
Summary

Introduction

1. Britain's railways have seen a period of remarkable growth and achievement over the last ten years, following decades of 'managed decline'. Since privatisation passenger numbers have doubled and freight traffic has risen by 60%. Last year, even in difficult economic conditions, the number of passenger journeys rose by 4%, and the volume of freight moved by rail saw growth of 3%.
2. Passenger revenues have risen recently by over 7% per year. Despite a more congested network, passenger satisfaction and train punctuality are at or near an all-time high. And, while we can never be complacent, the industry has a good recent safety record.
3. The growth of demand for rail – driven partly by demographics and congestion on other modes, but also by the industry's own efforts to raise its standards – is both a great advertisement and opportunity for the industry. But demand growth has also put pressure on a network which, in places, is near its capacity. Further growth of around 14% in passenger demand and 22% in freight is forecast for the next five years.
4. The governments in London and Edinburgh, as well as other funders, have shown great confidence in rail. Both freight and passenger capacity contribute to wider economic, social and environmental objectives and, for this reason, rail is a subsidised industry with current support at around £4bn a year¹. Over the five year period of this determination, the governments have committed £18bn. That includes investing in major enhancement of the network where it is most needed.
5. Within this overall industry picture, Network Rail – Britain's national rail infrastructure provider – is currently on course to deliver a substantial programme of investment projects. It has also significantly reduced disruption to passengers and freight from engineering works, and reduced its costs.
6. Network Rail has made important changes in its internal structure, moving more responsibility away from the centre towards its devolved routes, and making changes

¹ All numbers in this summary are in 2012-13 prices, unless otherwise stated.

to how it works with the wider industry in terms of alliances with train operators and more partnership working with suppliers.

7. But, although more than nine out of ten trains run on time, the company has not in recent years met all the performance targets for which it is funded. The challenges it faces will get harder as passenger and freight demand grows (leading to more intensive use of the network), improvement projects require more engineering work on the network, and passenger expectations rise. And the pressure to reduce the costs of the railway will continue.
8. Our determination sits in this context. We aim to build on the progress that Network Rail has made, while tackling remaining weaknesses and driving the company to prepare for the even tougher environment ahead while reducing costs.
9. The determination sets the outputs, incentives and financial framework for Network Rail for the five years from April 2014, identifying the scope for the company to increase efficiency further and to improve performance.
10. In addition, it reflects the need for investment both in growing the capacity of the network, and in addressing historic underinvestment in network assets over many decades. With over £12bn of improvement projects to be completed, we have focused on ensuring that Network Rail delivers the right projects in the right way, providing the best possible value for money to taxpayers and the railway's customers.
11. We have also focused on the need for Network Rail to improve its asset management. This is key to raising efficiency, managing risks to performance and delivery for customers, the long-term sustainability of the network, and for achieving the highest standards in safety.
12. We want Network Rail to deliver on the outputs we are setting, become more efficient and more commercially responsive to the needs of its customers. We also want it to become more focused on developing the capability and innovation needed to sustain and improve its performance over the longer term.

Structure of this summary

13. The next section explains the PR13 process. It then:
 - (a) sets out our analysis of the affordability of the governments' high level output specifications;

- (b) describes how the PR13 determination is a balanced package in terms of required outputs, our assumptions on efficient expenditure, and the incentives and financial frameworks;
- (c) explains the changes in access charges paid by operators;
- (d) assesses the risks to deliverability;
- (e) explains what this determination means for Network Rail;
- (f) explains the impacts on affected groups;
- (g) explains how we will monitor, report on and enforce delivery;
- (h) discusses longer term issues; and
- (i) outlines the next steps.

The PR13 process

14. PR13 determines the outputs we expect Network Rail to deliver, the income the company will receive and the incentives it will face, for the five years of control period 5 (CP5) which runs from 1 April 2014 to 31 March 2019.
15. Network Rail's revenue comes from access charges which are paid by train operators to use Network Rail's track and stations. Income is also received direct from government, as a network grant, 'in lieu of' access charges. The company also gets income from other sources such as property. In our 2008 determination (PR08) we assumed roughly 30% of revenue would be from access charges, 60% from network grant and 10% from other sources.
16. Schedule 4A to the Railways Act 1993 ('the Act') sets out the statutory process we must follow in carrying out an access charges review (such as PR13). An important part of the process involves the Secretary of State for Transport (for England & Wales) and the Scottish Ministers providing us with their requirements in terms of high level output specifications (HLOSs) and statements of funds available (SoFAs), setting out what they want to be achieved during the control period and the public financial resources they are making available. They published these in summer 2012².

² Both HLOSs and SoFAs are available from <http://www.rail-reg.gov.uk/pr13/Publications/key-publications-by-stakeholders.php>.

17. This document sets out our draft conclusions on PR13, on which we are consulting. It represents the culmination of two years' work since we published our first consultation document in May 2011. We have consulted extensively and worked in a transparent way and we would like to thank all those organisations and individuals who have provided input to the review. We have developed a substantial body of evidence to support our decisions. Our analysis is set out in this document, with more detailed supporting reports on our website³.
18. Network Rail's PR13 strategic business plan (SBP) was submitted to us in January 2013⁴. It was drawn up by the company following consultation with the industry including train operators and suppliers. An industry plan was published at the same time to set Network Rail's plans in a broader context.
19. We reviewed the SBP in detail and compiled our own extensive evidence base. We have assessed the quality of the input data Network Rail has used (for example on its unit costs), its planned volumes of work and proposed efficiencies. Our decisions are supported by comparisons with how work is carried out in other industries and in other countries, based on studies by independent consultants and our own in-house analysis.
20. This determination sets out the distinct – but linked – set of decisions we have taken for Scotland and for England & Wales. This reflects the separate responsibilities that the two governments have for the strategy and funding of railway infrastructure. However, some parts of the framework are common to both, as Network Rail is one company, operating across the whole of Great Britain.

Affordability

21. In a periodic review we have to decide if the HLOSs of the Secretary of State and the Scottish Ministers are affordable given the public funds available, and taking into account industry revenues and costs. Our analysis shows that the assumptions included for other parts of the industry (e.g. franchised train operators), are reasonable. Taking into account these assumptions and our decisions on Network

³ See <http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php>.

⁴ *Strategic business plan for England & Wales*, Network Rail, January 2013 and *Strategic business plan for Scotland*, Network Rail, January 2013 and associated documentation are available from <http://www.networkrail.co.uk/publications/strategic-business-plan-for-cp5/>.

Rail's funding, the cost of the Scottish Ministers' specification is slightly above the funds available while the Secretary of State's is slightly below. These numbers could change by the final determination. We must notify the relevant government if at any time we decide the specification is not affordable.

22. Although the figure for Scotland is currently negative, at this stage we consider that the gap will be closed, partly because the exact funding levels for projects in CP5 have not yet been finalised.
23. If it appears that there will be a surplus at the time of the final determination we would agree with the relevant government how this should be treated.

A balanced package

24. Our statutory duties are mostly set out in section 4 of the Act (see annex J). These include duties to have regard to any general guidance given by the Scottish Ministers and the Secretary of State. Our duties are not in any order of priority and it is for us to decide how to weigh these when reaching our decisions. In reaching our decisions, we have considered all of our statutory duties and reached a judgement about the appropriate weight to give to each of them.
25. All our decisions on the overall PR13 settlement are made as part of a 'balanced package' for CP5. The settlement may be regarded as more challenging in certain areas and relatively less challenging in others, but should be considered and judged as a whole. Our considered view is that this determination is challenging but achievable for Network Rail in terms of efficiency, value for money and deliverability. It will improve safety and it takes account of long-term needs as well as the short-term – i.e. is sustainable. Furthermore, it incentivises Network Rail to efficiently manage costs it can control.
26. We have also taken into account the Railways Infrastructure (Access and Management) Regulations 2005⁵ which set out the principles we must follow in establishing the framework in which Network Rail sets access charges.

⁵ Available at <http://www.legislation.gov.uk/ukxi/2005/3049/contents/made>. These regulations were amended in 2009 by the *Railways Infrastructure (Access and Management) (Amendment) Regulations 2009*, available at <http://www.legislation.gov.uk/ukxi/2009/1122/contents/made>.

27. The starting point for the package is the outputs that we are requiring the company to deliver.

Outputs

28. Network Rail must continue to meet its legal safety obligations, improving safety where reasonably practicable. Safety improvements will continue to be a priority and extra funding will reduce the risk at level crossings, for example by enabling the closure of more crossings. There will be new funding to improve the safety of those working with high voltage electricity on the railway.
29. There will be a major programme of improvement works with existing projects such as Crossrail, the Edinburgh – Glasgow improvement programme (EGIP) and Thameslink completed, the completion of new projects such as the electrification of the Welsh Valley lines and the expansion of the Northern Hub programme centred on Manchester.
30. Although passenger and freight demand will be growing, Network Rail should deliver this programme while ensuring that 92.5% of trains arrive on time nationally by 2019 (as measured using PPM⁶), compared to 90.9% today. It will also reduce disruption to passengers and freight customers from engineering works over the control period.
31. There will be a renewed focus on improving the worst performing services, with the performance for each franchised operator in England & Wales to reach a minimum of 90% of trains on time. This will benefit customers on routes where train service reliability has been much worse than average. Network Rail and the train operators will have the flexibility to set the ‘trajectory’ to reach this output. Our PR08 settlement was based on 90% being reached for all operators, with specific funding allocated, but this has not been achieved. We have adjusted Network Rail’s finances in CP5 for not delivering performance outputs.
32. We will set outputs for Network Rail’s asset management – its management of the network infrastructure. This is fundamental to the company’s ability to improve performance and efficiency and to ensure the longer term sustainability of its assets and deliver its outputs in CP5 and beyond.

⁶ Public performance measure (PPM) is the proportion of trains that arrive at their final destination ‘on time’ (within five minutes for London & South East and regional services; or ten minutes for long-distance services).

33. There will therefore be new outputs for the quality of asset data, outputs to improve its asset management capability, and for the delivery of the 'ORBIS' programme⁷ which will increase the effectiveness with which Network Rail deploys its asset knowledge to make decisions. Although Network Rail has improved its asset management during the current control period (CP4⁸), the pace needs to quicken to meet the challenges of CP5 and beyond. We will strengthen the focus on this area.
34. In addition to the regulated outputs we will also be expecting Network Rail to improve its approach to the environment, both reducing its own impact on the environment and improving the resilience of the network to climate change. It will be producing further plans before the start of CP5 on how it will reduce its own impact, and these will be subject to independent review and challenge. It will revise its climate change adaptation plan and re-submit this in September 2013 with its response to this consultation. We will review this for the final determination.
35. We will be monitoring and publishing other relevant information as indicators or enablers of change in the sector. For example, passenger satisfaction ratings, 'right time' performance⁹ information by groups of train services and feedback from Network Rail's customers.
36. Table 1 provides a brief summary of the outputs we are setting.

Table 1: Summary of regulated outputs for CP5

Area	Outputs
Train service reliability	<ul style="list-style-type: none"> Annual target for the percentage of trains on time (measured by PPM for England & Wales and Scotland, with 92.5% on time by March 2019) All franchised operators in England & Wales to reach 90% PPM by March 2019
	<ul style="list-style-type: none"> Annual target for the percentage of trains cancelled or very late in England & Wales (measured by CaSL¹⁰), with no more than 2.2% in this category by March 2019

⁷ ORBIS stands for 'Offering Rail Better Information Services'.

⁸ CP4 runs from 1 April 2009 to 31 March 2014.

⁹ 'Right time' performance measures the percentage of trains arriving early or within 59 seconds of schedule.

¹⁰ CaSL (Cancellations and Significant Lateness) measures passenger trains which are either cancelled (including those cancelled en route) or arrive at their scheduled destination more than 30 minutes late.

Area	Outputs
	<ul style="list-style-type: none"> 92.5% of freight trains on time (measured by the Freight Delivery Metric¹¹)
Enhancements	<ul style="list-style-type: none"> Wide range of improvement projects completed. Delivery milestones will be published in March 2014 delivery plan alongside development milestones for early stage projects
Safety	<ul style="list-style-type: none"> Legal health and safety obligations to be met
	<ul style="list-style-type: none"> Network Rail required to deliver a plan to maximise the reduction in risks of accidents at level crossings, using a £67m ring-fenced fund¹²
Disruption to passengers and freight caused by engineering works	<ul style="list-style-type: none"> Disruption reduced by over 10% for passengers and 30% for freight in 2019 compared to 2014
Network capability	<ul style="list-style-type: none"> Track mileage & layout, line speed, gauge, route availability, electrification at least maintained, and improved where there are enhancement works
Stations	<ul style="list-style-type: none"> Minimum average condition
Asset management	<ul style="list-style-type: none"> Asset management capability
	<ul style="list-style-type: none"> Asset data quality
	<ul style="list-style-type: none"> Milestones for 'ORBIS' data improvement project

Efficient expenditure

37. We have reviewed Network Rail's submission and collected our own evidence. In a number of areas, Network Rail's submission was a considerable improvement over PR08, but weaknesses remain. A number of documents were submitted late and with significant inconsistencies.
38. However, compared to PR08, Network Rail made much more realistic assumptions about the cost reductions that could be achieved. This is reflected in our determination where in some areas we have only made small changes to Network Rail's SBP numbers.

¹¹ Freight Delivery Metric (FDM) measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time.

¹² Note that safety is not a devolved responsibility so all safety related outputs, indicators and enablers apply to England, Wales and Scotland.

39. A very high level summary of our determination is shown in Table 2, with a comparison to our PR08 determination (which covers the years 2009-2014) and Network Rail's SBP. The first row looks at total expenditure and then the second subtracts enhancement spend, as the level of enhancements partly reflects what is required in the HLOSs. The third row focuses on the costs that Network Rail can most directly control.
40. Overall, our analysis shows that the costs Network Rail can most directly control¹³ in CP5 should be £1,995m less than in PR08 and £1,907m less than Network Rail asked for in its SBP. Seen in the context of continued growth in passenger demand, this means that the costs of running the railway per passenger km will fall by 28%.
41. The amount Network Rail is funded for (the net revenue requirement) is £1,799m less than the company proposed¹⁴. This partly reflects our view that Network Rail can raise debt at lower interest rates than the company assumed.
42. Although debt levels will rise, this will be manageable for the company as the value of Network Rail's assets (the 'RAB' – the regulatory asset base) will also rise. The debt/RAB ratio will increase but will be below the limits we set.

Table 2: Summary of our determination for CP5 (Great Britain)

£m 2012-13 prices	PR08	SBP	DD
Total expenditure	35,721	40,095	37,869
Total expenditure excluding enhancements	26,425	27,706	25,630
Support, operations, maintenance and renewals costs	23,380	23,293	21,385
Net revenue requirement	29,119	29,227	27,428
Net debt / RAB	62.7%	68.8%	68.2%

43. Although we calculate a level of assumed expenditure we do not decide exactly how much money Network Rail should spend in each area of its business. We make assumptions for each main area of costs, as discussed below, but it is for Network Rail to manage its business within the overall framework.

¹³ Support, operations, maintenance and renewals, see later text for definitions.

¹⁴ The revenue requirement is different from the assumed expenditure because the cost of renewals and enhancement works is spread over time and it also includes costs such as debt interest.

44. We have reviewed **support costs**, which are mainly administrative costs such as finance, human resources and information management, but also other running costs such as utilities costs and insurance. In its SBP, Network Rail said it would need to spend £2,232m in CP5, which is £508m less than in CP4. Network Rail provided a much better justification of its support costs than it did in PR08.
45. We have assumed that it needs to spend £2,093m (5.5% of total expenditure), £139m less than it assumed, mainly reflecting that in some areas, such as information management, Network Rail can deliver more efficiencies than it included in its SBP. We expect 20% efficiency savings in core support costs compared to Network Rail's 12.3%¹⁵.
46. **Operations costs** are those incurred in 'operating' the infrastructure, such as signalling. In its SBP, Network Rail said it would need to spend £2,027m, which is £212m less than in CP4, mainly as a result of deploying new technology to change the way it runs the network. In general, Network Rail's analysis is well founded and we broadly agree with its conclusions which will put the company at a leading position in Europe.
47. We have assumed that the required spend is £59m lower at £1,968m (5.2% of total expenditure). It can make efficiencies of 17% compared to the 13% in its SBP, mainly to reflect efficiency opportunities which cut across all spend areas and our view of achievable efficiencies in non-signaller costs.
48. **Traction electricity costs** are the costs Network Rail incurs in buying electricity. These costs have dropped significantly since the SBP, by £524m, as industry electricity prices have fallen. **Industry costs** cover items such as Network Rail's contribution to the British Transport Police. We have made a small reduction of £26m in Network Rail's assumed spend in this area.
49. Our determination numbers are presented on two bases, a 'like for like' basis which allows direct comparison with the SBP and an adjusted basis which takes account of our changes to the way maintenance and renewal spend is classified. Table 3 shows both approaches.

¹⁵ Efficiency is measured by comparing the last year of CP5 to the last year of CP4.

50. Good maintenance of the railway is crucial for safety and high performance. **Maintenance costs**¹⁶ include inspection and repair of the infrastructure. In its SBP, Network Rail said it would need to spend £4,669m on maintenance, which is £884m less than in CP4. The SBP included maintenance efficiencies of 13.7%¹⁷.
51. We have assumed that Network Rail needs to spend slightly less, £4,645m (12.3% of total expenditure) on maintenance in CP5, using the same definitions as the SBP. We have decided that efficiencies of 16.5% are achievable by the final year of CP5 compared to the final year of CP4 but we have also changed the profile of efficiencies (so the required efficiencies are lower in the early years than Network Rail assumed). This is to allow Network Rail more time to make the required changes in working methods in a safe and effective way.
52. The implications of our assumptions are that Network Rail will be able to deliver the volumes of maintenance work that it assumed in its SBP.
53. To reach our view on the further efficiencies available we have reviewed the likely resource implications of Network Rail's proposed new ways of working, and the efficiency improvements which might be obtained, for example through carrying out more automated inspections, making sure that the right work is done at the right location at the first visit and making sure that working arrangements allow the most productive use of time.
54. **Renewals** are where the existing infrastructure, such as the track, is replaced, without changing or enhancing its performance. In its SBP, Network Rail said it would need to spend £14,365m, which is £1,679m more than in CP4. The SBP included renewals efficiencies of 15.7%¹⁸ by the final year of CP5.

¹⁶ In its SBP Network Rail changed the definition of maintenance to include some 'reactive maintenance' e.g. civils and buildings inspections and examinations costs (some of which were treated as renewals in CP4). We have extended this approach to a wider range of costs. This has the effect of increasing maintenance spend and reducing renewals spend compared to the SBP, so for example our assumption is that Network Rail will need to spend £5,152m in CP5 on maintenance after this change. Where possible we have presented numbers on a 'like for like' basis to make comparisons easier.

¹⁷ Network Rail's published number is different. We have adjusted it to take into account the extra work required due to the number of assets increasing (e.g. from electrification) and traffic growth.

¹⁸ This is our adjusted number to show clearer comparisons.

55. We have assumed that Network Rail needs to spend £12,681m (33.5% of total expenditure) on renewals in CP5, using the same accounting as the SBP¹⁹ (£1,684m less than Network Rail assumed). To reach this view we have reviewed the volumes and costs of work required before efficiencies and the efficiency opportunities available during CP5.
56. We have made reductions where Network Rail's justification of its plans is not sufficient and where its unit cost calculations were not justified, for example in buildings, information technology (IT) and the research and development (R&D) fund.
57. We have assumed that efficiencies of 20.1% are achievable by the final year of CP5, with further efficiencies achievable beyond the SBP, for example through improved management of possessions, working more effectively with the supply chain, improved asset management systems and better targeting of work.
58. We have developed a new approach to spending on civil engineering assets. The level of civils spend (on assets such as bridges and tunnels) will rise in the short-term to address the backlog of work and hence reduce disruption to services, but the quality of information on civils assets means it is difficult to forecast exactly how much work will need to be done and at what cost. We have made a provision (of £2,362m) based on Network Rail's view of required volumes of work and our view of efficient costs, but the total spend will depend on our assessment of a plan Network Rail will produce in 2015 when it has better information. This will reduce the risk on Network Rail and improve value for money.
59. **Enhancements** are projects that improve the railway. The improvements will involve a major expansion of capacity in London (Crossrail and Thameslink) and in Scotland. There will be increased capacity and quicker journey times between our key cities, increased capacity for commuter travel into major urban areas and the improvement of rail links between major ports and airports. There will also be an expansion of electrification, improving service quality and reducing emissions. This will include the Great Western route to Bristol and South Wales, the Welsh Valleys, the North West and an electric spine from the South Coast to the Midlands/ Yorkshire for freight and passenger traffic.

¹⁹ After adjusting for the reactive maintenance changes this is £12,173m.

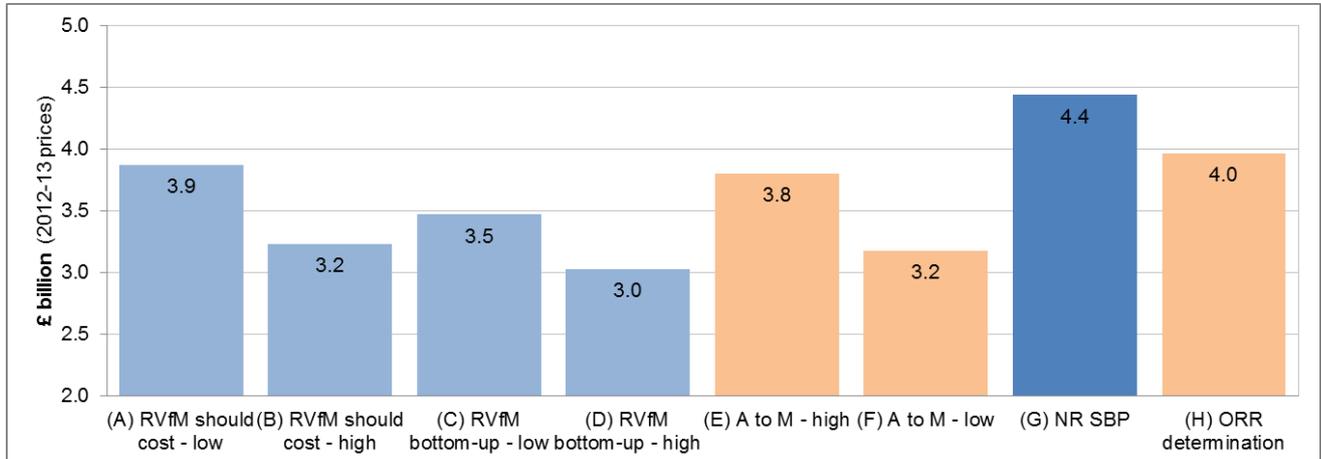
60. Network Rail said it would need to spend £12,388m, compared to £11,294m in CP4. About 30% of this is for electrification, 25% is for Thameslink and Crossrail and 10% is allocated funds to achieve specific purposes such as improving the network for freight. We have reduced this to around £11.6bn after reviewing each of the projects: £10.3bn in England & Wales and £1.3bn in Scotland. We then adjusted the total levels of expenditure to allow for some extra costs that were not included in the SBP, mainly increased compensation payments to train operators for the disruption caused by the works, which brought the total to £12,239m.
61. Around £7bn of projects are at an early stage of development and hence the costs are uncertain. Fixing this cost now would involve paying a large 'risk premium'. So to ensure better value for money we have taken a new approach to setting the efficient level of costs for these projects, building on a proposal made by the Rail Delivery Group. We have made a provisional cost assessment now but we will finalise the total efficient cost in March 2015.
62. Table 3 contains a summary of our efficient expenditure assumptions compared to PR08, forecast CP4 outturn (adjusted to make it more comparable to this determination) and Network Rail's SBP.

Table 3: Summary of our CP5 efficient expenditure assumptions

£m 2012-13 prices	PR08	CP4 (adjusted)	SBP	DD (like for like)	DD
Support costs	4,113	2,740	2,232	2,093	2,093
Network operations		2,239	2,027	1,968	1,968
Traction electricity, industry costs and rates	2,175	2,349	3,701	3,114	3,114
Network maintenance	6,126	5,553	4,669	4,645	5,152
Schedule 4 & 8 costs	870	875	712	1,131	1,131
Total operating expenditure	13,284	13,756	13,341	12,950	13,456
Renewals	13,141	12,686	14,365	12,681	12,173
Enhancements	9,296	11,294	12,388	12,239	12,239
Total capital expenditure	22,437	23,980	26,754	24,920	24,413
Total expenditure	35,721	37,735	40,095	37,869	37,869

63. In 2010, we co-sponsored with DfT the Rail Value for Money (RVfM) study, led by Sir Roy McNulty, which reported in May 2011²⁰. This helped to set the context for PR13, and established a broad range of efficiency improvements which could be achieved across the rail industry. We were pleased to see that many aspects of the study were reflected in Network Rail's SBP, so that the company approached PR13 with a better view of the available efficiency opportunities.
64. Figure 1 shows our expenditure (support, operations, maintenance and renewals) assumptions in 2018-19 compared to:
- (a) the RVfM study, which estimated ranges for railway costs based on different methods of calculation ('should cost' and 'bottom up');
 - (b) The advice to ministers ('A to M' in the table) we provided in March 2012, which was also provided as a range and was designed to inform the development of the HLOSs; and
 - (c) Network Rail's SBP submission.

Figure 1: Expenditure comparisons 2018-19 (Great Britain)



65. In financial terms our determination is below Network Rail's SBP but above the RVfM study and our advice to ministers ranges. It is difficult to compare our findings directly with those of the RVfM study, because that study did not take account of increasing outputs or longer term sustainability issues (such as the extra volumes of civils work we now consider need to be delivered). The RVfM study also said that achieving its

²⁰ *Realising the Potential of GB Rail: Final Independent Report of the Rail Value for Money Study*, May 2011, available at <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10401>.

high estimates for the industry as a whole depended on wide ranging changes across the industry. We are slightly above our advice to ministers range, reflecting the better information we now have.

66. In this periodic review we have established and drawn on a much deeper and robust base of studies, with newer evidence and analysis, than was available to the RVfM study or at the time of our advice to ministers. The review sets a strong efficiency challenge and our plans for enhancements efficiency develop this challenge further. Taking all this into account we believe that the efficiency challenge identified in the RVfM study for Network Rail itself will have been fully addressed for CP5.
67. It should also be noted that the RVfM study identified savings of £0.5bn to £1.2bn that it considered other parts of the industry, mainly train operators, could make by the end of CP5.

Incentives

Whole industry incentives

68. We have taken a new approach for enhancement projects where the scope, specification and efficient cost are currently uncertain. This will give Network Rail more time to work with the train operators, customer and business groups to get the scope of the projects right, and ensure they are focused on maximising benefits.
69. There is opportunity for the company to reduce spend by more than we have assumed in this assessment. We want to incentivise Network Rail to work with the industry to 'outperform' this determination, and benefit from this outperformance. We will set the efficient costs for the programme at the aggregate level to ensure costs are controlled. Network Rail can decide how much to spend on each project and will be able to enter into commercial arrangements with train operators such that, where the operators can help reduce costs, they can share these savings. Network Rail can include the payments to operators within the efficient cost of the project if certain safeguards are met (such as not compromising longer term considerations). Taxpayers will also share the benefits where the costs of the enhancement projects are reduced.
70. We are also introducing a new efficiency benefit sharing scheme to encourage further savings to be made in the day-to-day running costs of the railway. This will apply at the Network Rail route level. Network Rail is increasingly devolving responsibilities to

its ten operating routes and this new mechanism, called REBS²¹, will build on this. We expect operators to work closely with Network Rail and if Network Rail's costs are lower than we assumed the operators will share the savings but if they are higher then operators will shoulder part of the increase. DfT has said that for new competitively let franchises, the franchise agreement will allow train operators to benefit from REBS (but this will not apply to negotiated direct awards with existing franchisees). Transport Scotland will allow the new ScotRail franchise to benefit from REBS.

71. The existing volume incentive, which encourages Network Rail to look for ways to increase passenger and freight travel by working more closely with train operators, will be strengthened and the company will need to demonstrate how its decisions take the incentive into account.
72. We are working with Network Rail to develop indicators to measure its 'system operator' capability – how well it plans and timetables the network and balances competing customer needs. This will lay the foundations for better use of network capacity in the future.

Incentives to reduce disruption to customers

73. We have updated the Schedule 8 and Schedule 4 regimes which are in track access contracts. The Schedule 8 regime covers the punctuality and reliability of train services. For example, if the lateness of trains increases above a set benchmark because a Network Rail asset fails, Network Rail makes a payment to the affected train operator. The level of payment is based on the likely revenue loss to the operator and these payment rates have been increased to reflect factors such as the higher levels of traffic on the network. These payment rates are also used in the Schedule 4 regime which compensates train operators for the disruption caused by engineering works. Schedule 4 costs have therefore also increased. These increased payment rates significantly strengthen the incentive on Network Rail to reduce disruption to customers, which supports the output requirement to reduce disruption.

Financial assumptions

74. We have funded Network Rail for its efficient financing costs. Network Rail has no shareholders and therefore no dividend requirements. Hence its financing cost is the interest it pays on its debt. Interest rates are currently very low and are expected to

²¹ Route-based efficiency benefit sharing.

remain low for some time. Network Rail also benefits from a financial indemnity mechanism (FIM) which means that all its debts are guaranteed by the UK Government.

75. We have removed the existing annual 'risk buffers' (of around £250m a year) which Network Rail currently receives to protect it against financial risks. In CP5, Network Rail will be able to use its balance sheet for protection against financial risk. That is, it can raise extra debt in the event that (say) costs are above forecast. But there needs to be limits to this process and we are retaining Network Rail's licence condition restricting its level of debt as a proportion of its assets, as it incentivises Network Rail to control its costs²² and provides important protections to the public purse. Our current thinking is that the ratio of debt to assets should not exceed 70-75%.
76. Table 4 below describes how we arrive at Network Rail's revenue requirement, showing how we combine our expenditure and financial assumptions.
77. Operating costs²³ are added to an allowance for amortisation (depreciation) which is the average long run level of renewals required to keep the network in steady state. We then calculate the return that shareholders would require if Network Rail was funded by equity (the cost of capital multiplied by the asset base) before deducting the 'equity surplus' as the company is not funded by equity. We do this to be transparent as it is still important to identify Network Rail's cost of capital to encourage Network Rail to invest efficiently, achieve the appropriate balance between maintenance and renewals, and ensure a level playing field (between Network Rail and potential competitors) for the delivery of enhancements. We are setting the cost of capital at 4.31%.
78. The adjusted allowed return of £5,987m (the forecast actual cost of finance) in our determination is £2,389m lower than Network Rail's SBP. This is primarily due to our assumption of a lower cost of nominal debt issued (around £1,700m reduction) and a lower FIM fee²⁴ (around £270m reduction).

²² This is because, unless we have consented otherwise, Network Rail could be in breach of its network licence if it does not use reasonable endeavours to ensure that its total financial indebtedness does not exceed the limits specified in that licence.

²³ Operating costs are support, operations, traction electricity/industry costs and maintenance

²⁴ This is the fee Network Rail pays to the UK Government to reflect the benefit it receives from having its debt backed by the UK Government through the financial indemnity mechanism.

79. We then look at financial indicators and adjust the level of amortisation so that Network Rail's financial sustainability is not unduly affected by this approach (hence the term 'financial sustainability adjustment'). This gives the gross revenue requirement. But Network Rail earns income from 'other single till income' sources such as property. This money is deducted from the gross revenue requirement to leave the net revenue requirement, which is the amount that needs to be recovered from access charges or network grant. We have assumed Network Rail can generate £376m more income from property than it assumed in its SBP.

Table 4: Our determination of Network Rail's CP5 revenue requirement (Great Britain)

£m 2012-13 prices	PR08	SBP	DD
Operating costs (including Sch. 4 & 8)	13,284	13,341	13,456
Amortisation (long-run steady state)	8,903	10,540	9,794
Tax allowance	-	-	18
Release of opex memorandum account	-	138	115
Gross revenue requirement before cost of capital	22,187	24,019	23,384
Allowed return (real cost of capital)	10,455	13,092	11,267
Less: Real equity surplus	-	(4,716)	(5,280)
Adjusted allowed return	10,455	8,376	5,987
Gross rev. req. pre-sustainability adjustments	32,642	32,395	29,371
Additional amortisation (financial sustainability adjustment)	-	970	2,379
Gross revenue requirement	32,642	33,365	31,749
Less: Other single till income	(3,523)	(4,138)	(4,321)
Net revenue requirement	29,119	29,227	27,428

80. Network Rail's net revenue requirement in CP5 is, overall, £5.5bn per annum in Great Britain, and £4.9bn per annum in England & Wales and £0.6bn per annum in Scotland.

Access charges

81. In setting the framework for charges, we are seeking to improve the extent to which charges reflect costs. By ensuring that a greater proportion of Network Rail's costs are recovered through charges, we could reduce the company's reliance on public funding. And by making charges more cost reflective we can improve incentives for Network Rail to manage the provision of network capacity more efficiently, and for its customers to use that capacity efficiently. In our view, it would be beneficial for new

franchises to expose train operators to changes in charges, strengthening their incentives to work with Network Rail to reduce its costs. This would further improve value for money for funders and users.

82. There are three main types of track access charges²⁵. The first type, reflecting costs directly incurred, includes the variable usage charge (which covers infrastructure wear and tear costs) and the capacity charge (which covers Schedule 8 costs that vary with traffic). Costs directly incurred essentially cover short-run marginal costs. The second type of charge, 'mark-ups' above costs directly incurred, allow more of Network Rail's costs to be recovered in certain circumstances. The third type, fixed charges, covers Network Rail's remaining costs net of other single till income. Not all rail traffic pays every charge – for example only franchised passenger operators pay the fixed charge.
83. It is our role to set the framework within which Network Rail has responsibility for calculating its track access charges. It has undertaken a major programme of work with extensive consultation and industry engagement. In broad terms this analysis pointed to substantial increases in charges in some areas, particularly in variable usage charges for bulk traffic and capacity charges, to reflect the latest information on costs.
84. One mark-up charge already exists – for freight only lines. We are introducing a new freight specific charge (FSC) covering coal for the electricity supply industry, spent nuclear fuel and iron ore, so that the charges cover more of the costs incurred. These are the commodities that are able to bear a mark-up²⁶. The latest information on freight avoidable costs²⁷ suggested that these commodities should face a significant mark-up.
85. We also consulted on introducing a FSC for biomass, but after considering the responses to our consultation we have decided not to introduce this charge.
86. The cumulative impact of the planned changes to charges for costs directly incurred and the FSC would produce very large increases in charges, particularly for freight

²⁵ There is also a station access charge called the station long term charge.

²⁶ There are various legal requirements for a mark-up including that the charge does not price market segments off the network.

²⁷ Freight avoidable costs are the reduction in infrastructure costs that would occur long term if commercial freight traffic did not use the network.

traffic. We received strong representations, for example from the rail freight industry and its customers, on the likely impacts on businesses. We have sought to improve the extent to which charges reflect costs, and the latest evidence pointed to much higher charges, but we also need to balance our statutory duties in making decisions. We have consulted extensively and discussed our analysis with the businesses and organisations that would be affected.

87. We had previously announced caps on the average variable usage charge for freight. We have now decided to cap the increase below the level we had announced earlier, with the caps designed to make charges as cost reflective as possible. We have also capped the FSC below the level implied by our original announcement.
88. We have concluded that we will not implement the recalibrated capacity charges as part of PR13. We will instead either implement the alternative proposal put forward by freight operators (possibly applying it also to open access passenger operators and/or franchise passenger operators, having regard to their views on this), or approve capacity charge rates that have been calculated using the methodology established in CP4, uprated for inflation.
89. Network Rail is currently consulting on charter charges which, combined with the introduction of a benchmark for charter performance payments, we expect to be broadly financially neutral overall.
90. In summary, we now estimate that the impact of our determination will be that in real terms, average total freight charges will increase by around 21% on current levels by 2018-19, equivalent to 4% a year average. For commodities not affected by the FSC, the corresponding increases are 5% on current levels by 2018-19 and 1% a year on average. Increases in charges will be phased in to give businesses more time to adjust. The variable usage charge increases and the FSC will be phased in from April 2016, reaching the full capped level only in 2018-19.
91. We estimate that average total franchise passenger variable charges and open access variable charges will each increase by 1% from CP4 to CP5 in real terms. We will shortly consult on options to allow passenger open access operators greater access to the network in return for some contribution to fixed costs.

92. The actual prices paid will vary by (for example) type of vehicles and in the case of freight, commodity. Network Rail will publish detailed draft price lists in July 2013, consistent with our decisions.

Deliverability

93. We have considered the risks to this determination. We have reviewed whether the outputs can be delivered and whether our assumed levels of efficiency are achievable.
94. We assessed whether the total programme of engineering work (for maintenance, renewals and enhancements) can be delivered. Although the overall volume of work is likely to be higher than in CP4 the main risks are around the mix of work and its location.
95. On the mix of work, signalling volumes almost double compared to CP4 and the electrification programme is much bigger. The implementation of the European Rail Traffic Management System (ERTMS) raises technology and operational challenges. There are concentrations of work on the Great Western Main Line out of Paddington and on the Thameslink route, making access more difficult.
96. We have focused our work on risks to ERTMS implementation, the resourcing of the electrification work, the Great Western Main Line work and on Network Rail's programme management of many sub-projects (as in the Northern Hub work). We have noted that Network Rail is improving how it works with the supply chain.
97. The early stage of development of many enhancement projects adds a layer of uncertainty to the analysis, but overall we have concluded the work is deliverable, although strong programme and risk management will be crucial.

What does the determination mean for Network Rail?

98. There is no doubt that this settlement represents a sizeable challenge for the company. And it is right that it should.
99. But it is in everyone's interest that Network Rail is 'set up to succeed' and hence the determination includes checks and balances which are designed to give Network Rail, and the industry, flexibility to respond.
100. While the overall outputs requirements are demanding, we have provided some flexibility. For example, we have set the output for reducing disruption to passengers

for the end of the control period, so that Network Rail and the industry can decide the most sensible trajectory to reach that point, taking into account the large investment programme.

101. We have taken a different approach to civils spend and to enhancements at an early stage of development, as described above.
102. We have also carefully considered the lessons of CP4. When Network Rail tried to make efficiency savings in maintenance in CP4, it did not manage the change well in some respects. We have reduced the level of efficiency improvement required at the start of the control period for maintenance compared to Network Rail's SBP to give the company more time to plan the necessary changes and implement them effectively. Effective delivery is essential if longer term efficiency gains and service quality improvements are to be secured and locked-in for the future.
103. And, if there is a material change in the circumstances of Network Rail or in relevant financial markets, there is provision for the determination to be re-opened. This provides further protection against risk to Network Rail.
104. Network Rail is implementing changes which should put the company in a better position to meet the challenges. These include devolving more responsibility to its routes, collaborating more effectively with customers and suppliers and taking forward programmes to change the culture within the organisation.

The impact of this determination

105. Network Rail's delivery of this settlement will result in significant benefits to passengers, freight customers, train operators, taxpayers and suppliers.

Passengers

106. Passengers will benefit from the increases in capacity which will allow new services to be introduced to reduce overcrowding, from improving levels of train service reliability and requiring improvements on the worst performing services and from improvements at stations based on the ring-fenced funds made available. We expect safety to improve.
107. We will publish a wider range of data to help passengers understand railway finances and performance and passenger groups will be more involved in the development of

enhancement projects. We will monitor levels of passenger satisfaction through the National Passenger Survey and customer research.

Train operators

108. Train operators will be able to benefit from the new incentives to work with Network Rail to reduce costs and the opportunity to work with Network Rail to improve the specification and effectiveness of the enhancement programme.
109. There will also be flexibility for passenger train operators to agree joint performance improvement plans to deliver the performance outputs with Network Rail so that these can better represent local opportunities and constraints.
110. Freight operators will benefit from the continued investment in the strategic freight network and the new output for freight performance. Increases in access charges have been capped and phased, as described in the access charges section of this summary.
111. We will monitor the impact on train operators through direct feedback, the new customer satisfaction measures that Network Rail is developing, and the new 'system operator' indicators (which will measure for example how well Network Rail is using the capacity of the infrastructure).

Taxpayers

112. Taxpayers will see the railway grow in a more cost effective and sustainable way, with more transparency over what it delivers and for how much money. The improvements in performance and to the network will also facilitate economic growth and greater competitiveness.

Supply chain

113. The supply chain will benefit from the large capital programme, including the increased volumes of work on civils, and given the early stage of development of the programme there will be considerable scope for supplier involvement in scheme design. The scale and duration of the work programme will give greater confidence to invest and innovate. There will be longer term benefits through the funding for research. We have also funded Network Rail to develop CP5 projects during CP4 to avoid any 'hiatus' in orders between control periods.

Monitoring and reporting

114. We will continue to monitor Network Rail taking a 'forward looking risk based approach'. That means we assess whether Network Rail is likely to deliver its obligations, intervening where necessary to ensure the obligations are delivered, focusing on the major risks.
115. But we will be changing some aspects of our CP4 approach. We will need to expand our monitoring to include the new areas, such as the asset management outputs. And we will need to develop the new mechanisms we have put in place for assessing civils spend and early stage enhancement projects, to make sure these deliver value for money.
116. We will continue to report regularly on Network Rail's delivery, but there will be wider benefits from the extra transparency this determination will bring. We will publish more information at a greater level of geographical disaggregation (at Network Rail route level) to help local decision makers. We will also publish more detailed information to enable passengers to get a better understanding of the service they are getting (including information on 'right time' performance and the extent of use of buses instead of trains during engineering works). Passengers, business groups and operators will be more involved in the development of enhancement projects and in decision making processes such as how the ring fenced enhancement funds are spent.

The longer term

117. Many of the changes will have a longer term impact, in particular moving Network Rail to a position where it has excellent asset data so it can make well informed decisions. Network Rail and the industry in general will also benefit from the innovation fund in the Secretary of State's HLOS which should drive cost reduction and quality improvements in the future. We did not accept Network Rail's proposal for a £300m R&D fund as it was not well justified. But we do recognise the importance of research and development in reducing costs and improving service quality over the longer term. Accordingly, we will – subject to Network Rail making acceptable proposals – strengthen the financial incentives on the company to invest in R&D in a commercially-led way.
118. Our determination does not stop risk capital, such as unsupported debt, from being introduced into Network Rail in the future. Nor does it obstruct the development of

further alliances or an infrastructure concession. In the event of future industry reforms or other significant changes, we will consider any adjustments to the determination, on a case-by-case basis. So, material changes would lead us to consider re-opening the determination, whereas the impact of small changes could be handled through a subsequent financial adjustment. We are not aware of any current plans which would trigger any such reopener.

119. Network Rail's debt is forecast to rise from £30,242m at the end of 2013-14 to £40,118m by 2019, although its assets will also grow in value. The rise in debt largely reflects the funding of renewals and the large enhancement programme. We forecast that Network Rail will spend on average around £1,200m a year servicing the debt in CP5. Under reasonable assumptions debt could continue to rise in future control periods and there will need to be a debate within government and the industry about how sustainable this is.
120. We will shortly be publishing our long-term regulatory statement. This is intended to set PR13 in the context of a longer term time frame, looking at issues such as longer term financial sustainability and the further alignment of incentives to deliver even greater value for money.

Next steps

121. Table 5 shows the timetable for the remainder of PR13. The deadline for responses to this draft determination is 4 September 2013 (details of how to respond are in chapter 1). Network Rail's delivery plan will include milestones for all the enhancement projects, following a consultation.

Table 5: Timetable for the remainder of PR13

Formal review phase	
12 June 2013	We publish our draft determination.
12 July 2013	Network Rail publishes its draft price lists based on the charging framework set out in our draft determination. This will provide an opportunity for stakeholders to review and comment to Network Rail on the draft price lists (as once approved in December 2013 these are fixed for CP5 unless ORR re-opens the determination).
12 July 2013	We consult on the changes we propose to make to track access contracts and network licence provisions to implement our determination.
July 2013	We publish our draft long-term regulatory statement.

Formal review phase	
4 September 2013	Deadline for responses to our consultations on our draft determination and proposed changes to track access contracts and network licence provisions.
31 October 2013	We publish our final determination.
December 2013	Network Rail publishes draft delivery plan for consultation.
Implementation phase	
20 December 2013	Final access charges (price lists/charge schedules) produced by Network Rail are audited and approved by us.
20 December 2013	Review notices are served which start the formal implementation of PR13. The review notices set out the proposed changes to track and station access contracts and the network licence.
7 February 2014	Network Rail will then have until 7 February 2014 to object to the review notice. If it objects, then we would either issue a revised notice or make a reference to the Competition Commission.
February 2014	If Network Rail does not object, we will issue a 'notice of agreement' shortly after 7 February 2014. This will give beneficiaries to track and station access contracts (e.g. train operators) 28 days within which to give notice that they wish to terminate their access contracts, should they wish to do so.
March 2014	Assuming we issue a notice of agreement in February 2014, we would then expect to issue our review implementation notice in March. This confirms that the periodic review will be implemented on 1 April 2014.
By 31 March 2014	Network Rail publishes its delivery plan for CP5.
1 April 2014	Our PR13 determination is implemented and CP5 begins.