
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 in the mid-1990s, 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. On a much 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, and is one of the safest in Europe.
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 railway. 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, despite likely falls in coal traffic, 4% in freight volumes, is forecast for the next five years¹.
4. The governments in London and Edinburgh, as well as other funders, have shown great confidence in rail. Both freight and passenger operations contribute to wider economic, social and environmental objectives and, reflecting this, rail is a subsidised industry with current support at around £4bn a year². Over the five year period of this determination, the governments have committed £18bn. That includes investing in a major modernisation of the network where it is most needed. This will constitute the biggest ever single railway infrastructure investment programme in Britain.
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 Source: Initial Industry Plan, September 2011, as used in Network Rail's strategic business plan, for passenger growth and for freight is based on the Freight Market Study. For further information, see <http://www.networkrail.co.uk/improvements/planning-policies-and-plans/long-term-planning-process/market-studies/freight/>.

² All numbers in this summary are in 2012-13 prices, unless otherwise stated.

³ Available at <http://www.rail-reg.gov.uk/pr13/consultations/draft-determination.php>.

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, and over half a million more train services operate on the network each year compared to five years ago, 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 further (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 nearly £13bn 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, imposing regulatory targets for the first time. Improved asset management is the 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. This determination gives Network Rail substantial flexibility in the way it uses its funding to deliver its outputs. We also want the company to become more focused on developing the capability and innovation needed to sustain and improve its performance over the longer term.
13. We have carefully reviewed the responses we received to our draft determination and we reference these, and our response, in this summary and in the main document. We received over 70 responses³ to the draft determination. Specific issues raised by stakeholders have been covered in the relevant section of this document, but in this summary we briefly highlight Network Rail's views and the main themes from the other responses received.

³ Available at <http://www.rail-reg.gov.uk/pr13/consultations/draft-determination.php>.

14. We reviewed the consultation responses, focusing on where new evidence had been presented which has led us to make changes to our draft determination. We decided that although no compelling case had been made for a significant change to our overall balanced package, the evidence did require us to make a number of changes to specific elements of it.

Structure of this summary

15. This summary covers the background to our determination, our decisions and the impacts of our decisions. It:
 - (a) explains the PR13 process;
 - (b) sets out our analysis of the affordability of the governments' high level output specifications;
 - (c) describes how the PR13 determination is a balanced package in terms of required outputs, our assumptions on efficient expenditure, the incentives and financial assumptions, and 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 stakeholders;
 - (g) explains how we will monitor and report on delivery;
 - (h) summarises the main themes in the consultation responses we received and the main changes we have made;
 - (i) discusses longer term issues; and
 - (j) outlines the next steps.

The PR13 process

16. 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.
17. 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 the governments, as network grants, 'in lieu of' access charges. The company also gets income from other sources such as property. In our PR13 decisions we are assuming around 30% of revenue will be from access charges, 60% from network grant and 10% from other sources.
18. 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 2012⁴.

19. This final determination sets out our conclusions on PR13. It represents the culmination of over two years of 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 contributed. 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 website⁵.
20. Network Rail's PR13 strategic business plan (SBP) was submitted to us in January 2013⁶. 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.
21. We reviewed and assessed 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). The responses to the consultation on our draft determination have been reviewed and assessed. 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.
22. 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, many parts of the framework are common to both, as Network Rail is one company, operating across the whole of Great Britain.
23. We will implement PR13 by converting our final determination into changes to access contracts and Network Rail's network licence. We consulted⁷ on proposed changes in July 2013 following our draft determination and we will issue our 'review notices' setting out the final changes in December 2013.

⁴ Both HLOSs and SoFAs are available from <http://www.rail-reg.gov.uk/pr13/Publications/key-publications-by-stakeholders.php>.

⁵ See <http://www.rail-reg.gov.uk/pr13/publications/consultants-reports.php>.

⁶ *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/>.

⁷ *Consultation on implementing PR13*, July 2013, available at <http://www.rail-reg.gov.uk/pr13/consultations/pr13-implementation.php>.

Affordability

24. 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. In our draft determination, we said that the cost of the Scottish Ministers' specification was slightly above the funds available while the Secretary of State's was slightly below, but at that stage we expected both specifications to be affordable by the time of our final determination.
25. Our analysis shows that the assumptions included for other parts of the industry (e.g. franchised train operators), are reasonable. Since the draft determination we have received further information from Transport Scotland on the likely net public costs of franchising which has allowed us to re-assess the risks around the SoFA calculations made by the Scottish Ministers, and this has increased the level of headroom for Network Rail funding.
26. However, since the draft determination we have increased the amount we have assumed Network Rail is going to spend on renewals and enhancements, and the cost of financing debt will be higher than we assumed – this affects both England & Wales and Scotland. We looked carefully at the impact of these changes on Network Rail's required revenue and on the impact on financial sustainability through the debt to RAB⁸ ratio.
27. The affordability position depends on the inflation assumptions used and we have tested the calculation using both the original assumptions from the HLOSs and more recent forecasts, and we have concluded both HLOSs are affordable.
28. We said in the draft determination that, if it appears there will be a surplus at the time of the final determination, we would agree with the relevant government how this should be treated. Depending on the inflation assumptions used, the overall affordability position can be marginal and there can be small deficits in some years. Hence we do not feel able to conclude that there is a material surplus for either England & Wales or Scotland.

A balanced package

29. Our statutory duties are mostly set out in section 4 of the Act (see Annex K). 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.
30. All our decisions on the overall PR13 settlement are made as part of a 'balanced package' for CP5. By balanced package, we mean one which considers the outputs to be delivered, the costs, the incentives, the risks and the safety requirements. The package should be considered and judged as a whole.

⁸ The RAB is Network Rail's regulatory asset base.

31. 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. it is sustainable. Furthermore, it incentivises Network Rail to efficiently manage costs it can control and provides appropriate protections against risk. We have made specific provisions to provide protections against certain risks, for example the new civils adjustment mechanism. We have also made some specific changes from our draft determination to take account of the evidence from consultation responses and ensure an appropriate balance, for example by increasing assumed spend on track renewals.
32. We have also taken into account the Railways Infrastructure (Access and Management) Regulations 2005⁹ which set out the principles we must follow in establishing the framework in which Network Rail sets access charges.
33. The starting point for the package is the outputs that we are requiring the company to deliver.

Regulated outputs

34. We set outputs in the areas that matter most to passengers, freight customers and the industry.
35. Network Rail must continue to meet its legal safety obligations, improving safety where reasonably practicable. This determination makes specific provision to address significant safety risks. There will be extra funding to 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, and more funding for civils assets to improve their condition and to reduce the risk from failures of earthworks, bridges and other structures. Maintenance efficiency savings will be phased in to give Network Rail more time to introduce new ways of working.
36. 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.
37. 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

⁹ 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>.

(as measured using PPM¹⁰), compared to 90.7% today. It will also reduce disruption to passengers (by 8%) and freight customers (by 17%) from engineering works over the control period, despite the major enhancements programme.

38. There will be a renewed focus on improving the worst performing services, with the performance for all but two franchised operators in England & Wales to reach a minimum of 90% of trains on time by 2019. Two long distance operators, Virgin Trains and East Coast, will have dual PPM and CaSL¹¹ targets for 2019, because customers on these operators' routes are particularly affected by long delays or cancellations. The PPM minimum will be 88% for both operators with the maximum CaSL set at 2.9% for Virgin Trains and 4.2% for East Coast – these combinations are designed to be equivalent to achieving 90% PPM. First Great Western's 90% PPM minimum includes both its long distance and commuter services, but we are also setting a separate 88% PPM minimum for its long distance services.
39. Setting these targets 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 work together to set the 'trajectory' to reach the 2019 outputs, using the industry led joint performance improvement plans (JPIPs) process. We will intervene in certain circumstances, for example if an operator's PPM falls more than two percentage points below its agreed PPM output (this is described further in chapter 23).
40. Our PR08 settlement (which covers control period 4, CP4)¹² was based on 90% PPM being reached for all operators, with specific funding to achieve this; but this target has not been achieved. Through setting new requirements for CP5, we have reaffirmed the importance of these operator level targets.
41. We have 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, to ensure the longer term sustainability of its assets and deliver its outputs in CP5 and beyond.
42. 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 programme¹³ 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

¹⁰ 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).

¹¹ CaSL (Cancellations and Significant Lateness) measures passenger trains which are either cancelled (including those cancelled en route), miss one or more scheduled stops, or arrive at their scheduled destination more than 30 minutes late.

¹² CP4 runs from 1 April 2009 to 31 March 2014.

¹³ ORBIS stands for 'Offering Rail Better Information Services'.

CP4, the pace needs to quicken to meet the challenges of CP5 and beyond. We will strengthen our focus on this area.

43. In addition to the regulated outputs we will also be expecting Network Rail to improve its approach to the environment, both to reduce its own impact on the environment and to improve 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 submitted a revised climate change resilience plan for one route in its response to the draft determination consultation, and will publish plans for all the other routes by the end of September 2014. We will review these plans and monitor progress against the milestones for each route.
44. After a careful assessment of the consultation responses and the evidence presented, we have made four main changes to the outputs we set in the draft determination. We have:
 - (a) increased funding by £32m to reduce risk at level crossings, in addition to the funding in the Secretary of State's HLOS;
 - (b) reduced the required level of PPM in England & Wales for the first three years of the control period, for example from 92.2% to 91.9% in 2014-15, while maintaining the end CP5 requirement of 92.5%. This reduction reflects recent performance being below forecast, affecting what can be realistically delivered in the early years of CP5;
 - (c) changed the way the end CP5 requirement for Virgin Trains and East Coast is expressed, to a combined PPM and CaSL target, and added a minimum requirement for First Great Western long distance services; and
 - (d) reduced the amount by which disruption to passengers and freight from engineering works must fall by the end of CP5, reflecting the scale of challenge from the very large improvement programme.
45. We will be monitoring indicators such as asset condition and asset performance, that give us early warning of possible problems in the future, and more of this monitoring will be at the Network Rail route level which will make it clear how well different parts of the network are performing. We will also monitor progress on enablers, which measure how Network Rail is building its long term capability in areas such as managing capital programmes. All data on indicators and enablers will be published and we will comment on trends in our Network Rail Monitor.
46. The crucial difference in terms of regulation between outputs and enablers / indicators is that if Network Rail is likely to fail to deliver, or fails to deliver, an output we would consider whether this amounts to a licence breach and we may take enforcement action against the company (which is why outputs are often referred to as 'regulated outputs'). A failure to deliver either an enabler or an indicator would not in itself be

considered as a potential licence breach. However, either may indicate trends which raise concern about Network Rail's likely future compliance with an output that we may want to take licence enforcement action to address.

47. Table 1 provides a brief summary of the outputs we have set (a full list of outputs, indicators and enablers is in chapter 3).

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, except Virgin Trains which has a combined target of 88% PPM and 2.9% CaSL and East Coast which has a combined target of 88% PPM and 4.2% CaSL. First Great Western will have a minimum of 88% PPM for its long distance services. <hr/> <ul style="list-style-type: none"> • Annual target for the percentage of trains cancelled or very late in England & Wales (measured by CaSL), with no more than 2.2% in this category by March 2019. <hr/> <ul style="list-style-type: none"> • Annual target of 92.5% of freight trains on time (measured by the Freight Delivery Metric¹⁴).
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. Includes funding for initial ETCS¹⁵ cab fitment.
Safety	<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 £99m ring-fenced fund¹⁶. This fund combines £67m from the DfT HLOS and £32m of further funding.
Disruption to passengers and freight caused by engineering works	<ul style="list-style-type: none"> • Disruption reduced by 8% for passengers and 17% for freight in 2019 compared to 2014, supported by an extension of funding for '7 day railway' projects.
Network capability	<ul style="list-style-type: none"> • Track mileage and layout, line speed, gauge, route availability, electrification at least maintained, and improved where there are enhancement works.

¹⁴ Freight Delivery Metric (FDM) measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time, covering delays for which Network Rail is responsible.

¹⁵ ETCS is the agreed future train control and command system for the European main line network. It forms part of the European Rail Traffic Management System (ERTMS).

¹⁶ Note that safety is not a devolved responsibility. All safety related outputs, indicators and enablers therefore apply to England & Wales and Scotland.

Area	Outputs
Stations	<ul style="list-style-type: none"> • Average condition maintained.
Asset management	<ul style="list-style-type: none"> • Asset management capability excellence achieved.
	<ul style="list-style-type: none"> • Asset data quality standards for all asset types.
	<ul style="list-style-type: none"> • Milestones for 'ORBIS' data improvement project.

Efficient expenditure

48. We have reviewed Network Rail's SBP submission and collected our own evidence. In a number of areas Network Rail's submission was a considerable improvement over PR08, but weaknesses remain. Some documents were submitted late and with significant inconsistencies.
49. 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 assumptions.
50. A high level summary of our determination is shown in Table 2, with a comparison to our PR08 determination and Network Rail's SBP. The first row looks at total expenditure. The second row focuses on Network Rail's day-to-day costs¹⁷ (that is, it excludes items such as electricity costs that it cannot control and enhancement costs, which are not part of day-to-day costs).
51. We have shown two columns for this final determination (FD). For the final determination the costs of ETCS cab fitment work (£194m) are included in enhancements whereas in the SBP and the draft determination (DD) they were included in renewals. To make the final determination numbers more directly comparable we have shown the spend on ETCS cab fitment in renewals in the 'FD comparable to SBP' column.
52. Overall, our analysis shows that the day-to-day costs in CP5 should be £1,827m (£1,995m in our draft determination) less than in PR08 and £1,740m (£1,907m in our draft determination) 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 around 30%.
53. Network Rail proposed efficiencies of 13.8% in its support, operations, maintenance and renewals costs, but our analysis shows that 19.4% efficiencies could be achieved.

¹⁷ Support, operations, maintenance and renewals, see later text for definitions.

54. The increases in the day-to-day expenditure line in our final determination compared to our draft determination are driven by extra assumed spend on track and signalling renewals and information management, offsetting reductions in the assumed spend on certain specialist road-rail vehicles.
55. The amount Network Rail is funded for (the net revenue requirement) is £1,762m less than the company proposed¹⁸. This reflects our view that Network Rail needs to spend less money overall and can raise debt at lower interest rates than the company assumed.
56. Although debt levels will rise, this will be manageable for the company as the value of Network Rail's assets (the RAB) will also rise. The debt to RAB ratio will increase but at these levels the company would, everything else being equal, have an investment grade credit rating similar to other utility companies. The debt level will be £2,290m (in nominal prices) higher than we assumed in the draft determination, because compared to the draft determination opening CP5 debt will be higher, capital spend is higher, there is a lower financial sustainability adjustment and market interest rates are higher.

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

£m (2012-13 prices)	PR08	SBP	DD (comparable to SBP)	FD ¹⁹	FD
Total expenditure	35,721	40,095	37,869	38,293	38,293
'Day to day' expenditure: support, operations, maintenance and renewals expenditure	23,380	23,293	21,385	21,553	21,360
Net revenue requirement	29,119	29,227	27,428	27,465	27,465
Average net debt to RAB	62.7%	68.8%	68.2%	69.8%	69.8%

57. Although we calculate a level of assumed expenditure we do not decide 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.
58. 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 and insurance. In its SBP, Network Rail said it would need to spend

¹⁸ The revenue requirement is different from the assumed expenditure because the cost of capital spend is spread over time and the revenue requirement also includes costs such as debt interest.

¹⁹ The difference between the 'FD comparable to SBP' and 'FD' columns is the classification of ETCS cab fitment expenditure. In the latter it is classified as enhancement instead of renewals, hence the fall from £21,553m to £21,360m in row 2.

£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.

59. We have assumed that it needs to spend £2,119m (6% of total expenditure), £113m 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 19.7% efficiency savings in core support costs compared to Network Rail's 12.3%²⁰.
60. Compared to our draft determination we have only made a small change in support costs, increasing the assumed level by £26m.
61. **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 was well founded and we broadly agree with its conclusions.
62. We have assumed spend is £59m lower at £1,968m (5% of total expenditure). Network Rail can make efficiencies of 17% compared to the 13% in its SBP, with the difference mainly reflecting efficiency opportunities which cut across all spend areas and our view of achievable efficiencies in non-signaller costs.
63. We have not made any changes in our assumptions on operations costs compared to the draft determination.
64. **Traction electricity costs** are the costs Network Rail incurs in buying electricity. These costs dropped significantly from the SBP to the draft determination, by £524m, as forecast industry electricity prices fell. Since the draft determination there has been a further fall and we have now reduced the assumed level of funding by another £25m, to £549m, compared to the SBP.
65. **Industry costs** cover items such as Network Rail's contribution to the British Transport Police. We made a small reduction of £19m in Network Rail's assumed spend in this area, compared to the SBP (£32m less than our draft determination).
66. Table 3 shows the renewals and enhancement costs with and without the change to the classification of ETCS cab fitment costs, as described above. The 'FD comparable' numbers also adjust for the way maintenance and renewal spend is classified²¹.

²⁰ Efficiency is measured by comparing the last year of CP5 to a restated 2013-14 base year.

²¹ 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 reactive maintenance 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 £5,166m in CP5 on

67. Good maintenance of the railway is crucial for safety and high performance. **Maintenance costs** 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 13.8%²².
68. We have assumed that Network Rail needs to spend slightly less, £4,645m (12.1% of total expenditure) on maintenance in CP5, using the same definitions as the SBP. We have decided that efficiencies of 16.4% 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.
69. We assume Network Rail will deliver the volumes of maintenance work that it assumed in its SBP.
70. 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.
71. In the draft determination we extended the definition of maintenance to include reactive maintenance of £507m, which had previously been treated as renewals. Our revised estimate of this change is £521m. This increase of £14m is the only change we have made to maintenance spend compared to the draft determination.
72. **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 15.8%²³ by the final year of CP5.
73. We have assumed that Network Rail needs to spend £12,822m (33.5% of total expenditure) on renewals in CP5, using the same accounting classifications as the SBP²⁴ (£1,543m 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.

maintenance after this change. Where possible, we have presented numbers on a comparable basis to make comparisons easier.

²² 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.

²³ This is our adjusted number to show clearer comparisons.

²⁴ After adjusting for the reactive maintenance changes and ETCS cab fitment this is £12,107m.

74. 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 management and the research and development (R&D) fund.
75. We have assumed that efficiencies of 20.0% 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.
76. 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 improve the asset base, 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 £2,368m) based on Network Rail's view of required volumes of work and our view of efficient costs. We have funded the volumes defined by Network Rail in the first two years of the control period and we expect to see this work carried out. The volumes for the remaining three years 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.
77. We have increased assumed expenditure in three key areas compared to the draft determination, with rises of £104m for track renewals, £21m for signalling renewals and £66m for information management and ORBIS. But we have made a reduction of £61m in the allowance of £71m we previously made for a new design of excavator to replace the existing fleet, reflecting the fact that the project is not well enough developed to implement – the £10m will cover further development work.
78. **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 many of our key cities, increased capacity for commuter travel into major urban areas and the improvement of rail links to 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.
79. Network Rail said it would need to spend £12,388m, compared to £11,294m in CP4. About 30% of this was for electrification, 25% was for Thameslink and Crossrail and 10% was allocated funds to achieve specific purposes such as improving the network for freight. In our draft determination we 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 expenditure to allow for some extra costs that were not

included in the SBP, for example increased compensation payments to train operators for the disruption caused by the works, which brought the total to £12.2bn.

80. But since the draft determination we have included nearly £600m of further assumed expenditure for enhancements as set out in paragraph 82 below. Total expenditure on enhancements in Great Britain is now assumed to be £12.8bn, of which £11.4bn is for England & Wales and £1.4bn for Scotland.
81. Around £7bn of projects are at an early stage of development and hence the costs are uncertain. Fixing this cost now could 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 (RDG). We have made a provisional cost assessment now but we will finalise the total efficient cost progressively by March 2015 as project plans become more mature.
82. The main changes for enhancements compared to the draft determination are:
 - (a) an increase of £312m to fund depots and stabling facilities. This is related to the England & Wales enhancement programme;
 - (b) an increase of £126m to rollover unspent money in CP4 to complete projects in CP5 and provide additional funding to complete 7-day railway initiatives;
 - (c) an increase of £32m for level crossing risk reduction;
 - (d) a reduction of £59m to reflect revised cost estimates for projects in Scotland;
 - (e) a reduction of £25m for Schedule 4 costs; and
 - (f) an increase of £194m from the transfer of ETCS cab fitment from renewals to enhancements expenditure.
83. 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), Network Rail's SBP and our draft determination.

Table 3: Summary of our CP5 efficient expenditure assumptions

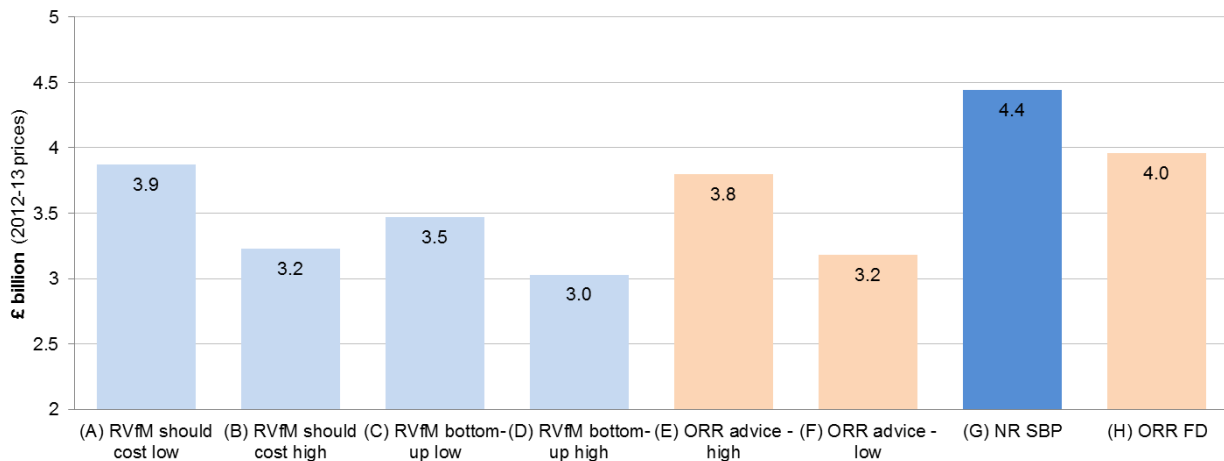
£m (2012-13 prices)	PR08	CP4 (adjusted)	SBP	DD (comparable to SBP)	FD ²⁵	FD
Support	4,113	2,740	2,232	2,093	2,119	2,119
Operations		2,239	2,027	1,968	1,968	1,968
Traction electricity, industry costs and rates	2,175	2,349	3,701	3,114	3,056	3,056
Maintenance	6,126	5,553	4,669	4,645	4,645	5,166
Schedule 4	870	875	712	1,131	1,058	1,058
Total operating expenditure	13,284	13,756	13,341	12,950	12,846	13,367
Renewals	13,141	12,686	14,365	12,681	12,822	12,107
Enhancements	9,296	11,294	12,388	12,239	12,625	12,818
Total capital expenditure	22,437	23,980	26,754	24,920	25,447	24,925
Total expenditure	35,721	37,735	40,095	37,869	38,293	38,293

84. In 2010, we co-sponsored with DfT the Rail Value for Money (RVfM) study, led by Sir Roy McNulty, which reported in May 2011²⁶. 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.
85. 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 ('ORR advice' in Figure 1) 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.

²⁵ This comparability adjustment to the FD column reflects the combined effect of the adjustments in terms of the classification of reactive maintenance and ETCS cab fitment.

²⁶ *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>.

Figure 1: RVfM expenditure (support, operations, maintenance and renewals) comparisons 2018-19 (Great Britain)



86. 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 specified in the HLOSs or longer term sustainability issues (such as the extra volumes of civils work we now consider need to be delivered). The RVfM study also said that achieving its high estimates for the industry as a whole depended on wide ranging changes across the industry. We are slightly above our advice to ministers range, reflecting the HLOSs and the better information we now have.
87. 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. If Network Rail delivers on its CP5 efficiencies then the company’s efficiency will have improved by around 50% in the fifteen years from 2004 to 2019.
88. 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 through the new franchising programme, could make by the end of CP5.

Incentives

Whole industry incentives

89. We want to provide the incentives for the industry to work together to get the right work done and reduce costs.
90. To this end we have taken a new approach for those enhancement projects where the scope, specification and efficient cost are currently uncertain, allowing the decision on the level of efficient costs to be deferred, with a backstop date of March 2015. This will give Network Rail more time to work with train operators, passengers, freight

customers and business groups to get the scope and costs of the projects right, and ensure they are focused on maximising benefits.

91. There is opportunity for the company to reduce enhancement 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 enhancement programme at the aggregate level by March 2015 to ensure costs are controlled. Network Rail can then 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.
92. 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 Scotland and the nine England & Wales operating routes and this new mechanism, called REBS²⁷, 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, it intends to allow train operators to join REBS (but this is unlikely to apply to negotiated direct awards with existing franchisees). Transport Scotland also intends to allow its new franchises to join REBS.
93. We see REBS as an important option for train operators, but we are aware that many operators may prefer to enter into alliances or other commercial arrangements on a bilateral basis with Network Rail, instead of joining REBS. We support such commercially driven arrangements provided they are transparent and non-discriminatory.
94. Under the existing volume incentive Network Rail receives money if actual growth, as measured by passenger and freight train miles, passenger revenues and freight gross tonne miles, is above a national baseline growth level. We are strengthening this mechanism by adding a downside – Network Rail loses money if growth is below the baseline, and also by disaggregating the baseline to route level. This will give Network Rail more incentive to look for ways to increase passenger and freight travel by working more closely with train operators. The company will need to demonstrate how its decisions take the incentive into account, to improve transparency.

²⁷ Route-level efficiency benefit sharing.

95. 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.
96. We have not made any material changes in the area of incentives compared to the draft determination.

Incentives to reduce disruption to customers

97. We have updated the passenger Schedule 4 and Schedule 8 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.
98. 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 increase in passenger numbers. 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 passengers, which supports the output requirement to reduce disruption.
99. The amounts to be paid for a given level of disruption are largely fixed in advance. Although this approach means that the compensation payment does not perfectly match the costs in every case, it is more efficient than compensation payments that have to be individually negotiated on the basis of the facts in each case.
100. We will set the benchmarks at levels such that overall payments are zero provided that Network Rail and train operators perform in line with expectations during CP5. The Schedule 8 regime reduces the risk that potential franchised operators face when they bid for franchises. This ultimately feeds through to taxpayers through lower franchise costs.
101. Schedule 8 payments have a different purpose from the passenger compensation schemes, such as delay repay, which compensate passengers when trains are delayed. Schedule 8 payments compensate train operators for the impact of poor performance on their long term revenue. Passenger compensation schemes protect passengers when they do not get the service they pay for. There is no reason why the two schemes should pay out the same amount. In recent years Schedule 8 payments by Network Rail have been higher than delay repay payments, which reflects the fact that Network Rail has not met its performance targets. If Network Rail meets its targets Schedule 8 payments would be zero, but some delay repay compensation could still be paid if an individual train is delayed and passengers are inconvenienced.

102. Data is already published on Schedule 4 and 8 payments to train operators disaggregated at the Network Rail operating route level in the regulatory financial statements²⁸ and we will also be publishing this through our data portal to improve transparency.
103. As with the Schedule 8 regime for franchised and open access passenger operators, we have set the freight and charter operator Schedule 8 benchmarks such that overall payments are zero provided that Network Rail and train operators perform in line with expectations during CP5. We have set the payment rates so they reflect our best available evidence. The freight Schedule 4 payment rates will remain the same as in CP4, but due to the increase in engineering activity expected to affect freight operators in CP5, the funding requirement for freight Schedule 4 has increased.
104. The main changes to passenger Schedules 4 and 8 since the draft determination are to adjust Schedule 8 payment rates downwards for commuter journeys to London and to incorporate the latest evidence on how passengers respond to delays. This reduction in payment rates also has the knock on effect of reducing Schedule 4 payments.
105. The only changes we have made to the freight Schedules 4 and 8 regimes since the draft determination have been as a result of better data or as a result of changes to passenger Schedule 8 payment rates.

Financial assumptions

106. 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 low and are expected to 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.
107. 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 need 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 costs²⁹, efficiently manage risk and provides important protections to the public purse. The limit on the ratio of debt to assets at the GB level will be 75% for CP5.

²⁸ These are available at <http://www.networkrail.co.uk/browseDirectory.aspx?dir=%5CRegulatory%20Documents%5CRegulatory%20Compliance%20and%20Reporting%5CRegulatory%20Accounts&root&cd=7>.

²⁹ 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.

108. Table 4 below describes how we arrive at Network Rail's revenue requirement, showing how we combine our expenditure and financial assumptions.
109. Operating costs³⁰ 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'³¹ as the company is not funded by equity. We calculate the cost of capital as it is still important to identify Network Rail's cost of capital to encourage Network Rail to invest efficiently and ensure a level playing field (between Network Rail and potential competitors) for the delivery of enhancements. Following an analysis of recent decisions in other regulated industries, market rates and the particular risks facing Network Rail, we are setting the cost of capital at 4.31%³².
110. The adjusted allowed return of £6,320m (the forecast actual cost of finance including the FIM fee) in our determination is £2,056m lower than Network Rail's SBP. This is primarily due to our assumption of a lower cost of nominal debt and a lower FIM fee³³, although it is higher than in our draft determination because, for example, forecast opening CP5 debt has risen.
111. 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 £92m less income from property than we assumed in the draft determination, reflecting new evidence we received from Network Rail.

³⁰ Operating costs are support, operations, traction electricity/industry costs and maintenance.

³¹ The real equity surplus is the difference between the allowed return and the adjusted allowed return.

³² The cost of capital for the investment framework is 4.93% on an annual basis.

³³ 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.

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

£m (2012-13 prices)	PR08	SBP	DD	FD
Operating costs (including Sch 4 and 8)	13,284	13,341	13,456	13,367
Amortisation (based on long-run steady state renewals)	8,903	10,540	9,794	9,909
Tax allowance	-	-	18	6
Release of opex memorandum account ³⁴	-	138	115	172
Gross revenue requirement before cost of capital	22,187	24,019	23,384	23,455
Allowed return (real cost of capital)	10,455	13,092	11,267	11,337
Less: Real equity surplus	-	(4,716)	(5,280)	(5,018)
Adjusted allowed return (efficient financing costs)	10,455	8,376	5,987	6,320
Gross revenue requirement pre-sustainability adjustments	32,642	32,395	29,371	29,775
Additional amortisation (financial sustainability adjustment)	-	970	2,379	2,000
Gross revenue requirement	32,642	33,365	31,749	31,775
Less: Other single till income	(3,523)	(4,138)	(4,321)	(4,310)
Net revenue requirement	29,119	29,227	27,428	27,465

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

113. The main changes compared to the draft determination are:

- (a) an increase in amortisation (based on a long run steady state level of renewals) primarily because of a revised estimate of the efficiency of track renewals;
- (b) a higher allowed return because the RAB has increased compared to our draft determination as capital expenditure has increased;
- (c) a reduction in the real equity surplus as our forecast of Network Rail's efficient financing costs (adjusted allowed return) has increased since our draft determination because of higher forecast opening CP5 debt and higher assumed interest rates, partly offset by the effect of more index-linked debt which reduces Network Rail's costs in CP5; and
- (d) a reduction in the level of additional amortisation (financial sustainability adjustment) as we have finalised our approach for CP5.

³⁴ The income from certain sources, e.g. the volume incentive, is paid into this account and paid to Network Rail over time.

114. Overall, the net revenue requirement for Great Britain has increased by £37m. This is largely because the adjusted allowed return has increased by £333m due to an increase in our forecast of Network Rail's efficient financing costs. This is offset by a net reduction in other costs of £296m, of which the largest change is the reduction in total amortisation of £264m, largely due to a change to the calculation of the financial sustainability adjustment. We have also balanced the impact of higher assumed spend by allowing a limited increase in debt.

Access charges

115. As part of PR13 we set the framework for access charges, with Network Rail having the responsibility for setting the specific charges. We are seeking to improve the extent to which charges reflect costs and in so doing we can improve the 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, exposing franchised train operators to changes in charges at a periodic review³⁵ would strengthen their incentives to work with Network Rail to reduce its costs. This would further improve value for money for funders and users.
116. There are two main types of track access charges³⁶. 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 when the market can bear it³⁷, and include the current freight only line charge and fixed charges. Not all rail traffic pays every charge – for example only franchised passenger operators pay the fixed charge.
117. It is our role to set the framework within which Network Rail has responsibility for calculating its track access charges. It undertook 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.
118. 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-up. The latest information on freight

³⁵ At present, franchised operators are largely protected from any changes.

³⁶ There is also a station access charge called the station long term charge.

³⁷ There are various legal requirements for a mark-up including that the charge does not price market segments off the network.

avoidable costs³⁸ suggested that these commodities should face a significant mark-up.

119. Since the publication of the draft determination there has been further very helpful discussion with the industry on the capacity charge, including input from RDG, which we have drawn on to reach our decisions.
120. We have decided that franchised passenger operators' existing services will pay CP5 capacity charge rates (but because existing services are protected from any changes under the franchise agreements, they effectively pay CP4 rates), and additional services will pay the CP5 rates. Existing open access passenger operators will pay CP4 rates on existing services and CP5 rates on new services. Any new entrant open access operators will pay CP4 rates on services below a threshold (set to provide broadly equivalent treatment with existing open access operators) and CP5 rates above the threshold.
121. We are supporting improvements in energy efficiency and reductions in CO₂ emissions by refining the traction electricity charging regime to encourage further on-train metering of electricity. We are also funding some further fitment of meters. And we are introducing financial incentives for Network Rail to manage transmission losses better.
122. In summary, we 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 on average. For commodities not affected by the FSC, the corresponding increases are 6% 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. These numbers are largely unchanged from our draft determination.
123. Average total franchised passenger variable charges will increase by 36% from CP4 to CP5 in real terms, as a consequence of the substantial increase in the capacity charge. In our draft determination, the equivalent figure was 1% as we were consulting on retaining the CP4 capacity charge rates. Franchised operators are largely protected from this increase under the terms of their franchise agreements. For open access operators, due to the measures we are taking to mitigate the impacts of increases in the capacity charge, average variable charges will stay approximately constant from CP4 to CP5 in real terms.
124. Our conclusions on charges and Schedule 8 payments for charter operators will improve consistency between charter track access contracts and those of other passenger and freight operators, and ensure that the prices charter services will pay

³⁸ Freight avoidable costs are the reduction in infrastructure costs that would occur long term if commercial freight traffic did not use the network.

to Network Rail are more reflective of cost. On average, our analysis shows that this package will result in charter operators being better off financially than they have been in CP4.

125. The actual prices paid by each operator will vary by (for example) type of vehicles and in the case of freight, commodity. Network Rail published detailed draft price lists in July 2013, consistent with our draft determination and will now publish final charges in December 2013 consistent with this final determination.
126. Fixed charges in CP5 will be £2,379m compared to £5,279m in CP4. Fixed charges cover Network Rail's remaining costs after variable charges, other single till income and network grants. The reduction of nearly £3bn reflects two main factors, a lower net revenue requirement and higher other single till income, with a smaller impact from higher capacity charges. For accounting reasons, the governments pay direct grant (called 'network grant') to Network Rail in lieu of fixed track access charges, and the total network grant in CP5 will be £19,586m compared to £20,186m in CP4.
127. Shortly after publication of the draft determination we consulted on options to allow open access passenger operators greater access to the network in return for some contribution to fixed costs. There was little support for the options from open access operators and some issues of concern to funders. Reflecting the responses, we have decided not to implement any of the options so there will be no significant changes to the open access regime. However, we will explore possible improvements to the way the NPA³⁹ test works, in response to suggestions from open access operators.

Deliverability

128. We have considered the risks to this overall determination. We have reviewed whether the outputs can be delivered and whether our assumed levels of efficiency are achievable. A number of those who responded to our draft determination questioned both whether Network Rail could deliver the settlement and our role in monitoring and enforcing delivery. We have taken steps in both areas to strengthen the robustness of the settlement.
129. We also 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.
130. On the mix of work, signalling volumes will almost double compared to CP4 and the electrification programme is much bigger. The implementation of ERTMS⁴⁰ raises

³⁹ The NPA ('not primarily abstractive') test is a form of economic evaluation, which ensures that a proposed new open access service will generate an acceptable level of new-to-rail business, rather than merely taking business from existing operators.

⁴⁰ European Rail Traffic Management System.

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.

131. 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.
132. 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. Network Rail will update its deliverability assessment on a regular basis.

What does the determination mean for Network Rail?

133. There is no doubt that this settlement represents a sizeable challenge for the company. And it is right that it should. But it is in everyone's interest that Network Rail delivers this challenging determination and hence it includes checks and balances, which are designed to give Network Rail, and the industry, flexibility to respond.
134. While the overall output 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.
135. We have taken a different approach to civils spend and to enhancements at an early stage of development, reducing risks to the company, as described above.
136. We have also carefully considered the lessons of CP4. When Network Rail first 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.
137. Compared to the draft determination we have increased Network Rail's assumed expenditure on track renewals and information management and given the company more freedom to 'spend to save', which further increases the company's ability to deliver the settlement. We have provided extra funding for R&D compared to CP4. We have also clarified and simplified the asset management outputs the company must deliver.

138. If there has been or is likely to be 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.
139. Network Rail is implementing changes that 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

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

Passengers and freight customers

141. Passengers will benefit from the increases in capacity which will allow new services to be introduced, from improving levels of train service reliability including improvements on the worst performing services, and from improvements at stations based on the ring-fenced funds made available. We expect safety to improve, particularly at level crossings.
142. We will publish a wider range of data to help passengers better 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.
143. Freight customers will benefit from extra capacity, better performance, reduced disruption and the Strategic Freight Network.

Train operators

144. 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. The improvements in capacity and performance will help drive further revenue growth.
145. 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 in, as described in the access charges section of this summary.
146. The changes we have made to the draft determination, providing over £100m more for track renewals and £126m of rollover funding for projects, including further funding for 7-day railway schemes, will provide benefits to operators across the country. Funding is provided for ETCS cab fitment for 'first of class' design and for wider fitment for non-franchised operators, including driver training. Network Rail's planned expenditure on renewal of depot plant has been maintained, to reflect operator priorities.

147. 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.

Taxpayers

148. 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. Overall, we have balanced the affordability of the package with sustainability and this has provided the basis for the industry to move forward in difficult economic times. This is good news for taxpayers and customers.
149. The improvements in performance and to the network will also facilitate economic growth and greater competitiveness.

Supply chain

150. The supply chain will benefit from the large capital programme, including the increased volumes of work on civils and signalling, 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 the remainder of CP4 to avoid any 'hiatus' in orders between control periods, with Network Rail planning to spend £65m on developing new CP5 projects in 2013-14. Work has already started on the delivery of a number of new HLOS projects, including East West Rail.

Monitoring and reporting

151. 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.
152. We will be changing some aspects of our CP4 approach. We will need to expand our monitoring to include the new areas introduced by this determination, such as the asset management outputs. And we will need to develop the new mechanisms we are putting in place for assessing civils spend and early stage enhancement projects, to make sure these deliver value for money.
153. We are also working jointly with Network Rail on an improved financial monitoring process for the next control period. There have been strong differences of view between ourselves and Network Rail on the extent to which the company has financially performed in CP4. These have been caused by factors such as there being no shared view on the most appropriate approach to measuring financial performance, and how Network Rail provides evidence supporting its analysis given issues with data quality. We intend to put this on a firmer footing for CP5; the new

process will be explained and published in our revised regulatory accounting guidelines by March 2014, with a draft by 1 February 2014. The new process is intended to be more predictable and transparent, with a plain English guide accompanying the accounting guidelines. There will be improvements in financial reporting for Scotland.

154. 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 be encouraging the industry to publish more detailed information to enable passengers to get a better understanding of the service they are getting (including more disaggregated 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.

Summary of consultation responses and changes to our draft determination

155. Apart from Network Rail's response, there was general support for the overall draft determination package including its benefits for passengers and freight customers, and strong support for certain aspects, such as the increased focus on improving Network Rail's asset management.
156. Network Rail said that '...taken in the round, the Draft Determination is not sufficiently balanced and is based on unrealistic assumptions'. The company focused on six main concerns:
- (a) our proposed trajectory to improve **performance** in England & Wales as measured by PPM was not realistic;
 - (b) the assumed level of spend on **track and signalling renewals** was too low;
 - (c) we had set the level of spend on **information management** too low;
 - (d) our assumptions on the amount of money Network Rail could generate from **property** were too aggressive;
 - (e) our assumed **cost of financing** for Network Rail was too low; and
 - (f) overall, the proposed **regulatory regime** would be too intrusive and complicated.
157. The company provided evidence which has led us to making changes in all six areas, although the evidence did not support changes on the scale the company proposed.
158. Recognising the evidence that the level of PPM is now likely to be lower at March 2014 (the exit point from CP4) than we assumed in our draft determination, we have reduced the required level of PPM in England & Wales for the first three years of the

control period, while maintaining the 92.5% output for 2019. This gives the company more time to deliver the improvements required to meet the targets.

159. We have increased assumed spend levels for track, signalling and information management by £191m. Network Rail sought another £759m beyond this, but did not make a strong case. Similarly, we accepted that our property income forecast was £92m too high, but not the £251m the company claimed.
160. We have increased the assumed level of efficient financing costs by £333m, for example to reflect the latest information on market rates. This is £356m less than the £689m in additional funds that Network Rail requested in its draft determination response.
161. We disagree with Network Rail's arguments on the regulatory regime that we have set too many outputs and indicators. Network Rail said there would be 3,700 measures under regulatory scrutiny. In fact all these measures are ones which any well managed railway infrastructure company would want to collect and analyse. The actual number of outputs (i.e. regulatory obligations which we will hold the company to account for) for CP5 is less than a hundred, to cover a total spend of over £38bn. Our monitoring approach is based on lessons learnt from CP4 and we are not changing the scope of the plans set out in the draft determination. But we have stressed to the company that this does not necessarily reflect our longer term approach – it could be changed provided Network Rail's delivery record improves sufficiently to warrant this.
162. While we are not changing our approach on outputs, we have reflected on comments made by Network Rail and train operators about how to encourage normal commercial relationships between them. We accept that we should give the company more freedom to manage how it delivers for customers and so we have made a number of detailed changes – for example, to provide a stronger incentive for it to spend to save.
163. Other stakeholders raised issues or asked questions about our draft determination in terms of:
 - (a) overall **deliverability** – whether it is a deliverable package;
 - (b) the impact on **safety** – whether it can be delivered safely;
 - (c) the level of **funding of enhancement projects**;
 - (d) the **take up of REBS** (route level efficiency benefit sharing);
 - (e) changes to the **Schedules 4 and 8** regimes;
 - (f) concerns about our **process** to determine freight charges and the capacity charge;
 - (g) specific concerns about issues affecting **Scotland**; and

- (h) whether there would be **certainty on the levels of investment** at the start of CP5.

Deliverability

164. Deliverability was raised as a concern in terms of whether Network Rail could deliver the overall package and our role in ensuring that the company does deliver the package. We need to strike a fine balance on deliverability – the package should be challenging but not unrealistic. The changes we have made, specifically to the PPM trajectory and providing extra funding in areas that impact most on the operational railway, are designed to improve that balance. We expect that the company's stronger focus on improving asset management will have a major positive impact on deliverability.
165. We will adapt our approach to monitoring in CP5, with the emphasis on monitoring the basics – such as volumes of work delivered and the improvements in asset data quality. This will identify potential threats to good performance before assets fail and passengers and freight customers are affected.

Safety

166. Union responses expressed concern that the efficiency assumptions we have made could compromise safety. We have considered safety issues in all areas of our work and reviewed lessons from CP4. As a combined economic and safety regulator we have built our safety assessment into each stage of our review, and there is nothing in our balanced package which would prevent Network Rail running a safe railway. We have learnt the lessons of CP4 and given Network Rail more time to make maintenance savings so these can be well planned.

Enhancements

167. We received many proposals that further enhancement projects should be funded, or that funding levels should be increased for certain projects, particularly the Northern Hub. Although we recognise that other enhancement projects may provide good value for money, they are not required by the HLOSs. For most projects, including the Northern Hub, we are only making a funding assumption at this stage, with the final efficient cost being determined by March 2015.
168. But we have addressed concerns that a number of projects with important implications for passengers and freight customers would be jeopardised unless we allowed the rollover of unspent money from this control period. These are projects which should have been delivered but are already running late. Although this is far from ideal, we do not want to compound this by stopping the projects, so we have agreed to rollover funding.
169. We were also asked by the DfT to provide additional funding in Network Rail's settlement for further depots and stabling facilities. In our affordability calculation for the draft determination we had assumed the funding would be through franchised

operators, but the timing of the franchise programme makes this difficult and DfT considers funding Network Rail for the work would provide better value. This work is essential, for example to allow new electric services to run once the electrification of a particular route is complete. We have funded Network Rail for £312m of spend, but we recognise that the scope of the works is not clear at this stage, and we will adjust Network Rail's funding later to reflect efficient costs incurred.

REBS

170. Many consultees felt that take up of REBS would be limited and that alliancing should be the preferred way forward. As described in the draft determination, we strongly support bespoke commercial arrangements – such as alliancing - between Network Rail and operators, and we see REBS as providing a default for operators if they choose not to negotiate individual deals.

Schedules 4 and 8 regimes

171. There were differing views on Schedules 4 and 8 for passenger operators. The passenger Schedule 8 regime is a benchmarked one – payments are only made if performance is above or below a benchmarked amount. The benchmarks reflect the PPM outputs we set and we also set the payment rates (which are based on the likely impact of changes in performance on revenues). Some consultees thought the payments rates had been set too high, while others disagreed and there was a more general call for reassurance that the overall regime would be robust.
172. A robust Schedule 8 regime depends first of all on setting an appropriate PPM trajectory and the changes we have made to this trajectory since the draft determination will increase confidence in its deliverability. The second step is to ensure a clear link between that PPM trajectory and the benchmarks and we have worked with Network Rail and the wider industry to establish a transparent process with the opportunity for all operators to comment on draft numbers and debate changes. It is the open and consultative nature of this process which should give everyone assurance on this. Thirdly, the payment rates must be well evidenced. Although these rates have increased compared to CP4, over half the increase reflects the fact that the rail industry has been a success and revenues have grown (so a change in performance leads to a bigger change in revenues) and with the remainder of the increase reflecting the latest evidence from industry technical studies on how passengers respond to delays. There are differing views on the robustness of this work, but the fact remains that this is the best available evidence.
173. Network Rail was content with the decision in our draft determination regarding Schedule 8 for freight operators. Freight operators have expressed concern regarding the updated benchmarks and payment rates outlined in our draft determination. We have not changed our approach in setting the benchmarks and payment rates: the only changes compared to the draft determination have been as a result of better data or changes to the passenger Schedule 8 payment rates.

Concerns about the process for setting freight charges and the capacity charge

174. The scale of the possible overall increase in freight charges and the impact of possible increases in the capacity charge on all operators led to an extended debate with the industry. We are very aware of the impact this has had not only on the ability of businesses to plan but also the time spent on debating the issues. We will be reviewing the lessons learnt from this and we have put considerable resource into ensuring our final decisions reflect input from the industry.

Scotland

175. The concerns raised relating to Scotland included the affordability gap for Scotland, which we said in the draft determination that we believed would be closed and has now been closed. Another significant concern was the way fixed track access charges are allocated to cross border services. Currently First ScotRail does not pay fixed track access charges for using the network in England and DfT specified franchised operators do not pay fixed track access charges in Scotland. Although we are not changing this for CP5, we will lead a piece of work, within our PR18 development programme, working with Transport Scotland, DfT and the industry to assess options for CP6 and we will decide on any changes in the allocation. This work will begin early in 2014.
176. We were asked to establish a journey time metric for Scotland to measure and monitor changes over time, and an improved industry process for assessing options to improve journey times. We support these changes and a new metric and industry process will be established for CP5. We were also asked to clarify the position on cross border route availability. The strategic importance of planning to have at least one cross border route open is recognised and Network Rail must use all reasonable endeavours to achieve this and ensure that its planning processes fully reflect this aim.

Certainty on investment

177. While suppliers welcomed the scale of investment funded in the determination, there was still concern about the possibility of an investment hiatus at the start of the control period, reflecting the experience of the start of CP4 when Network Rail cut renewals volumes, and over the development and authorisation of new enhancement projects.
178. Network Rail's new asset policies imply a certain level of maintenance and renewals volumes and the company would have to justify a material departure from these volumes. In addition Network Rail is planning to spend £65m in 2013-14 developing new CP5 enhancement projects, illustrating the scale of the commitment to the programme. We have also worked with Network Rail to refine the process by which early stage enhancement project costs are approved by us in the course of the first year of CP5, to make sure there is a steady flow of decisions rather than a logjam at the end of the first year.

The longer term

179. 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, including planning its maintenance and renewals work efficiently. Network Rail and the industry in general will also benefit from the innovation funding provided in the Secretary of State's HLOS which should drive cost reduction and quality improvements in the future. Recognising the importance of investing for the longer term to reduce costs and improve service quality, we have decided to introduce a further incentive for Network Rail to invest in R&D and innovation. If Network Rail uses money from third parties or outperformance to invest in R&D and innovation we will provide matched funding of up to £50m. The HLOS fund and this matched funding send strong signals for Network Rail to respond to.
180. 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. 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.
181. Network Rail's net debt is forecast to rise from £31.7bn (in nominal prices) at the end of 2013-14 to £49.6bn (in nominal prices) by 2019⁴¹, although its assets will also grow in value. The rise in debt largely reflects the funding of the large enhancement programme, which will deliver substantial benefits. We forecast that Network Rail will spend on average around £1,264m (in 2012-13 prices) 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 the governments and industry about how sustainable this is.
182. In July 2013, we published our long-term regulatory statement⁴² to set PR13 in the context of a longer term time frame, looking at issues such as financial sustainability and the further alignment of incentives to deliver even greater value for money. In our view, our determination provides a good basis on which to develop the regulatory regime and encourage the evolution of the industry to address the issues set out in our long-term regulatory statement.

⁴¹ In real terms, debt will rise from £30.7bn to £41.5bn over CP5.

⁴² *Opportunities and challenges for the railway - ORR's long-term regulatory statement*, July 2013 available at <http://www.rail-reg.gov.uk/upload/pdf/long-term-regulatory-statement.pdf>.

Next steps

183. Table 5 shows the timetable for the remaining key milestones in PR13. Network Rail's delivery plan will include milestones for all the enhancement projects, following a consultation which will start in December 2013.
184. We will publish success criteria before 1 April 2014, against which we will measure the delivery of PR13, and we will also commission an independent review of our PR13 process.

Table 5: Timetable for the remaining key milestones in PR13

Date	Milestone
December 2013	Network Rail publishes draft delivery plan for consultation.
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.
31 January 2014	Close of Network Rail's consultation on its draft delivery plan.
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.