



OFFICE OF RAIL REGULATION

PR13

2013 PERIODIC REVIEW

Periodic review 2013

Establishing Network Rail's efficient expenditure

July 2011

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1. Introduction

Purpose of this document

- 1.1 The 2013 periodic review (PR13) is the process through which decisions are made for control period 5 (CP5) - which starts on 1 April 2014 - on what outputs Network Rail should deliver, the levels of access charges payable by train operators and other sources of funding the company receives.¹
- 1.2 On 25 May 2011 we published our first consultation document on PR13. The document explains the context, process and timetable; sets out our proposed objective for PR13 and consults on a range of key issues relating to the approach we will take to determining Network Rail's outputs and funding for CP5.² We said in the first consultation that we would publish a further document on how we establish the level of efficient expenditure, which is a central part of the periodic review process.
- 1.3 Network Rail currently spends around £6bn a year on operating, maintaining, renewing and enhancing the network, and it is essential for its customers, passengers and taxpayers that the company is provided with the right level of funding in order to meet its obligations.
- 1.4 The purpose of this document is to:
 - (a) explain our approach to establishing the level of efficient expenditure for CP5, including the methods we intend to use, the range of studies we intend to undertake and the work Network Rail will do; and
 - (b) seek views on our proposed approach.

¹ We completed our last periodic review in October 2008: the 2008 periodic review (PR08), which established Network Rail's outputs and funding for the period from 1 April 2009 to 31 March 2014, known as control period 4 (CP4). Our determination for CP4 is available at <http://www.rail-reg.gov.uk/upload/pdf/383.pdf>.

² Our PR13 web page is at <http://www.rail-reg.gov.uk/server/show/nav.2446>.

- 1.5 It covers the main categories of expenditure incurred by Network Rail in managing the network:
- (a) support and operations;
 - (b) maintenance and renewals; and
 - (c) enhancements.

Principles

- 1.6 In a periodic review we make our decisions on expenditure and efficiency as part of a balanced package, which needs to be considered and judged as a whole. In taking decisions on outputs and the associated levels of access charges/funding we consider the level of efficiency the company can achieve, the financial and risk framework (including the various mechanisms to deal with unforeseen cost or revenue shocks), the contractual and financial incentives and the structure of charges. We also consider the monitoring and enforcement arrangements.
- 1.7 Critically, we need to ensure that Network Rail is able to meet its health and safety obligations. The overall package must challenge and incentivise Network Rail but allow the company to manage its business in a way that meets its legal obligations and, more broadly, meets public expectations and maintains public confidence.
- 1.8 In the 2008 periodic review (PR08) we assumed that Network Rail's expenditure over control period 4 (CP4), on operating, maintaining, renewing and enhancing the railway network would be £32.2bn,³ £2.9bn less than the company proposed. Most notably, this included an overall improvement in controllable⁴ operating, maintenance and renewal cost efficiency of 21% over the period.

³ All monetary values are in 2010-11 prices unless otherwise stated.

⁴ In PR08 we referred to 'controllable' and 'non-controllable' operating costs. In practice many 'non-controllable' costs are at least partly within Network Rail's control.

- 1.9 We monitor Network Rail's progress and require the company to explain and justify material differences from our assumptions, for example in terms of work volumes or progress on efficiency improvements.
- 1.10 But when we make our decisions on the level of efficient expenditure in a periodic review we do not (with a few exceptions) determine the specific minimum or maximum level of expenditure by Network Rail in any area of its activity. Although we assume a level of efficiency improvement we do not specify a minimum or maximum – instead we incentivise outperformance. Nor do we specify what working methods or technologies the company should adopt. These are all decisions for the company's management in the context of the regulatory framework and its wider legal obligations.
- 1.11 Assessing the scope for efficiency improvement is important for Network Rail itself, so that it can identify the working methods and technologies that allow it to deliver, or outperform, our periodic review determination, and also to plan for the longer term.
- 1.12 Some ongoing changes may have an impact on how we and Network Rail carry out our work in this review. Network Rail is devolving greater responsibility for the management of the network to its operating routes, and the company is also considering letting one or more concessions for the management of infrastructure at a route level - with one of these potentially starting from the beginning of CP5. The process of devolution will change the boundaries in terms of where work is carried out by the 'centre' or by the route, and the concessions arrangement would mean that part of the costs of running the network are set through a contractual arrangement between the company and a third party. We will need to review the implications once these areas are developed further.

Progressive assurance

- 1.13 Network Rail's main periodic review submission to us will be its strategic business plan (SBP) in January 2013, as this document will set out its final proposals before we make our determination. We need to be confident that the SBP will be robust in terms of its justification of how much money Network Rail needs to spend to deliver outputs, and hence we will monitor progress towards it - a process we have called 'progressive assurance'. We will

intervene if necessary if it appears that Network Rail will not provide a well justified SBP.

Structure of this document

- 1.14 The remainder of this document is structured as follows:
- (a) chapter 2 provides further background;
 - (b) chapter 3 describes our overall approach to establishing the level of efficient expenditure in PR13; and
 - (c) chapters 4 to 6 describe our approach in more detail for each area of expenditure: support and operations (chapter 4), maintenance and renewals (chapter 5), and enhancements (chapter 6).

Issues for consultation and how to respond

- 1.15 We welcome responses on any aspect of the approach described in this document. In particular we are interested in any further work you think we should carry out, studies you intend to carry out, and specific examples of how efficiency could be improved. The views of train operators and other stakeholders in PR08 were very helpful to us, for example, the detailed studies on the scope for Network Rail to improve its efficiency commissioned by EWS (now DB Schenker).
- 1.16 We intend to hold a workshop to discuss this document in September – details will be provided on our website and by our email update service.
- 1.17 Please send your responses in electronic (or if not possible, in hard-copy format) by 14 October 2011 to:
- Gian Carlo Scarsi
Head of Regulatory Economics
Office of Rail Regulation
1, Kemble Street
London WC2B 4AN
Email: GianCarlo.Scarsi@orr.gsi.gov.uk
Tel: 020 7282 2078
- 1.18 Please note, when sending documents to us in electronic format that will be published on our website, we would prefer that you email us your correspondence in Microsoft Word format. This is so that we are able

- (a) create it from the electronic Microsoft Word file (preferably using Adobe Acrobat), as opposed to an image scan; and
- (b) ensure that the PDF security method is set to no security in the document properties.

1.19 If you send a written response, you should indicate clearly if you wish all or part of your response to remain confidential to ORR. Otherwise, we would expect to make it available on our website and potentially to quote from it. Where your response is made in confidence please can you provide a statement summarising it, excluding the confidential information, that can be treated as a non-confidential response. We may also publish the names of respondents in future documents or on our website, unless you indicate that you wish your name to be withheld.

2. Background

Introduction

- 2.1 Network Rail took over Railtrack (in administration) in 2002. It inherited a situation where costs were out of control: following the Hatfield accident, support and operations, maintenance and renewals (OM&R) cost increased from a pre-Hatfield level of £3.9bn per annum to a peak of £7.2bn in 2003-04. This was principally due to the need to address the significant backlog in renewals activity, but efficiency (in terms of unit costs) worsened dramatically over the period whilst Railtrack was in administration and the focus was on addressing the backlog urgently, rather than on efficiency.
- 2.2 In the 2003 access charges review we concluded that, in general, activity volumes should rise significantly over the control period 3 (CP3), running from 1 April 2004 to 31 March 2009, largely due to under-delivery of renewals volumes in the preceding years. The review assumed that Network Rail could achieve a 31% efficiency improvement over CP3.
- 2.3 Network Rail achieved a 27% efficiency improvement in OM&R during CP3. In terms of improvements in support and operations costs, and in maintenance, the company performed well. But on renewals, the company significantly underperformed our assumptions. This was due in particular to track renewals, where Network Rail had been struggling to implement necessary changes in its working methods and organisation.

Determining Network Rail's efficient expenditure for CP4

- 2.4 In PR08 we assessed activity volumes, costs and the scope for efficiency improvement across Network Rail's expenditure.⁵ We undertook extensive analysis of Network Rail's submissions to us, made in its initial strategic business plan (ISBP) in 2006, its strategic business plan (SBP) in 2007 and its SBP update in 2008. We reviewed and challenged Network Rail's submissions. As well as this we undertook our own analysis and

⁵ The work we did to assess the scope for efficiency improvements is set out in detail in chapters 7, 8 and 9 of our PR08 determination.

commissioned a range of consultancy work, and we also considered submissions from third parties.

- 2.5 For support and operations costs, we looked at the long run trends in 'real unit operating expenditure' across a range of regulated network companies comparable to Network Rail. We also benchmarked specific types of costs, e.g. employment costs, against other companies. The work showed that Network Rail was 35% behind comparators in terms of efficiency.
- 2.6 For maintenance and renewal expenditure we reviewed Network Rail's asset policies and its planned workbanks for CP4 (including its infrastructure cost model). We conducted statistical (econometric) analysis using the UIC's (International Union of Railways) 'Lasting Infrastructure Cost Benchmarking' (LICB) dataset to compare Network Rail to a sample of European rail infrastructure managers with data for 11 years (1996-2006 inclusive).
- 2.7 This UIC/LICB dataset showed an efficiency gap of 35% between Network Rail and its peers and we did further work to understand the gap in more detail. This included working with overseas rail infrastructure managers to understand their asset management practices and reviewing working methods and technologies elsewhere in Europe.
- 2.8 From our review of Network Rail's maintenance and renewals policy and forecasting models we concluded that its planned volumes were largely justified, the main exception being for civil structures renewals. But Network Rail's efficiency plans significantly underestimated the scope for efficiency improvement in CP4.
- 2.9 However, we needed to decide whether Network Rail could close all the OM&R efficiency gap in CP4. We recognised that Network Rail had much to do in CP4 as part of the overall package (including improvements in outputs and a significant amount of enhancement work). We decided that Network Rail should be able to close two-thirds of the efficiency gap assessed at the end of CP3 by the end of CP4 - a 21% improvement.
- 2.10 OM&R expenditure in 2003-04 (the start of CP3) was over £7.0bn and fell to £6.0bn by 2008-09 (the end of CP3). It is projected to reach around £4.5bn by 2013-14 (the end of CP4). By 2013-14 we expect OM&R efficiency to have improved by more than 40% compared to 2003-04.

- 2.11 For CP4 we allow Network Rail to claim a reduction in renewals volumes as an efficiency (i.e. a scope efficiency) as long as it delivers its required outputs and there is not an adverse effect on the serviceability and sustainability of the network over time. This was a change from CP3, where Network Rail was only allowed to claim reductions in unit costs as a renewals efficiency.
- 2.12 For enhancement work to the network, we undertook a detailed assessment of the company's proposals and of the £1.4bn reduction in Network Rail's proposed expenditure of £9.7bn that we made, around £850m was for efficiency savings. Although we applied overall percentage efficiency improvements to certain categories of enhancement spend, we did not apply a single 'headline' figure to enhancements as a whole as we did with OM&R.
- 2.13 Table 2.1 summarises our judgements on the scope for efficiency improvement in our PR08 determination.

Table 2.1: CP4 efficiency assumptions for Network Rail by financial year

	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Controllable opex	2.8%	2.8%	4.0%	4.0%	4.0%	16.4%
Maintenance	3.2%	3.2%	4.0%	4.5%	4.5%	18.0%
Renewals	5.0%	5.0%	5.5%	5.5%	5.5%	23.8%
Total						21.0%

Network Rail's progress in CP4

- 2.14 We monitor Network Rail's progress on making efficiency improvements and report on this in our annual efficiency and finance assessment, to be published next in September 2011.

Independent evaluation of PR08

- 2.15 Following PR08 our board commissioned an independent review of the PR08 process.⁶ Although the overall findings were very positive in terms of how we conducted the review, in the area of determining efficient expenditure the evaluation recommended that we should - together with Network Rail - continue to develop our understanding of international benchmarking as a

⁶ See <http://www.rail-reg.gov.uk/upload/pdf/PR08evaluation.pdf>

priority. As chapters 4 to 6 explain, we have been doing this and we have further work planned.

Infrastructure UK study of wider infrastructure expenditure

- 2.16 In December 2010, Infrastructure UK published a report⁷ on the cost of infrastructure in the UK, including construction and transport. This report was considered in a plan published by government in early 2011 on infrastructure development planning in the UK, covering areas such as transport and energy.
- 2.17 Project specific analysis was undertaken for high speed rail, rail stations, roads, and tunnelling. For instance, when compared with the four most directly comparable projects, the Channel Tunnel Rail Link (CTRL) 1 (now HS1) construction cost was at least 23% higher. Comparisons of major rail station development costs indicated that the UK is 50% more expensive than Spain – although UK stations serve a significantly higher peak passenger demand.
- 2.18 Civil engineering costs for tunnelling were comparable to continental European costs. But the total costs for infrastructure projects that involve significant amounts of tunnelling are more expensive than elsewhere in Europe – suggesting that the higher costs are more likely to be a result of pre-construction and other indirect costs, including project management.
- 2.19 Comparing labour, plant and material input costs with northern European countries indicates the UK is generally comparable, and that input prices in isolation are not a significant driver of higher infrastructure costs.
- 2.20 Drawing these findings together suggests project management, working practices, quality of engineering solutions, relative skill levels, and approaches to safety may drive some of the differences. We will use the findings of the Infrastructure UK work to inform PR13.

⁷ See www.hm-treasury.gov.uk/d/cost_review_main211210.pdf

National Audit Office's study

- 2.21 In April 2011, the National Audit Office (NAO) published a report on our approach to assessing efficiency for Network Rail.⁸ The NAO recognised many positive aspects of our work, including our innovative international benchmarking of Network Rail.
- 2.22 The NAO also said that while the unit cost information available to us has improved, weaknesses in quality and coverage remain. We had recognised this and were already pressing Network Rail to improve the position further. We have set Network Rail targets which are described in chapter 5.
- 2.23 The NAO also noted that the reasons for the efficiency gap relative to other rail infrastructure operators have not been fully explained, which we had already acknowledged. Our planned work to understand the gap further is described in chapters 4-6.

Rail value for money study

- 2.24 In May 2011, the rail value for money study, sponsored by DfT and ORR, was published.⁹ The study highlighted a number of drivers of efficiency which are relevant to our work, including project management, innovation and asset management and we are building these findings into our analysis.

⁸ See http://www.nao.org.uk/publications/1011/regulating_network_rail.aspx

⁹ See <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10401>

3. Overall approach for PR13

Introduction

- 3.1 This chapter sets out the overall approach we intend to use in PR13 to establish assumptions on Network Rail's efficient expenditure in CP5. The level of expenditure will reflect the required outputs which the governments in England & Wales and Scotland set out in their high level output specifications (HLOSs). We take full account of the HLOSs in our determination together with the reasonable requirements of Network Rail's customers and other funders.

Timetable

- 3.2 Our key decisions for CP5 will be made when we assess the company's SBP. We will set out our assessment and decisions in our draft determination in June 2013 and, following consultation, our final determination in October 2013.
- 3.3 Ahead of that we will also assess the initial industry plan (IIP) that Network Rail and the industry are publishing in September 2011. The main aim of the IIP is for the industry to set out its proposals for CP5, as an input to the preparation of the governments' HLOSs and statements of public funds available (SoFAs). We will review the IIP and provide advice to the governments, which will include our view of the likely level of Network Rail's efficient expenditure, although this will be based on the information available at the time, which will inevitably be less robust than that later in the process. We will publish our assessment in February 2012.

Summary of planned approach

- 3.4 We will use a variety of approaches to analyse expenditure and the scope for efficiency improvements and, as noted above, we make our decisions on the scope for efficiency improvement as part of the wider package. In broad terms we will:
- (a) review 'bottom up' calculations of how Network Rail justifies its expenditure in detail, for example its planned volumes of work;

- (b) benchmark Network Rail's unit costs for specific activities against other companies in Britain or overseas;
 - (c) carry out 'top down' assessments of Network Rail's overall efficiency for OM&R compared to other companies or countries. Some of these calculations will also be carried out at a more disaggregated route level; and
 - (d) make a judgement on the level of efficient expenditure taking into account the overall package and the achievable pace of change on efficiency.
- 3.5 For enhancements a large amount of expenditure will be on projects that have already been given the go ahead by the governments and span control periods, for example Crossrail, Thameslink, the north west and great western electrification projects and the Edinburgh to Glasgow Improvement Programme. For these projects efficiency assessments have already been carried out or are underway. Further projects may be undertaken – for example as a requirement of the HLOSs - and we need to ensure their costs are efficient.
- 3.6 In assessing Network Rail's expenditure requirements we consider two broad types of efficiency improvement - catch up and frontier shift. Catch-up efficiency is the improvement that Network Rail should make in order to close the gap between itself and the best (or better) performing companies against which we have benchmarked the company. Frontier-shift efficiency is the continuous improvement in efficiency over time that would be expected of even the best (or better) performing companies.
- 3.7 Our efficient expenditure analysis will develop the PR08 analysis in certain respects:
- (a) **Route-based assessments.** In PR08 our analysis was geographically sub-divided into England & Wales and Scotland. As we set out in our initial consultation, in PR13 we will undertake our efficient expenditure assessments at a route level based on Network Rail's route level submissions, i.e. at a much greater level of disaggregation. One important benefit of this will be to facilitate stronger joint incentives between Network Rail and train operators.

- (b) **More focus on bottom-up approaches.** We will continue to use both top-down and bottom-up approaches to assess the scope for efficiency improvement, but we will be putting extra resource into bottom up analysis. Both approaches have their strengths and weaknesses. It can be difficult to have bottom up approaches which cover all aspects of expenditure, and all comparators, and do so in a way which avoids overlaps. Top-down approaches can make high level comparisons easier but raise problems of how to make adjustments, for example for the differences in the nature of the railway across countries. But on balance we believe we can usefully expand the bottom up comparisons to provide a stronger efficiency challenge to Network Rail.
- (c) **Beyond rail and Europe.** We will benchmark Network Rail more extensively against non-railway comparators, as best practice might be in other industries which are subject to stronger efficiency incentives. We also intend to focus more on non-European rail comparators, as the highest achievable efficiency levels may be found outside Europe.
- (d) **Explaining the efficiency gap.** We will also build on the work we, and others, undertook in PR08 to understand the efficiency gap – the so called 'gap analysis'. This seeks to explain the key drivers of the efficiency gap between Network Rail and other companies being benchmarked and the extent to which this can be closed in CP5.
- (e) **Enhancements data quality.** We are reviewing how Network Rail is capturing cost data from its existing programme of works and how it will use this information in building cost estimates for the CP5 programme. This work includes a review of how to use international and non rail benchmarks.

Improvements in Network Rail's data: regulatory accounts

- 3.8 To support our analysis we need Network Rail to provide better information in its 'regulatory accounts'. These are formal datasets which the company provides to us and publishes and we set out the requirements in regulatory

accounting guidelines (RAGs).¹⁰ In 2009-10 we made changes to the RAGs to require:

- (a) further disaggregation of operating expenditure by type and activity. In addition, more detailed information is required for insurance and capitalised overheads;
- (b) a regional analysis of maintenance expenditure (by maintenance delivery unit);
- (c) further disaggregation of income - for other single till income¹¹ and income by operator; and
- (d) detailed analysis of renewals expenditure. This analysis further disaggregates expenditure by asset type (e.g. structures) to show the expenditure by sub-category, e.g. underbridges and earthworks.

¹⁰ Network Rail's RAGs can be accessed at: <http://www.rail-reg.gov.uk/upload/pdf/regulatory-accounting-guidelines-2011.pdf> and the template regulatory financial statements for 2010-11 can be accessed at: <http://www.rail-reg.gov.uk/upload/xls/rags-template-statements-2010-11.xls>.

¹¹ Other single till income includes income from property and depots

4. Support and operations expenditure

Introduction

- 4.1 In PR08 we reviewed what we called Network Rail's operating expenditure. In PR13 we are calling this operating expenditure 'support and operations expenditure', as these two types of spend are very different.
- 4.2 In PR08 we also subdivided this spend into controllable and non-controllable expenditure or costs. Those costs classed as 'non-controllable' costs were British Transport Police, cumulo (business) rates, a railway safety charge (payment to RSSB), traction electricity and ORR fees. The extent to which these costs are actually controllable by Network Rail varies. As was the case in PR08, these costs need a bespoke treatment.
- 4.3 The purpose of this chapter is to:
- (a) explain what support and operations costs include;
 - (b) describe how we assessed these costs in PR08; and
 - (c) set out our planned approach to assessing these costs in PR13.

Background

- 4.4 Support costs include expenditure on activities that 'support' Network Rail's business such as insurance, information technology, human resources, and finance. Our work will also cover costs such as pensions that get 'recharged' to other parts of the business – they are included in maintenance, renewals and enhancements expenditure. Network Rail spent £470m on support costs in 2010-11 (after recharges).
- 4.5 Operations costs include expenditure on activities that 'operate' the infrastructure to allow trains to run such as signallers, control staff and timetabling. Network Rail spent £439m on operations costs in 2010-11. The largest aspect of this category is signaller costs and the vfm 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.
- 4.6 In 2010-11 Network Rail spent £419m on 'non-controllable' costs.

4.7 Table 4.1 sets out Network Rail's expenditure on support and operations (excluding non-controllable costs) in 2010-11.

Table 4.1: Summary of Network Rail's support and operations expenditure in 2010-11

£m (2010-11 prices)	Great Britain	England & Wales	Scotland
Human resources	75	68	7
Information management	76	68	8
Operations & customer services	439	400	39
Finance	31	28	3
Strategic sourcing (e.g procurement)	47	42	5
Planning & development	12	11	1
Safety & compliance	3	3	0
Other corporate services	40	36	4
Commercial property	87	82	5
Asset management & engineering	50	45	5
National delivery service (e.g. logistics support)	10	9	1
Group/central	39	34	5
Total	909	826	83

PR08 assessment

4.8 In PR08, we worked from a base year, Network Rail's 2007-08 budget. We made some adjustments to this base year where Network Rail's data was inconsistent. We made an allowance for input price inflation, and then applied an efficiency assumption.

4.9 The efficiency assumptions were largely derived from top-down benchmarking, e.g. Oxera's analysis of real unit operating expenditure improvements across a range of regulated networks. We supported this work with specific studies e.g. employment costs and insurance costs. The analysis showed a gap of around 35% at the end of CP3 (coincidentally the same as for maintenance and renewals).

- 4.10 We took a different approach for 'non-controllable' costs. Taking an example, Network Rail does not fully control its contribution towards BTP costs, although it is part of the industry discussion on requirements. We provided Network Rail with a lower allowance than it had proposed, reflecting (for example) efficiency savings that BTP could make and Network Rail takes the risk if the actual costs are lower or higher. On rates, Network Rail has a chance to influence the level during its negotiation with the Valuation Office Agency. In this case we made an allowance but said that the actual amount the company would receive would depend on its ability to demonstrate whether it negotiated efficiently.

Planned PR13 approach

Overview

- 4.11 We need to determine what the efficient level of support and operations costs will be for England & Wales and Scotland and for each operating route. We will do this by reviewing Network Rail's SBP and supporting evidence and in addition carrying out our own analysis.
- 4.12 As part of our progressive assurance work, we will monitor how Network Rail is developing its analysis of support and operations costs. This includes the specific studies in Table 4.2. If we are not satisfied with progress we will need to commission further work ourselves, but we need to take this decision while there is still time in the process - effectively by July 2012. We have already decided to carry out our own benchmarking analysis of employment costs.
- 4.13 Our approach to support and operations costs will be to decide on a base year and 'roll forward' costs for that year through each year of CP5 by applying an efficiency assumption. This means that although we will be using the results of the detailed studies in our analysis, we will not be constructing our forecasts by taking a view on every item of spend in each year and then summing these together. Applying efficiency assumptions to a base year is simpler and avoids spurious accuracy.
- 4.14 Network Rail is developing plans to deploy modern signalling more widely which, if implemented, could significantly affect future levels of operating costs. This will form the rationale for most of the operations expenditure in CP5 and beyond. We will review these plans to analyse their costs and whether they will deliver the planned benefits and we will build upon the initial

benchmarking of Network Rail's operating costs with international comparators that the vfm study carried out.

- 4.15 For 'non controllable' costs we will review how best to incentivise Network Rail to control these costs to the greatest extent. Some of these costs are partly driven by other parts of the industry and we will be using the industry reform process to review how a whole industry approach could have a stronger impact.

Our assessment

- 4.16 Network Rail should be able to show:
- (a) what work it needs to carry out and why, including why its costs are appropriate for a business of its size and type;
 - (b) the efficient income and costs required to do that work to an appropriate standard and why they are efficient (e.g. by citing external comparators);
 - (c) consistency in the treatment of costs, e.g. the capitalised support costs included in renewals and enhancements;
 - (d) identify the main risks and opportunities that could affect cost forecasts and how Network Rail will manage risks and exploit the opportunities; and
 - (e) how its plans reconcile to the base year and historic data.
- 4.17 In PR08 Network Rail did not provide an adequate level of supporting data. We expect to see a level of detail commensurate with the money involved. Taking insurance as an example, Network Rail would need to set out what risks the insurance is covering, demonstrate how it had decided between self insurance and third party insurance, provide evidence of the external benchmarking of insurance premiums, and show that there was no double counting with other protections against risk.
- 4.18 Although the exact timing and scope of work is still to be decided in some areas, Network Rail's and our current workplans are summarised in Table 4.2. The specific studies cover the major areas of costs. We will:

- (a) assess Network Rail's benchmarking studies, e.g. HR costs. In these studies Network Rail will compare the costs of its functions against the costs of similar functions in other organisations;
- (b) assess Network Rail's modelling/bottom up analysis, e.g. for pensions where Network Rail will be modelling its pension costs. We check that Network Rail's modelling uses reasonable assumptions;
- (c) ensure that the costs are consistent with the rest of Network Rail's plan, e.g. checking that the boundary between support costs and maintenance is appropriate; and
- (d) assess Network Rail's plans for changing the way it operates its signalling infrastructure to make sure that they are cost effective and deliverable.

4.19 As a general principle we expect the studies or a summary of the studies to be published, unless there are strong reasons (such as commercial confidentiality) preventing this.

Table 4.2: Specific studies for support and operations costs

Study	Timing
ORR led	
Top-down comparison of Network Rail support & operations costs against other companies	October 2011 to December 2012
Review of input prices	October 2011 to January 2012
Top-down benchmarking of total employment costs	August 2012 to November 2012
Network Rail led	
Contracts and procurement benchmarking (Hackett)	Complete, to be published
Benchmarking of HR, IT and finance functions (Hackett)	Complete, to be published
Benchmarking of employment costs	In progress, complete September 2011
Bottom-up analysis of utility costs	In progress, complete September 2011
Bottom-up analysis of pensions costs	In progress, complete October 2011
Bottom-up analysis of redundancy and severance costs	By September 2012
Bottom-up analysis of insurance costs (external and self insured) and top-down benchmarking of external insurance	By September 2012
Top-down benchmarking of other support costs (e.g. commercial property activity, corporate accommodation)	By September 2012 (except corporate accommodation, which will be by December 2012)
Bottom-up analysis and top-down benchmarking of central engineering costs.	By September 2012
Top-down and bottom-up benchmarking of income generating opportunities	By September 2012
Top-down benchmarking of project overheads (including those relating to enhancements)	By September 2012

5. Maintenance and renewal expenditure

Introduction

- 5.1 This chapter discusses our approach to the efficient expenditure assessment of Network Rail's maintenance and renewal activities. The purpose of this chapter is to:
- (a) explain which costs are classed as maintenance and renewal;
 - (b) describe how we assessed these costs in PR08; and
 - (c) set out our planned approach to assessing these costs in PR13.

Background

- 5.2 Network Rail must manage efficiently the maintenance and renewal of the rail network's physical infrastructure to meet legal obligations on safety, to deliver network outputs such as performance, to comply with its licence obligations and to meet its stakeholders' expectations. This includes making sure that outputs are consistently delivered beyond the individual regulatory control period and that asset lives are optimised in line with minimum whole life cycle cost analysis.
- 5.3 This whole life cycle analysis requires Network Rail to minimise the combined costs of renewal, maintenance, operation, risk (including safety and performance), and change management by considering the net present value of costs over the lifetime of the asset.
- 5.4 Maintenance expenditure covers the work required to maintain assets efficiently and sustainably. Maintenance work may be either planned (for example, routine or visual inspections) or reactive (for example, responding to asset failures). Maintenance expenditure is forecast and assessed for each of the following main asset categories: track, civil structures, signalling, electrification, telecommunications, and plant and machinery.
- 5.5 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, plant and machinery) as well as operational property, and other renewals.

5.6 Tables 5.1 and 5.2 summarise Network Rail's current spend on maintenance and renewals.

Table 5.1: Summary of Network Rail's maintenance expenditure in 2010-11

£m (2010/11 prices)	Great Britain	England & Wales	Scotland
Core Maintenance			
Track	423	386	37
Structures	34	30	4
Signalling	170	154	16
Telecoms	66	60	6
Electrification	34	30	4
Plant & machinery	38	35	3
Operational property	0	0	0
Other	10	10	0
Non-Core Maintenance			
Indirect costs	200	183	17
Other costs	93	84	9
Total maintenance expenditure	1,068	972	96

5.7 Non-core maintenance costs include indirect staffing costs, utility supply costs, engineering train haulage and inspection of structures.

Table 5.2: Summary of Network Rail's renewal expenditure in 2010-11

£m (2010/11 prices)	Great Britain	England & Wales	Scotland
Renewals			
Track	605	545	60
Structures	356	281	75
Signalling	373	357	16
Telecoms	248	206	42
Electrification	78	76	2
Plant and machinery	99	87	12
Operational property	272	229	43
Other renewals			
West Coast CP3 rollover	54	54	0
Information management	87	78	9
Corporate offices	40	37	3
Discretionary investment	17	15	2
Other	5	5	0
Total renewals expenditure	2,234	1,970	264

5.8 West Coast CP3 rollover includes expenditure on West Coast related projects that has slipped from CP3 into CP4. Discretionary investment consists of expenditure on Network Rail's modular switch and crossing programme and on developing its fleet engineering centre.

PR08 assessment

5.9 Our PR08 work included:

- (a) a bottom-up engineering and process based assessment of asset policies and their application to derive workload volumes for CP4. This included reviewing the link between activity levels and outputs, consideration of deliverability, and on-site audit of Network Rail's work bank;

- (b) a bottom-up engineering and process based assessment of maintenance and renewals efficiency opportunities, including an assessment of international best practice; and
 - (c) a top-down, statistical (econometric) analysis of Network Rail's maintenance and renewals efficiency using the UIC/LICB database.
- 5.10 In PR08, we largely accepted Network Rail's proposals for the pre-efficient level of maintenance expenditure – that is, we accepted the proposed volumes of work.
- 5.11 For renewals we made adjustments to Network Rail's proposed levels of pre-efficiency expenditure where plans were not fully justified. The main adjustment was to civil engineering expenditure due to weaknesses identified in Network Rail's modelling of these costs. For the costs derived from this model, funding was maintained in line with the peak reached in the final year of CP3, significantly below the expenditure level proposed by Network Rail.
- 5.12 The econometric analysis using the UIC/LICB dataset found an efficiency gap of 35%, with the bottom-up evidence supporting this gap.

Planned PR13 approach

- 5.13 Our assessment of Network Rail's plans for CP5 will build on the methodology applied at PR08, but with two significant differences: we intend to carry out much more detailed work on the benchmarking of Network Rail's processes and working practices by asset category, and our assessment will be undertaken largely at an operating route level.
- 5.14 Our assessment will cover the following areas:
- (a) asset management capability;
 - (b) asset policies;
 - (c) asset data;
 - (d) unit costs;
 - (e) decision support tools;
 - (f) workbank; and

- (g) international top down econometric benchmarking.

5.15 Each of these areas is covered in more detail below.

Asset management capability

5.16 Network Rail is one of the largest asset management organisations in Britain and must demonstrate suitable asset management capabilities. It has committed to have 'developed capabilities in asset management that are demonstrably comparable with best practice elsewhere in Britain' by March 2014, as measured by the asset management excellence model. There is an agreed trajectory for Network Rail to reach this target and we are monitoring progress against this trajectory.

5.17 Network Rail must demonstrate that it has fully considered its high level approach to asset management policy and strategy. This high level approach sits above the asset policies and provides the context for them. The asset management policy statement must review and quantify the management of issues such as risk and the longer term mission and vision for asset management. The strategy statement must cover issues such as devolution, procurement strategy, business process and product innovation, knowledge management, and the future of engineering and safety standards.

Asset policies

5.18 Network Rail's asset policies set out how it manages its assets. The policies determine the volume of work activity that Network Rail considers is appropriate to manage its assets efficiently and sustainably, whilst meeting the required outputs. Each asset policy will include proposed outputs and the options considered to deliver those outputs. For the chosen outputs it will provide the engineering, operational and financial appraisal, including:

- (a) comparisons of engineering robustness/reliability of output delivery;
- (b) whole-life cost analysis; and
- (c) analysis of effect on other duty holders' operations.

5.19 In presenting justification for its policies, we expect Network Rail to show that its policies will deliver appropriate outputs during CP5 and in future control periods, at minimum whole lifecycle costs. As a minimum Network Rail must

show that continued application of the policy would deliver the outputs in the final year of CP5 indefinitely.

- 5.20 We will assess whether Network Rail's asset policies are based on robust knowledge of its asset base, including degradation and the impact of maintenance and renewal intervention, a robust understanding of maintenance and renewal unit costs, and a robust assessment of whole life asset cost based on asset management data analysis (condition monitoring, criticality, risk). Where possible we will benchmark Network Rail's asset policies against those adopted by international rail comparators and also comparators from other industries.

Asset data

- 5.21 Network Rail needs good asset information to manage its assets effectively. Asset information includes asset types, volumes, ages, locations, condition, criticality and performance, and, where appropriate, how these change over time.
- 5.22 An in-depth understanding of asset degradation and intervention options is vital to the production of robust asset policies justified through whole life cycle cost analysis. Detailed knowledge of the current state of the assets is necessary for robust strategic planning and an optimised work bank.
- 5.23 We are currently auditing Network Rail's asset information to assess the integrity of the processes through which it is captured and the accuracy of the data produced.

Unit costs

- 5.24 Unit costs include the costs of all appropriate maintenance and renewal options. The comprehensive and robust capture of accurate unit costs is an essential facet of good asset management. Network Rail should use unit cost information for:
- (a) developing accurate forecasts of costs associated with activity plans;
 - (b) benchmarking of unit costs to understand the potential for efficiency;
 - (c) developing robust asset policy; and
 - (d) providing evidence of efficiencies achieved.

5.25 We have set Network Rail clear targets for how the company must present its unit costs data in its SBP, as shown in Table 5.3, and we are monitoring progress against these targets. In essence, our approach is:

- (a) define what part of maintenance and renewal spend must have unit cost data. This is the 'coverable expenditure'. Expenditure might not have a defined unit cost because, for example, there is no measurable quantity of physical work as might be the case for a feasibility study;
- (b) some spend could be covered by the framework but isn't, because, for example, it is very small and below reporting thresholds. Adjusting for this gives the 'unit cost framework coverage' percentage;
- (c) multiplying coverable expenditure by the unit cost framework coverage gives 'covered expenditure', the percentage of expenditure that the unit cost framework applies to; and
- (d) we then set targets for the quality of the reported data which here are 'A2'. This two part target covers system reliability and accuracy. System reliability is measured on a scale from A to D and covers the processes that produce the data. An A grade means that a best practice system is in place. Accuracy is measured on a scale from 1 to 6 and accuracy is calculated using a statistical test. A score of 2 means that the data is accurate to within +/- 5%.

Table 5.3: PR13 SBP unit cost framework requirements

Type of unit cost	System reliability and accuracy	Coverable expenditure	Unit cost framework coverage	Covered expenditure
		A	B	C (A x B)
Maintenance	A2	80%	90%	72%
Renewals	A2	60%	90%	54%

5.26 Unit costs must be benchmarked and we will draw on the results from three approaches:

- (a) **internal benchmarking.** Benchmarking of unit costs between business units within Network Rail to provide evidence of internal best practice and of the efficiencies which could be realised by adopting best practice across the network.

- (b) **national inter-industry benchmarking.** Some of Network Rail's unit costs, for example costs relating to civil structures, can be benchmarked against costs in other industries.
- (c) **international benchmarking.** Benchmarking unit costs of typical types of work against international comparators.

5.27 We will assess Network Rail's benchmarking activities to understand the integrity of the processes being used, including the quality of input data, the 'normalisation' adjustments (for example to make adjustments to data to allow fair comparisons to be made between Network Rail and other companies) and the analysis of outputs.

5.28 We will also consider the need for benchmarking specific areas of practice, processes and cost where these are material or where specific issues have been identified e.g. supply chain management.

Decision support tools

5.29 Network Rail uses decision support tools (mathematical models), for example using asset information and asset policies to forecast the volume of maintenance and renewal activities.

5.30 We need to be assured these models are robust and we audit them to establish their mathematical accuracy, consistency with engineering good practice and that they are aligned with policy.

Workbank

5.31 Network Rail must demonstrate that its workbank is consistent with its asset policies and strategic planning. The workbank sets out the volumes of work and their location. We will assess Network Rail's workbank through on-site audits to understand whether assets are being maintained and renewed in line with policy or whether there is potential for further scope efficiency.

International statistical (econometric) benchmarking

5.32 Our top down econometric work will continue to play a role in our analysis and we intend to make improvements in four main areas.

Improving data inputs

5.33 Making comparisons between countries is complicated by the fact that levels of renewals tend to follow cycles and countries may be at different stages of the cycles. Using a 'steady-state' adjusted level of renewal costs reduces this problem and we aim to do this for Network Rail, and for other countries in the international sample depending on data availability. To calculate the appropriate level, we will use asset service lives in Network Rail's asset policies, covering the main asset classes.

Improving output cross-checks

5.34 International comparisons can be distorted because outputs (for example the percentage of trains running on time) or safety levels differ significantly across countries. In such cases differences in expenditure may not reflect differences in efficiency but differences in what is delivered. It is difficult to include such factors directly in the statistical models, but it is possible to collect data to 'sense check' the models and we will be developing this area in PR13, building on our PR08 work.

Extending our analysis from national level comparisons to 'sub-company' analysis

5.35 While we will continue to develop our international comparisons at a national level, we have also developed a more disaggregated dataset comparing maintenance cost and outputs (cost drivers) for seven rail infrastructure managers from Europe and North America. This dataset contains information at a 'sub-company level' with cost and output data split into maintenance regions (operating routes for Network Rail). This is particularly valuable with the move to a stronger focus by Network Rail on operating routes.

Improving modelling techniques

5.36 We plan to improve the existing technical modelling techniques to take into account discussions we have had with relevant experts in the field. This work will include:

- (a) more advanced stochastic frontier techniques, based on the recommendations provided by our consultants in 2010¹²;

¹² The report we commissioned from Oxera is at: <http://www.rail-reg.gov.uk/server/show/nav.2499>

- (b) cross checking our econometric results against linear programming based (data envelopment analysis) efficiency calculations, in line with best regulatory practice; and
- (c) extending our 'time-varying inefficiency model' to reduce any bias in estimated cost efficiency gaps, for example due to the weight of a particular year in the time series.

5.37 The specific studies on maintenance and renewals expenditure that either Network Rail or ourselves are currently planning to carry out are shown in Table 5.4. As for support and operations costs, the exact scope and timing of work may change and other studies may be required. Network Rail has already carried out work in some areas which we will take into account in our studies. Again, as with support and operations studies, as a general principle we expect the studies or a summary of the studies to be published, unless there are strong reasons (such as commercial confidentiality) preventing this.

Reaching an overall view

- 5.38 We will review the evidence from each area of study and use the results across each area to inform our understanding of other areas. The bottom-up efficiency work, for example, will help explain the efficiency gap range highlighted by the econometric work.
- 5.39 We will then need to bring in further analysis, such as a comparison with historical levels of activity and expenditure and the quality of infrastructure thus achieved, to provide further confidence in our results.
- 5.40 Safety considerations, not only about the projected CP5 end point, but also about how quickly any changes can be made safely, will be central to our assessment.

Table 5.4: Specific studies for maintenance and renewals expenditure

Expenditure area	Study	Timing
<i>Maintenance activities</i>	<p>ORR led</p> <p>Regional (sub-company) top-down econometric benchmarking</p> <p>Non-EU (North America and Asia) benchmarking</p> <p>Bottom-up review of maintenance efficiency opportunities</p>	<p>Report updated results annually: September 2011 and September 2012</p> <p>Autumn 2011 to July 2012</p> <p>Autumn 2012 to Winter 2013</p>
<i>Renewal activities</i>	<p>ORR led</p> <p>Bottom-up review of renewals efficiency opportunities</p> <p>Network Rail led</p> <p>Benchmarking of UK Rail civil engineering projects to mainland Europe</p> <p>Bottom-up analysis of IT and other renewals</p>	<p>Summer 2012 to Winter 2012</p> <p>Completed. To be published</p> <p>By September 2012</p>
<i>Cutting across maintenance and renewal activities</i>	<p>ORR led</p> <p>Evaluation of gap analysis factors (RailKonsult)</p> <p>Materials unit cost benchmarking (Arup)</p> <p>Top-down national level econometric benchmarking using UIC/LICB data</p> <p>Review of NR's supply chain management</p>	<p>Complete. Published September 2010</p> <p>Complete. To be published</p> <p>Report updated results annually: September 2011 and September 2012</p> <p>In progress, complete Autumn 2011</p>

Expenditure area	Study	Timing
	International review of efficiency of possessions	In progress, complete Autumn 2011
	Asset management capability assessment and benchmarking	In progress, complete Winter 2011
	Review of asset policies and justification	In progress, complete review of initial policy update Autumn 2011 and review revised policies by Winter 2012
	Audit of asset data and knowledge	In progress, complete Autumn 2011 and update review by Winter 2012
	Audit of NR's unit cost benchmarking	In progress, initial view Autumn 2011 and update review by Winter 2012
	Audit of NR's current unit costs including data capture process and accuracy	In progress, complete Autumn 2011, updated analysis by Autumn 2012
	Review of NR's decision support tools including cost / volume / output tables	Summer 2011 – December 2011 and review of update Winter 2012
	Project and programme management study	Start Summer 2011, complete Spring 2012
	Innovation and change management study	Start Summer 2012, complete Winter 2012
	Network Rail led	
	Bottom up unit cost and engineering practice/process benchmarking	Autumn 2011 and Winter 2012

6. Enhancement expenditure

Introduction

- 6.1 This chapter discusses our approach to enhancements expenditure. The purpose of the chapter is to:
- (a) explain the overall approach to funding enhancements on the railway;
 - (b) describe our approach in PR08; and
 - (c) describe our planned approach in PR13.

Background

- 6.2 Network Rail can be funded to deliver enhancements in a periodic review. Major projects such as Thameslink and improvements to Birmingham New Street station, together with hundreds of platform extensions to allow longer trains to run, were funded in PR08.
- 6.3 There is also a mechanism – the ‘investment framework’¹³ – which allows enhancements to be funded between periodic reviews. In practice, a significant proportion of enhancements are funded this way.
- 6.4 Although funding is provided to Network Rail for enhancements in a review, some of the decisions on which enhancements to progress are made in collaboration with train operators. For instance, as part of the Strategic Freight Network programme, Network Rail and the freight operators work together to decide how best to use the available funds.
- 6.5 Assessing the efficient level of expenditure for enhancements is different from the approach taken for maintenance and renewal activities, although some of the same data is used. This difference is mainly due to the nature of enhancements projects, which often have bespoke solutions and include significant development and delivery costs spread over several years.

¹³ For more details see: <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10081>

PR08 assessment

- 6.6 There were two aspects to our assessment in PR08 – assessing whether Network Rail's proposed schemes were actually needed to deliver the governments' HLOSs and, for those schemes that were, assessing their efficient cost.¹⁴ In some cases we judged that Network Rail had over specified the number and type of schemes required to deliver, say, the DfT capacity specification, and we reduced the number of schemes accordingly.
- 6.7 For the projects funded in PR08, we did not publish a headline efficiency number to be applied to all projects. Instead, we allowed for efficiency when we calculated the costs of each project, which were estimated (on a bottom-up basis) by examining project scope, project costs, future efficient costs, further efficiency due to frontier shift, and input price inflation. For some types of projects, such as those delivering power supply upgrades or platform extensions, we applied a simple percentage efficiency improvement, reflecting a 'portfolio effect' whereby Network Rail had the benefits of flexibility in deciding exactly what projects were needed to deliver high level output specifications.
- 6.8 Table 6.1 sets out Network Rail's expenditure on enhancements in 2010-11.

Table 6.1: Summary of Network Rail's enhancement expenditure in 2010-11

£m (2010-11 prices)	
PR08 funded schemes	
NRDF (Network Rail Discretionary Fund)	31
NSIP (National Stations Improvement Programme)	27
Performance fund (HLOS)	46
Safety and environment fund	22
Access for all (DDA)	47
King's Cross	105
West Coast main line committed schemes	15
Thameslink	504
Reading	59
Platform Lengthening - Southern	26
Power supply upgrade total	22

¹⁴ In some cases the HLOS specified certain funds and the exact schemes which could draw on the funds were decided during CP4. In these cases the required analysis has been carried out during this control period

£m (2010-11 prices)	
East Coast main line improvements	14
Western Improvements Programme	16
North London Line capacity enhancement	29
Airdrie to Bathgate	87
Paisley corridor improvements	51
Other ¹⁵	-48
Total for PR08 funded schemes	1,053
Non PR08 funded enhancements (investment framework)	
Crossrail	47
Electrification	5
Edinburgh to Glasgow improvement programme	22
Ayrshire-Inverclyde	17
Third party promoted	126
Other - promoted by Network Rail or DfT	68
Funded directly by third parties (including £111m DfT)	392
Total for non PR08 funded schemes	677
Total enhancement expenditure	1,730

6.9 The independent PR08 programme evaluation concluded that this process worked well, especially given the relatively short timescales involved in developing, appraising, and approving the largest programme of works in recent rail history. But one of the main problems in PR08 was that many schemes were at an early stage of development, and it was therefore difficult to determine efficient costs accurately. The HLOS required a significant increase in enhancement spend and the industry did not have the time to gear up accordingly. We sought to tackle this issue in CP5 by providing Network Rail with a CP5 development fund, so that it could begin project development in good time for PR13.

¹⁵ Figure for the 'other' category is negative because of a £111m direct payment from DfT relating to PR08 schemes previously funded through Network Rail's regulatory asset base. More detail on the breakdown of enhancement spend can be found in Network Rail's regulatory accounts. The £111m is included in the 'funded directly by third parties' category.

Planned PR13 approach

- 6.10 Our approach will necessarily depend on how the governments specify their required outputs, but broadly speaking it will involve:
- a) if the HLOSs require 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 which government has already given the go ahead to and which span control periods; and
 - c) deciding on the efficient costs of any new schemes required either as a result of the HLOSs or other reasonable requirements of customers and funders.
- 6.11 To decide what schemes are needed to meet a HLOS requirement we would review the business case information provided by Network Rail in its SBP. In reviewing the options available to, say, increase capacity, government, Network Rail and ourselves are able to draw on Route Utilisation Strategies (RUSs)¹⁶ which are led by Network Rail and now cover the whole of Britain. They are developed by Network Rail in conjunction with local stakeholders and provide analysis on a route basis. Three 'second generation' RUSs¹⁷ are also nearing completion. We are currently discussing with Network Rail how the planning framework should change now that all the planned RUSs are coming to an end, looking at the strengths and weaknesses of the current system. The new planning framework will need to fit with the HLOS and periodic review processes.
- 6.12 There are a number of major projects that have been given the go ahead by both governments and will span control periods. In these cases the efficient cost assessment has already started and will be established in advance of the formal assessment of Network Rail's SBP. We are currently assessing costs for the Edinburgh to Glasgow Improvement Programme (EGIP) and the electrification programme through the investment framework. Thameslink and Crossrail have specific protocols under which there are separate

¹⁶ There is more detail on RUSs on Network Rail's website at:
<http://www.networkrail.co.uk/asp/4449.aspx>

¹⁷ Second generation RUSs are described on Network Rail's website at:
http://www.networkrail.co.uk/2_generation_route_utilisation_strategies

arrangements between Network Rail and the funders to determine the efficient cost estimate.

- 6.13 In terms of assessing efficient costs either for existing or new schemes, the issue of data quality is fundamental. We have been working with Network Rail to ensure better data is available. The National Audit Office recommended in April 2010 that we should develop a shared cost database with Network Rail, and this work was already in progress at the time of the NAO report.
- 6.14 We have continued this work. Since PR08 Network Rail has changed its processes to record unit cost data for enhancement projects to provide greater accuracy and transparency of historic information. It now captures data from existing schemes at two key stages of a project lifecycle and uses this data to benchmark cost estimates for future schemes. Capturing costs has become mandatory in the company's revised project management process and is tracked by their cost estimating team. Once the data has been approved by the estimating manager it is uploaded onto a database for modelling and challenging cost estimates for specific schemes.
- 6.15 It is important that this work delivers more accurate unit cost analysis for enhancement projects that will be assessed in the review. We want to be assured that it will and, using the progressive assurance approach, we are reviewing how data on the current programme is being captured and used, including how to use international and domestic benchmarks¹⁸. The first review in November 2010 set out a number of recommendations to ensure that historic information on the current programme can be successfully used in the next review. It also identified that Network Rail is not currently using international and non rail benchmarks to inform its cost estimates, which it will need to do.
- 6.16 This work will continue and follow up the deficiencies identified in relation to international and non railway benchmarks.
- 6.17 In PR08 we provided Network Rail with the CP5 development fund. This, in combination with the progression of CP4 schemes that will be completed in

¹⁸ We have started this work and the first report has been published on our website: <http://www.rail-reg.gov.uk/upload/pdf/enhancement-costs-phase1-131011.pdf>

CP5, mean that the output and cost data for selected projects will be better developed than in PR08.

- 6.18 Because of the nature of enhancement projects there are fewer specific studies defined at this stage than for OM&R. Our analysis of how Network Rail is capturing and using enhancement cost data will be updated in December 2011 and December 2012. Other data will be analysed as required, with the pace of working stepping up after the publication of the HLOSs.

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