Allowed Return	IIP	230	230	240	240	240	1,180
	High	230	240	250	240	240	1,200
	Low	190	200	200	200	200	990
Amortisation	IIP	220	220	220	220	220	1,110
	High	250	250	250	250	250	1,230
	Low	190	190	190	190	190	960
Gross revenue requirement	IIP	**660**	**670**	**670**	**670**	**660**	**3,330**
	High	**700**	**710**	**720**	**710**	**710**	**3,550**
	Low	**580**	**590**	**580**	**580**	**570**	**2,900**
Other single till income	IIP	(60)	(60)	(60)	(60)	(60)	(300)
	High	(60)	(60)	(60)	(60)	(60)	(300)
	Low	(60)	(70)	(70)	(80)	(80)	(360)
Net revenue requirement	**IIP**	**610**	**610**	**610**	**610**	**600**	**3,040**
	High	**650**	**650**	**660**	**650**	**640**	**3,250**
	Low	**520**	**520**	**510**	**500**	**490**	**2,550**
SOFA revenue requirement	**IIP**	**630**	**640**	**640**	**640**	**630**	**3,190**
	High	**680**	**680**	**680**	**680**	**670**	**3,400**
	Low	**550**	**550**	**540**	**530**	**520**	**2,700**

Table A.3: Adjusted WACC approach

£millions (2011-12 prices)	Scenario	2014-15	2015-16	2016-17	2017-18	2018-19	CP5 Total
Operating expenditure	IIP	210	210	210	210	200	1,050
	High	230	230	220	220	220	1,120
	Low	200	200	190	190	180	960
Allowed Return	IIP	230	230	240	240	240	1,180
	High	160	170	170	170	170	850
	Low	120	130	130	130	130	640
Amortisation	IIP	220	220	220	220	220	1,110
	High	290	290	290	290	290	1,440
	Low	240	240	240	240	240	1,180
Gross revenue requirement	IIP	**660**	**670**	**670**	**670**	**660**	**3,330**
	High	**680**	**680**	**690**	**680**	**680**	**3,410**
	Low	**560**	**560**	**560**	**550**	**540**	**2,780**
Other single till income	IIP	(60)	(60)	(60)	(60)	(60)	(300)
	High	(60)	(60)	(60)	(60)	(60)	(300)
	Low	(60)	(70)	(70)	(80)	(80)	(360)
Net revenue requirement	**IIP**	**610**	**610**	**610**	**610**	**600**	**3,040**
	High	**620**	**630**	**630**	**620**	**610**	**3,110**
	Low	**500**	**500**	**490**	**480**	**460**	**2,430**
SOFA revenue requirement	**IIP**	**630**	**640**	**640**	**640**	**630**	**3,190**
	High	**650**	**650**	**650**	**650**	**640**	**3,250**
	Low	**530**	**530**	**520**	**510**	**490**	**2,570**

Annex B: Great Britain-level analysis

Introduction

This annex sets out, for information, our advice to ministers data for England & Wales and Scotland at an aggregated Great Britain level.

Table B.1: Great Britain expenditure efficiency

Cumulative CP5 efficiency savings	E&W		Scotland		GB	
	Low	High	Low	High	Low	High
Support	26%	9%	26%	9%	26%	9%
Operations	21%	11%	8%	3%	20%	10%
Maintenance	22%	15%	21%	16%	22%	15%
Renewals	31%	19%	33%	16%	31%	18%

Table B.2: Great Britain current railway expenditure

£millions (2011-12 prices)	CP4	IIP	Low	High
Support costs	4,000	2,100	1,800	2,100
Network operations		1,800	1,700	1,900
Network maintenance	5,900	4,500	4,000	4,500
Industry costs and rates	1,000	1,200	1,000	1,400
Traction electricity	1,100	2,200	1,900	2,400
Schedule 4 & 8 costs	800	800	600	1,000
Total operating expenditure	**12,900**	**12,700**	**11,200**	**13,200**
Renewals	12,800	11,700	10,200	11,900
Enhancements	9,000	5,000	5,000	5,000
Total capital expenditure	**21,800**	**16,800**	**15,300**	**16,900**
Total expenditure	**34,700**	**29,400**	**26,400**	**30,100**

Table B.3: Great Britain revenue requirement

£millions (2011-12 prices)	CP4	IIP	Low	High
Gross rev. req. before cost of capital				
Total operating expenditure	**12,900**	**12,700**	**11,200**	**13,200**
Amortisation	8,600	9,300	8,200	10,000
Gross rev. req. before cost of capital	**21,500**	**21,900**	**19,400**	**23,100**
PR08 approach				
Allowed return (full cost of capital)	10,200	12,100	10,100	12,300
Gross rev. req.	31,700	34,000	29,500	35,500
Less: SOFA OSTI	(2,700)	(2,800)	(3,500)	(2,900)
SoFA rev. req.	**29,000**	**31,100**	**25,900**	**32,500**
Adjusted WACC approach				
Allowed return (full cost of capital)	10,200	12,100	10,100	12,500
Less: equity surplus	-	-	(3,600)	(3,800)
Add: additional amortisation	-	-	2,000	1,900
Gross rev. req.	**31,700**	**34,000**	**27,900**	**33,800**
Less: SOFA OSTI	(2,700)	(2,800)	(3,500)	(2,900)
SoFA rev. req.	**29,000**	**31,100**	**24,400**	**30,800**

Table B.4: Financial implications of funding scenario: PR08 approach

£millions (nominal prices)	CP4	CP5		
		IIP	Low	High
Interest	5,000	6,500	6,100	6,300
FIM fee	1,000	1,500	1,400	2,300
Risk buffer	1,200	1,400	1,000	1,400
Ring-fenced fund	3,600	4,600	3,100	4,200
Closing debt	31,500	39,000	40,300	38,700
Closing RAB	50,300	64,000	65,000	63,700
Average debt: RAB	63%	61%	62%	61%
Average AICR	1.69	1.76	1.55	1.64

Table B.5: Financial implications of funding scenario: Adjusted WACC approach

£millions (nominal prices)	CP4	CP5		
		IIP	Low	High
Interest	5,000	6,500	6,100	6,300
FIM fee	1,000	1,500	1,500	2,400
Risk buffer	1,200	1,400	-	1,400
Ring-fenced fund	3,600	4,600	-	-
Closing debt	31,500	39,000	42,200	40,800
Closing RAB	50,300	64,000	65,800	65,800
Average debt: RAB	63%	61%	64%	62%
Average AICR	1.69	1.76	1.00	1.16