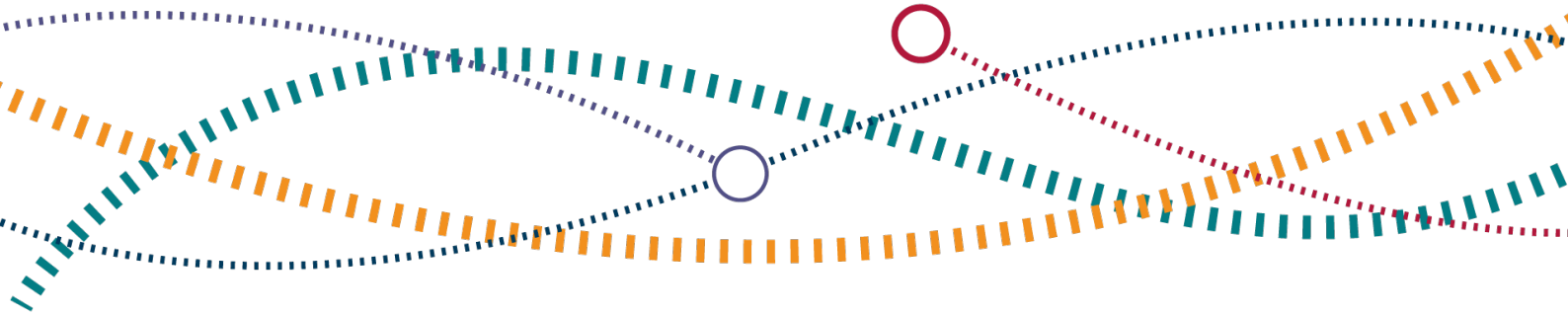
OFFICE OF RAIL AND ROAD

Annual efficiency and finance assessment of Network Rail 2021-22

06 October 2022



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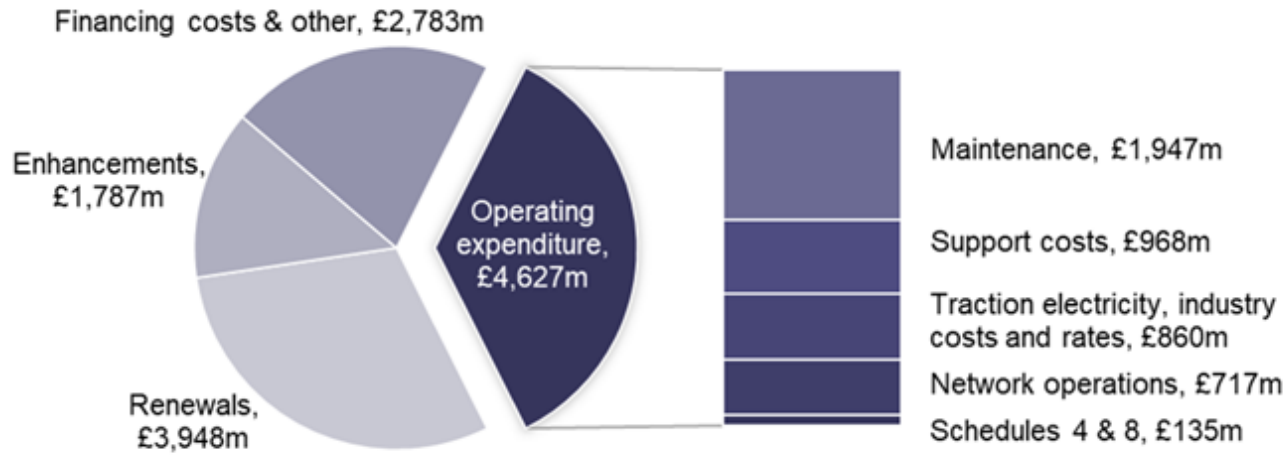
Executive summary

Network Rail's funding and requirements for control period six (CP6) were set out in our 2018 periodic review (PR18). This determined what Network Rail should deliver in respect to operating, maintaining, and renewing its network, and the funding needed to do this between 1 April 2019 to 31 March 2024.

This document sets out our assessment of Network Rail's efficiency and wider financial performance in the year, providing detailed support to our recent Network Rail Annual Assessment. It covers Network Rail's activities across Great Britain as a whole and separately for Scotland, and each of Network Rail's regions in England and Wales.

Network Rail spent around £13.1 billion operating, maintaining, renewing, and enhancing the national rail infrastructure in the year ended 31 March 2022 (2021-22), the third year of CP6. This includes network operations (£0.7 billion), support costs (£1.0 billion), traction electricity, industry costs and rates (£0.9 billion), maintenance (£1.9 billion), Schedule 4 (£0.3 billion), Schedule 8 (£-0.2 billion), enhancements (£1.8 billion) renewals (£3.9 billion) and financing costs (£2.8 billion). A more detailed breakdown of Network Rail's income and expenditure can be seen in Annex A.

Figure 1: Network Rail's expenditure in 2021-22



Source: ORR analysis of Network Rail's data

Key findings

The key findings from our assessment are:

1. Network Rail's delivery of efficiencies remains good. However, wider financial performance has missed its target.

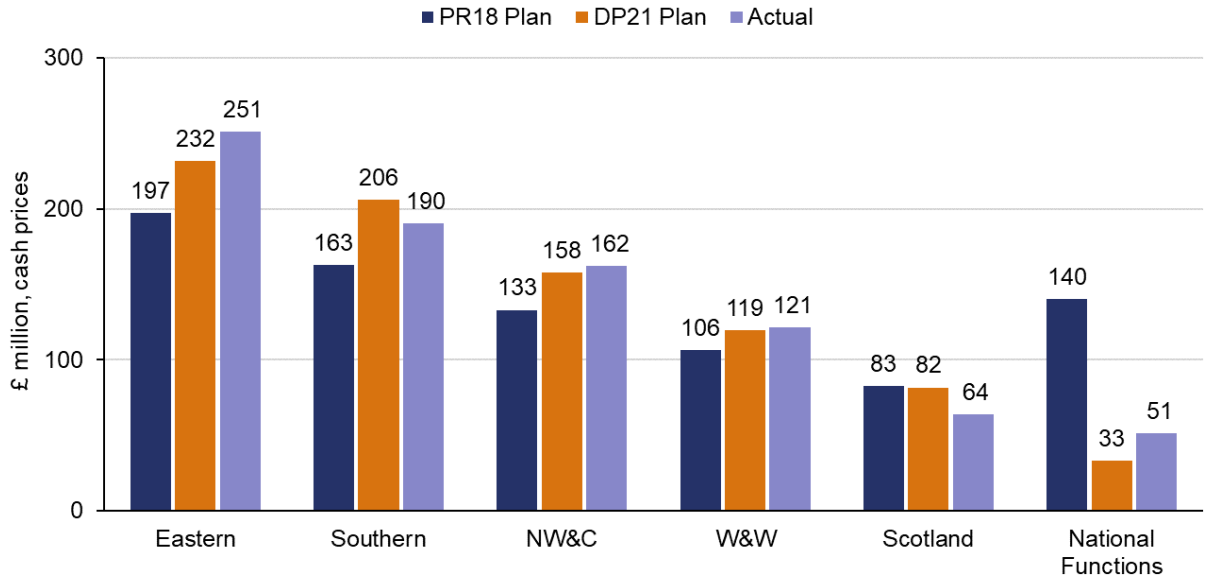
Network Rail has reported £840 million of efficiency improvements for the year, ahead of its £830 million delivery plan. It has delivered over £1.9 billion of efficiency improvements across the first three years of CP6 and is aiming to deliver £4.0 billion of efficiency improvements across CP6, ahead of our £3.5 billion target.

However, wider financial performance has missed its target. Network Rail financially underperformed by £487 million in 2021-22 and cumulatively by £891 million across the first three years of CP6. In simple terms this means that Network Rail has spent £891 million more than we expected for what it has delivered in the first three years of CP6 (partly funded from use of its CP6 risk fund). Network Rail established a CP6 delivery plan (business plan) to deliver the requirements of our PR18 determination. This included detailed financial assumptions for its income and expenditure in 2021-22 which are summarised in Annex A. We monitor Network Rail's income and expenditure against these assumptions using the Financial Performance Measure (FPM). FPM takes account of actual work delivered and excludes some items such as interest payments. The FPM measure is explained in Chapter 1. This is mostly due to cost pressures and reduced income exceeding the amount of efficiency improvements. We examine the factors that have contributed to Network Rail's efficiency improvements and to its financial underperformance in this report.

Network Rail's business is now organised around five distinct regions: Eastern, Southern, North West and Central (NW&C), Wales and Western (W&W) and Scotland. Figure 2 shows most regions met or exceeded their annual efficiency delivery plans. This report refers to two sets of delivery plans: the delivery plan set at the periodic review in 2018 (PR18) and the delivery plan for 2021-22 (DP21).

Eastern reported the greatest improvement (£251 million, 30% of the total and £20 million ahead of its annual plan). However, Scotland reported £64 million of efficiencies in the year, 21% behind its delivery plan for 2021-22 (DP21) of £82 million. We are particularly concerned about Scotland's ability to deliver its CP6 efficiency target (see heading 4 below).

Figure 2: Regional contributions to efficiency improvements in 2021-22



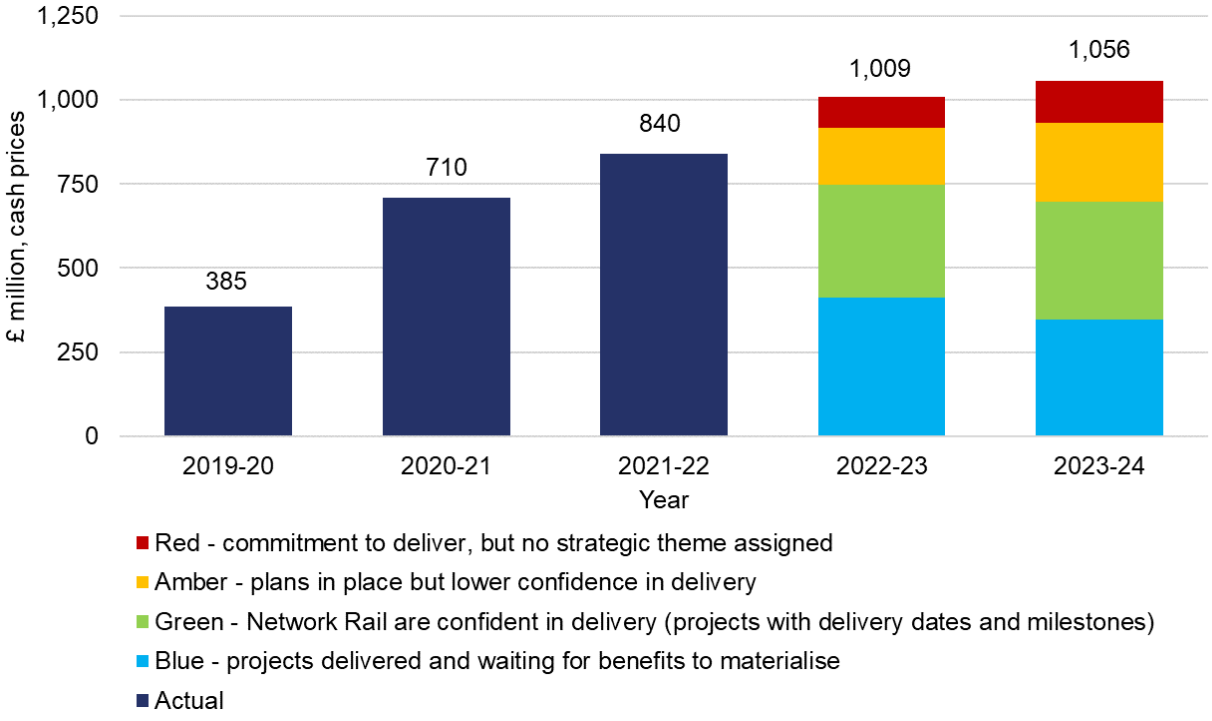
Source: ORR analysis of Network Rail's data

2. CP6 efficiency plans are progressing well though financial risks need to be carefully managed

Recognising increased financial pressures from largely unanticipated cost increases, Network Rail increased its CP6 efficiency target from £3.5 billion to £4.0 billion, with the planned increase coming mostly from workforce reform initiatives. However, the planned increases to volumes of renewals work and efficiency improvements that Network Rail needs to deliver in the last two years of CP6 will be challenging within the current economic conditions, inflation, and recent industrial action. Network Rail will have to carefully manage these risks with limited remaining risk funding.

Network Rail's updated CP6 delivery plan remains broadly in line with our PR18 determination. However, we are concerned about the relatively low level of funding in the plan for financial risks (£323 million at 31 March 2022) at the end of the year. This low level of risk funding is particularly significant given that, with just two years left of CP6, Network Rail has less time and resources to address issues which may arise such as industrial action, or to recover any under-delivery of efficiencies. If Network Rail does not meet its CP6 commitments, there will be implications for funding and delivery in CP7

Figure 3: Network Rail's actual and forecast CP6 efficiency



2019-20 to 2021-22: delivered, 2022-23 to 2023-24: forecast
Source: ORR analysis of Network Rail's data as of 31 March 2022

3. Staff costs remain high, with pay and conditions typically favourable in the rail industry

Network Rail employed just over 43,200 permanent staff in 2021-22 with associated employment costs of £2.7 billion. This is out of a total expenditure of £13.1 billion. The average remuneration of permanent staff was £54,700, of which 24% was from overtime, allowances, and employer pension contributions.

Network Rail's average headcount remained unchanged from 2020-21 but has increased by 9% since the start of CP6. The average number of staff in senior management grades increased by 12% in the year to around 660, a 22% increase since the start of CP6. This increase was mostly due to the implementation of Putting Passengers First. This is Network Rail's internal re-organisation to create five regional business units, supported by fewer national functions. Network Rail has informed us that the number of senior roles began to decrease towards the end of the year. This was due to its management modernisation programme. This analysis is based on headcount midway through the year, as reported in Network Rail's regulatory financial statements. Network Rail has informed us that headcount in

senior management roles was around 8 percent lower at the end of 2021-22 than at the start of the year, with further reductions planned in 2022-23.

We commissioned Incomes Data Research and Steer (IDR-Steer) consultants to establish whether rail industry employment costs are higher or lower than market comparators. For each employment category, they calculated a market median value which they then assessed the rail industry's role against. Variations within 10% either side of the median are classed as 'within market rates' and anything above or below 10% of the median is classed as 'above' or 'below' market rates. The study found that pay and conditions are typically favourable in the rail industry due to working hours, defined benefit pension options and high levels of trade union membership. With some exceptions, basic pay is above market and total reward largely within market. The report is available here.

4. Scotland's financial performance is falling behind

The Scotland region has financially underperformed by £136 million in 2021-22. This represents 28% of Network Rail's overall underperformance, though Scotland represents only 11% of relevant expenditure. It reported £64 million of efficiencies in the year, 21% behind its delivery plan of £82 million.

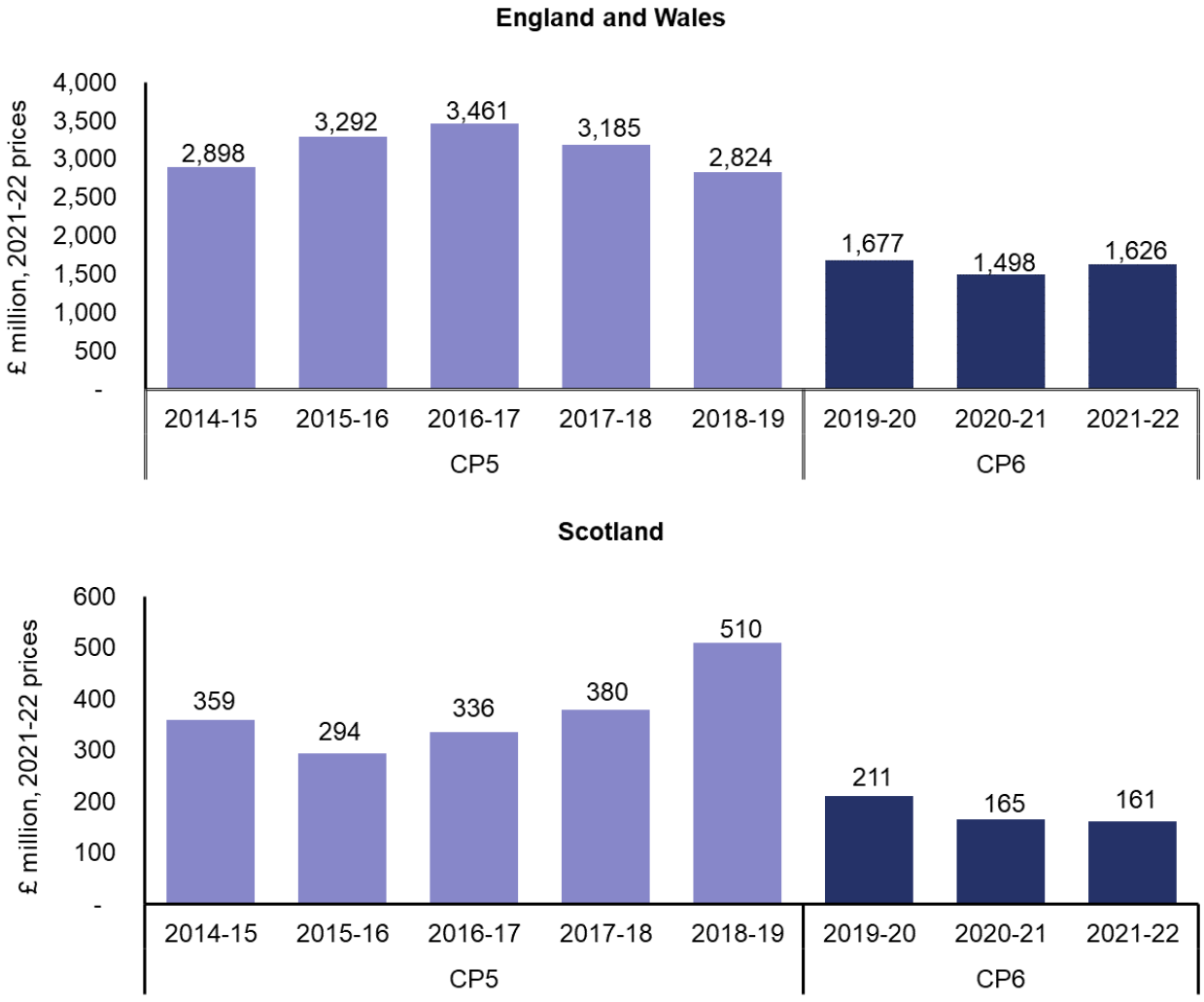
Scotland is forecasting to deliver £412 million of efficiencies across CP6. However, it has only delivered 43% of this amount in the first three years of CP6. The region will have to significantly increase its delivery of efficiency improvements in the final two years to meet its CP6 forecast. We are concerned about the robustness of its plans to deliver this step up in efficiency. At the start of 2022-23, the region's management considered that only 41% of its annual efficiency delivery plan would be achieved from initiatives that have been completed or have well developed project plans. This is 34 percentage points below the regional average.

Our PR18 determination included £329 million of ringfenced funding for Scotland to manage financial risks in CP6. Over the first three years of CP6, the region has spent or allocated most of this, with only £46 million remaining unallocated at the end of 2021-22. During 2021-22, the region also provisionally deferred £53 million of planned renewals to improve its ability to manage financial risks in the final two years of CP6. These deferrals are on top of the £30 million of work that was deferred in 2020-21 and have reduced the region's forecast composite sustainability index (CSI, a measure of network condition) for the control period, and through abortive costs and replanning of work, impacted its ability to deliver efficiency improvements.

5. Enhancements expenditure remains substantially lower than in CP5

Network Rail spent £1.8 billion across England, Wales, and Scotland on government-funded enhancements to the rail network in 2021-22 and has cumulatively spent £5.2 billion on these schemes in the first three years of CP6. Whilst this is in line with plans for CP6 to date (£12 million over), this represents a 50 percent reduction in annual expenditure on enhancements compared to the annual average in CP5.

Figure 4: Enhancements expenditure in CP5 and CP6



Source: ORR analysis of Network Rail's data

6. Use of research and development funding is progressing well, though uptake of new technologies needs to improve

Our PR18 determination included £245 million of funding for research and development (R&D) in CP6. Overall, we consider that good progress has continued to be made on Network Rail's CP6 R&D programme in 2021-22. The programme spent £92 million in 2021-22, with a cumulative spend of £218m in CP6. Over half of this year's spend was from matched external funding sources. Around 100 projects have started since the beginning of CP6 and five CP6 projects are already being deployed on the network. These include the use of artificial intelligence to reduce false positive detections in plain line pattern recognition track maintenance and the development of a low-cost interface between the signalling system and level crossing equipment for miniature stop lights.

In 2021-22 we undertook a targeted assurance review of technology adoption across Network Rail. Our review concluded that Network Rail will not be able to realise the full benefit of its investments in R&D and innovation until it addresses structural and behavioural issues which are preventing the adoption of new technology into widespread use. Our report includes specific recommendations for improvements.

7. Forward look: the 2023 Periodic Review and the Plan for Rail

Our annual efficiency and finance assessment increases transparency for governments, funders and other interested parties about how Network Rail is performing financially. Over the next year, we will continue to review Network Rail's financial performance and efficiency improvements, with an increased emphasis on how Network Rail is managing the impact of inflation and high input prices.

Our assessments also inform our five-yearly periodic reviews of what Network Rail should deliver in respect to operating, maintaining, and renewing its network, and the funding needed to do this. We have now commenced our 2023 periodic review process for determining the funding for Network Rail from 2024 to 2029 (Control Period 7, CP7). Further information about our 2023 periodic review is available here.

The UK government's Plan for Rail sets out an expectation that Great British Railways (once it is set up) will be held to account for delivering the commitments that Network Rail enters into for CP7. The plan also sets out additional monitoring and reporting requirements for ORR. We are publishing the rail sector employment costs study alongside this report. This study is a response to one of the specific requirements of the plan, where we are reporting for the first time on both train operators' and Network Rail's costs. We are working with the UK and Scottish governments on how we will implement our financial monitoring as part of the work to support the government's establishment of Great British Railways.

1. Introduction

1.1 Our annual efficiency and finance assessments provide our view of how Network Rail is performing financially each year. This 2022 publication covers the third year of CP6, April 2021 to March 2022 (2021-22). It provides detailed support for our recent Network Rail Annual Assessment, which also covers Network Rail's operational performance, including in respect of safety risk, train performance and asset management. We also publish a detailed annual health and safety report.

1.2 Most of the financial information in this report is based on Network Rail's regulatory financial statements. All efficiencies, headwinds and financial risk numbers in this report are presented on a cash basis. All other financial information is presented in 2021-22 prices, except where stated. Numbers may not sum due to rounding.

1.3 Chapter 2 reports on Network Rail's overall financial performance, including on its income and expenditure, and on related matters such as changes to efficiency, financial risk management and budgetary flexibility.

1.4 Chapter 3 reports on the financial performance and efficiency of the Scotland region.

1.5 Chapter 4 provides comparisons of the relative financial performance and efficiency of Network Rail's five regions. These include Eastern, North West and Central (NW&C), Scotland, Southern and Wales and Western (W&W). The chapter also refers to the financial performance of the national functions.

1.6 Annex A provides detailed financial tables for Network Rail's activities in Great Britain, for England and Wales, and separately for the regions and national functions, and for Wales.

1.7 Annex B explains the relationship between the efficiency and financial performance measures used in our assessments.

1.8 Annex C summarises the progress of Network Rail's CP6 research and development (R&D) activities.

How we calculate Network Rail's financial performance and efficiency

1.9 Different measures can be used to report on a company's financial performance and there is no single right or wrong measure. Different measures can be complementary to provide a more rounded assessment. We consulted on these matters in the development of our CP6 regulatory accounting guidelines. These guidelines explain how Network Rail is required to publicly report on its finances in CP6. Our assessments in CP6 focus on two measures:

- *Financial performance*: This compares income and expenditure to the financial assumptions underpinning CP6 funding. The efficiency improvements that regions are expected to achieve are embedded in the financial assumptions in their CP6 delivery plans. As such, these baselines are described as being 'post-efficient'. If a region has spent less and / or has received more income than its delivery plan (for what it has delivered), it will report financial outperformance, and vice versa for underperformance.

- *Efficiency*: This compares the relationship between expenditure on core business activities (operations, support functions, maintenance, and renewals) and outputs on a like-for-like basis over time.

1.10 Our assessments help to give assurance to rail users and funders about whether Network Rail's regions are delivering what is expected of them whilst providing a reputational incentive for regions to become more efficient.

Financial performance

1.11 Network Rail's financial performance can be calculated in several ways. The factors to be considered when deciding how to calculate financial performance include:

- to what baselines (or budget) we should compare;
- adjustments for the amount of work undertaken; and
- including or excluding some types of income and expenditure that is less controllable.

1.12 Our primary measure of Network Rail's financial performance is the Financial Performance Measure (FPM). To be as informative as possible, FPM takes each of the above matters into account. FPM compares Network Rail's income and expenditure to its CP6 delivery plan. It adjusts for the amount of work done and excludes income and expenditure that is not controllable by Network Rail. This includes network grants, fixed track access charges, traction electricity income and costs, and business rates. Our CP6 regulatory accounting guidelines explain how FPM is calculated.

Efficiency

1.13 The priorities for our assessments of efficiency, and hence for Network Rail's reporting in CP6, are to:

- drive the best outcomes for the users of the rail network through supporting better value for money;
- enhance regional performance comparisons to aid in benchmarking;
- move away from measures that aim to be technically precise to a more rounded assessment. This assessment aims to draw out key messages about the drivers of performance, make a clearer link between expenditure and delivery, and examine how efficiencies are being achieved;
- make better informed forward-looking assessments of the efficiencies that regions are likely to deliver throughout the control period; and
- provide clear and informative messages about efficiency improvements, recognising that different audiences want different levels of technical detail.

1.14 To deliver these priorities, we required Network Rail's reporting in CP6 to provide:

- greater emphasis on reporting how regions have delivered efficiency improvements;
- more detailed assessment of the drivers of cost changes over time and across regions; and
- a forward-looking view of the efficiencies that Network Rail will likely achieve across CP6. This includes reporting on the progress of regions' efficiency plans and leading indicators of delivery.

1.15 Efficiency and financial performance are related but not the same. The relationship between these measures is explained in more detail in Annex B.

Regional financial analysis

1.16 Network Rail started CP6 with eight regional operating routes supported by national functions. During the control period, it has reorganised these routes into five geographical regions (Eastern, North West and Central (NW&C), Scotland, Southern and Wales and Western (W&W). It has also devolved some national functions to regions. Network Rail still has routes, although there are now 14 of them. The routes are now a sub-geography of the five regions. A map of Network Rail's five regions is shown in Figure 1.1. This is explained further on Network Rail's website.

1.17 The reorganisation from routes to regions makes it difficult to compare performance back to our PR18 determination on a geographical basis, since PR18 was undertaken for routes. Network Rail developed a CP6 delivery plan which set out how it intended to deliver the requirements of our PR18 determination within the funding available. It subsequently revised its delivery plan from being route-based to region-based. So, for the purpose of comparing Network Rail's financial performance to our PR18 funding assumptions, we use Network Rail's revised CP6 delivery plan as the funding baseline in this assessment.

Figure 1.1: The geography of Network Rail's regions

Source: Network Rail

1.18 We welcome comments on the content of this report. These should be sent to:
Customer Correspondence Team
Office of Rail and Road
25 Cabot Square
London E14 4QZ
Email: contact.cct@orr.gov.uk

2. Network Rail's financial performance and efficiency

Financial performance

2.0 Our primary measure of Network Rail's financial performance is FPM. FPM provides a better understanding of Network Rail's financial performance than simple income and expenditure variances. FPM also complements the efficiency analysis (see Annex B for how the two can be reconciled). A positive FPM means that Network Rail has outperformed, and a negative FPM means that Network Rail has underperformed.

2.1 Network Rail spent around £13.1 billion operating, maintaining, renewing and enhancing the national rail infrastructure in 2021-22. This includes network operations (£0.7 billion), support costs (£1.0 billion), traction electricity, industry costs and rates (£0.9 billion), maintenance (£1.9 billion), Schedule 4 (£0.3 billion), Schedule 8 (£-0.2 billion), enhancements (£1.8 billion) renewals (£3.9 billion) and financing costs (£2.8 billion).

2.2 In 2021-22, Network Rail financially underperformed by £487 million against its CP6 delivery plan. Cumulatively, over the first three years of CP6, Network Rail has underperformed by £891 million against its CP6 delivery plan. This was partly funded from use of Network Rail's CP6 risk fund.

Table 2.1: Network Rail's financial performance, Great Britain, 2021-22

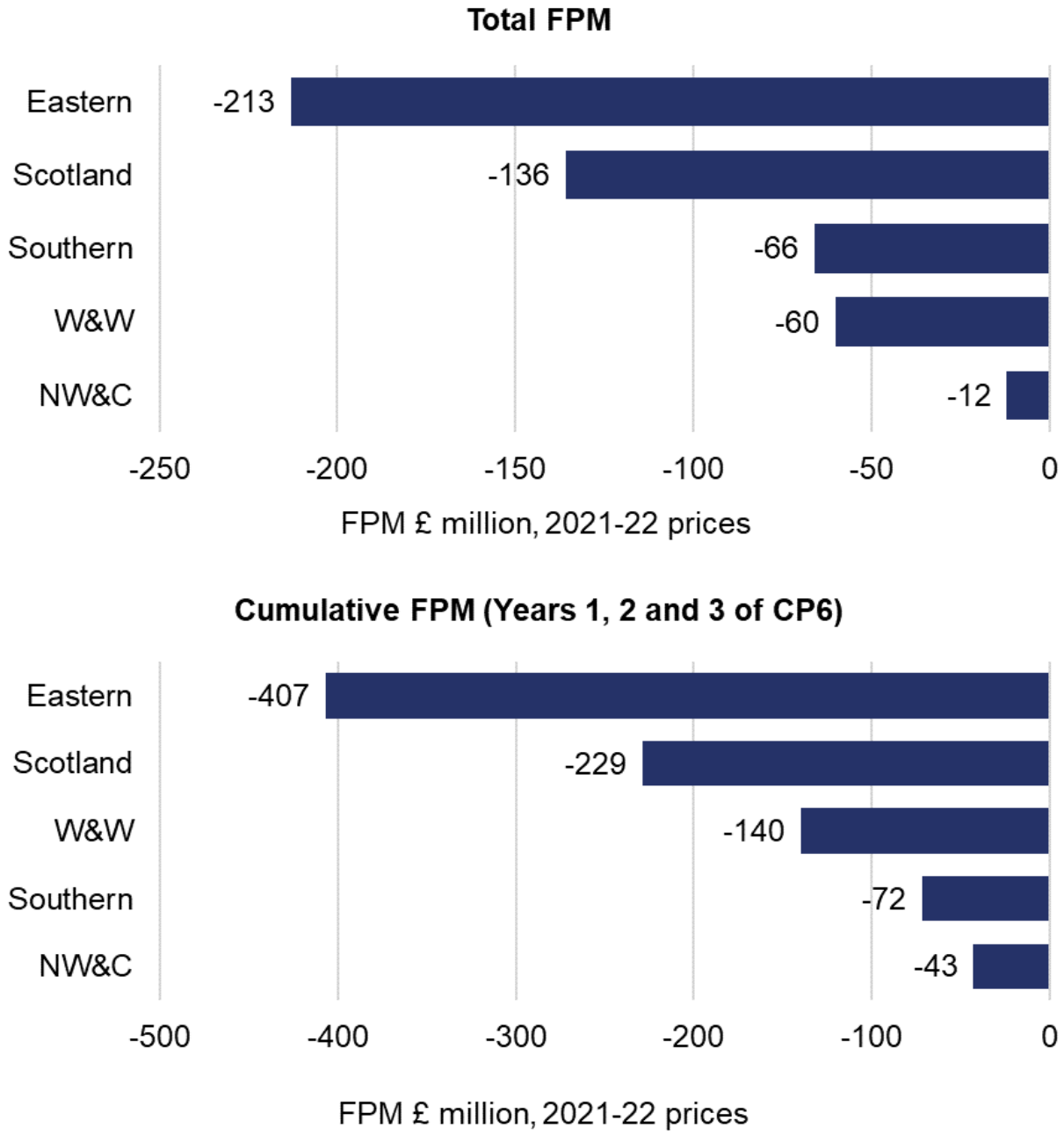
£ million, 2021-22 prices	Actual	Variance to CP6 delivery plan better /(worse)	Of which out / (under) performance
Network grant income	6,513	(639)	-
Franchised track access charges	2,599	(294)	(95)
Other single till income	659	(22)	(57)
Total income	**9,771**	**(955)**	**(152)**
Schedule 4	324	20	(3)
Schedule 8	(189)	245	245
Network operations	717	(46)	(46)
Support costs	968	(88)	(26)
Traction electricity, industry costs and rates	860	150	(1)
Maintenance	1,947	(200)	(206)
Total operating expenditure	**4,627**	**81**	**(37)**
Capex – Renewals	3,948	(21)	(248)
Capex – Enhancements	1,787	(783)	(50)
Total capital expenditure	**5,735**	**(804)**	**(298)**
Risk expenditure	-	589	-
Financing costs and other	2,783	(463)	-
Total expenditure	**13,145**	**(597)**	**(335)**
Financial performance measure (FPM)	n/a	n/a	**(487)**

Source: ORR analysis of Network Rail's data. Numbers may not sum due to rounding.

2.3 As shown in Table 2.1, Network Rail's financial underperformance in 2021-22 was due to several factors, most notably higher than expected renewals unit rates and maintenance costs, as well as lower property income (included in other single till income) and franchised track access charges. This was partly offset by outperformance in the Schedule 8 compensation regime. These matters are examined in the income and expenditure sections of this chapter and in our regional analysis in Chapter 4.

2.4 There are some common drivers of income and expenditure across the network. However, local circumstances (such as weather) and different levels of regional performance (such as local efficiency initiatives) can have an effect. Better understanding and learning from regional comparisons can help all regions to improve their financial performance. Figure 2.1 shows the regional contributions to Network Rail's financial performance, with national functions' contributions fully allocated between the regions.

Figure 2.1: Regional contributions to Network Rail's financial underperformance in 2021- 22

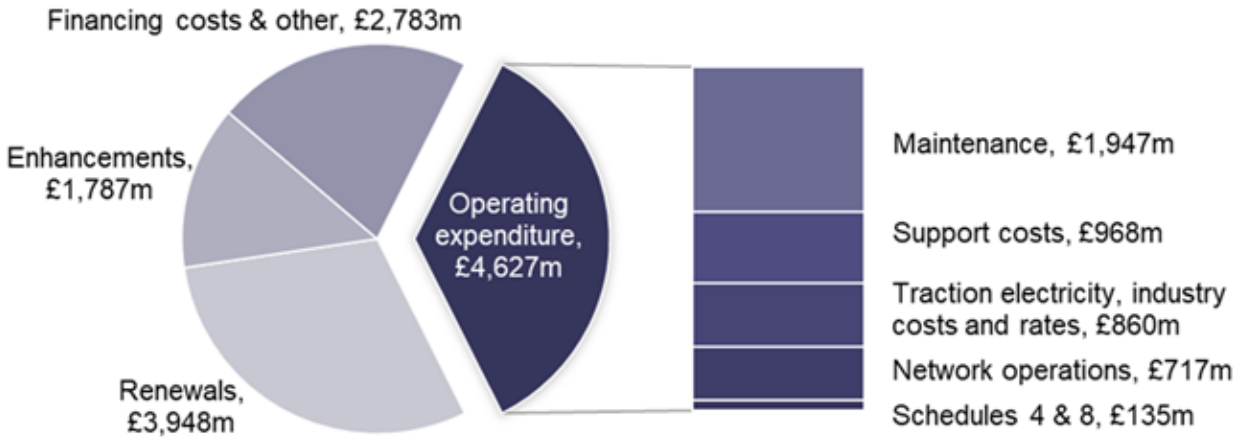


Source: ORR analysis of Network Rail's data

Expenditure

2.5 Network Rail spent around £13.1 billion in 2021-22. Figure 2.2 shows the main categories of Network Rail's expenditure, and these are examined below.

Figure 2.2: Network Rail's expenditure in 2021-22



Source: ORR analysis of Network Rail's data, 2021-22 prices

Operating expenditure

2.6 Operating expenditure relates to maintenance activities, network operations, support costs, traction electricity, industry costs and rates, and the Schedule 4 and 8 regimes. These expenditure items are examined below.

Maintenance

2.7 Maintenance expenditure relates to activities that sustain the condition and capability of the existing infrastructure to the previously assessed standard of performance. Network Rail spent £1,947 million maintaining its rail network in 2021-22, underperforming by £206 million. Network Rail has mostly attributed this underperformance to dealing with staffing disruption caused by the Coronavirus (Covid-19) pandemic, extra vegetation clearance work and additional spend on performance improvement schemes.

Network operations

2.8 Network operations expenditure relates to activities to operate the rail network. These include signalling and running Network Rail managed stations. Network Rail spent £717 million operating the network in 2021-22, underperforming by £46 million. This was mostly due to additional staff costs to increase network resilience to the pandemic.

Support costs

2.9 Support costs relate to activities that facilitate Network Rail's core business activities. These include information management and corporate functions. Support costs were £968 million in 2021-22, underperforming slightly by £26 million.

Traction electricity, industry costs and rates

2.10 Network Rail purchases electricity to provide power for electrically powered trains. These costs are largely matched by an equal amount of income from train operators (it retains a minimal amount of the cost for the electricity it uses). Industry rates and other costs include Network Rail's share of British Transport Police costs, business rates, Rail Safety and Standards Board (RSSB) costs, the ORR licence fee, and railway safety levy. Network Rail has limited control over these costs, which are either set by government agencies, or are driven by train operator usage and market prices in the case of traction electricity costs.

2.11 Traction electricity, industry costs and rates were £860 million in 2021-22, underperforming by £1 million. These items are largely not controllable by Network Rail, so they mostly do not contribute to its financial performance measure.

Schedule 4 and Schedule 8 costs

2.12 The Schedule 4 regime compensates train operators for planned reductions to network availability. It incentivises Network Rail to plan engineering work early and efficiently to reduce disruption. The Schedule 8 performance regime compensates train operators or Network Rail for the impact of unplanned service disruption.

2.13 Schedule 4 costs were £324 million in 2021-22, underperforming by £3 million. This was mainly due to the volume of renewals delivered requiring disruptive possessions being lower than the baseline assumed.

2.14 Schedule 8 generated £189 million of income (i.e., a negative cost) in 2021-22, outperforming by £245 million. The outperformance is mostly due to the higher-than-expected levels of train performance, due to a decline in passenger numbers and reduced train services as a result of the pandemic.

Renewals

2.15 Renewals expenditure relates to activities to replace (in whole, or in part) network assets that have deteriorated such that they can no longer be maintained economically. Renewal of an asset restores the original performance of the asset and can add additional functionality as technology improves.

2.16 Network Rail spent £3,948 million renewing the rail network in 2021-22, underperforming by £248 million. The largest components of the underperformance were track renewals (£113 million underperformance) and signalling (£79 million underperformance). Track renewals were significantly affected by problems with high output track renewal and ballast cleaning, including machine failure, bad weather, and Covid-19 related costs. Signalling has been affected by the added complexity of some schemes and contractor claims.

Enhancements

2.17 Enhancements are changes to improve network capacity or capability, for example, enabling more train journeys or higher speeds. These are subject to approvals from DfT and Transport Scotland as appropriate, under their 'pipeline' approaches for releasing funds as individual projects progress.

2.18 Network Rail spent £1,787 million on government-funded enhancements in 2021-22, underperforming by £50 million. Expenditure on the main schemes is summarised in Table 2.2. It also spent £405 million on third party funded schemes (see here).

2.19 Network Rail has cumulatively spent £5.2 billion on government-funded enhancements schemes in the first three years of CP6. This represents a 50% reduction in annual expenditure on enhancements compared to the annual average in CP5.

Table 2.2: Network Rail's enhancements expenditure in 2021-22

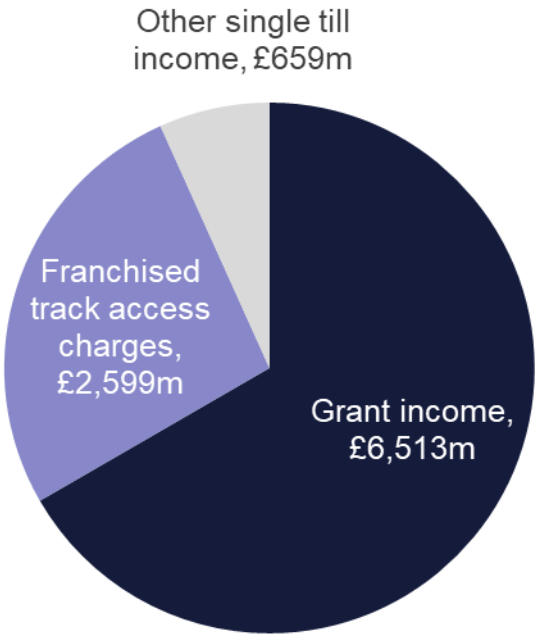
£ million, 2021-2022 prices	Actual	Of which out / (under) performance
Trans Pennine Route Upgrade	438	13
East West Rail Phase 2	261	(1)
East Coast Digital Programme	106	0
East Coast Main Line Enhancements Programme	104	(25)
Midland Main Line Programme	101	2
Crossrail	73	(62)
Access for All	50	0
Bristol East Junction	47	25
Gatwick Station	45	9
Restoring Your Railway	45	0
Other Network Rail-funded enhancements	517	(11)
Total Network Rail-funded enhancements	**1,787**	**(50)**
Third party-funded enhancements (including HS2)	405	0
Total enhancements	**2,192**	**(50)**

Source: ORR analysis of Network Rail's data

Income

2.20 Network Rail received £9,771 million of income in 2021-22. Figure 2.3 shows this split by major income category. The majority of Network Rail's income was from grant income (£6,513 million) and franchised track access charges (£2,599 million).

Figure 2.3: Network Rail's income in 2021-22



Source: ORR analysis of Network Rail's data, 2021-22 prices

2.21 Network Rail's income financially underperformed by £152 million, mostly due to pandemic-related reductions to franchised track variable usage access charges and property rental income.

Efficiency

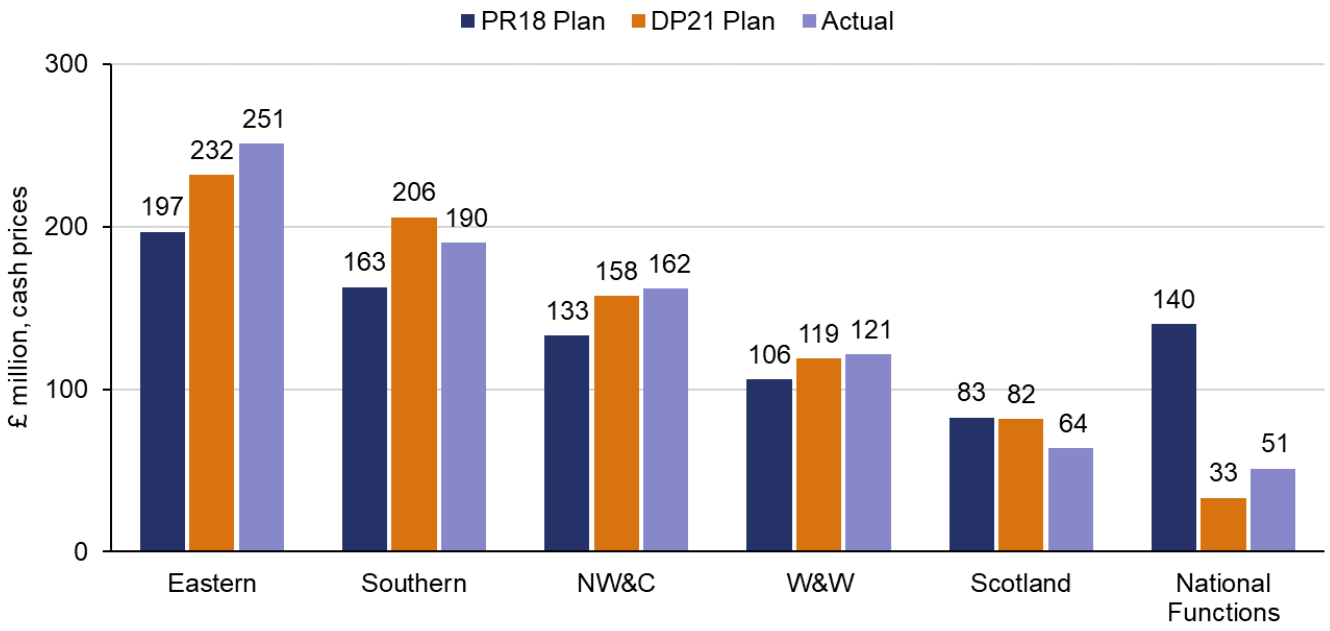
2.22 In determining the funding that Network Rail would need to deliver its required outputs in CP6, we assessed the efficient level of expenditure that it required. The detailed assumptions on expenditure and efficiency underlying these projections were set out in our 2018 periodic review (PR18), where we challenged Network Rail to make £3.5 billion of efficiency improvements (in cash prices).

2.23 Network Rail responded to our PR18 determination by developing a CP6 delivery plan which included how it intended to deliver our £3.5 billion of efficiency challenge. However, recognising the increased financial pressures from unanticipated cost increases, Network Rail has since increased this CP6 efficiency

target from £3.5 billion to £4.0 billion, with the planned increase coming mostly from workforce reform initiatives. Network Rail's five-year efficiency trajectory is shown in Figure 2.4.

2.24 Network Rail has reported £840 million of efficiency improvements for 2021-22, slightly ahead of its £830 million revised delivery plan. Figure 2.4 shows regions and national functions' contributions.

Figure 2.4: Regional contributions to efficiency improvements, 2021-22

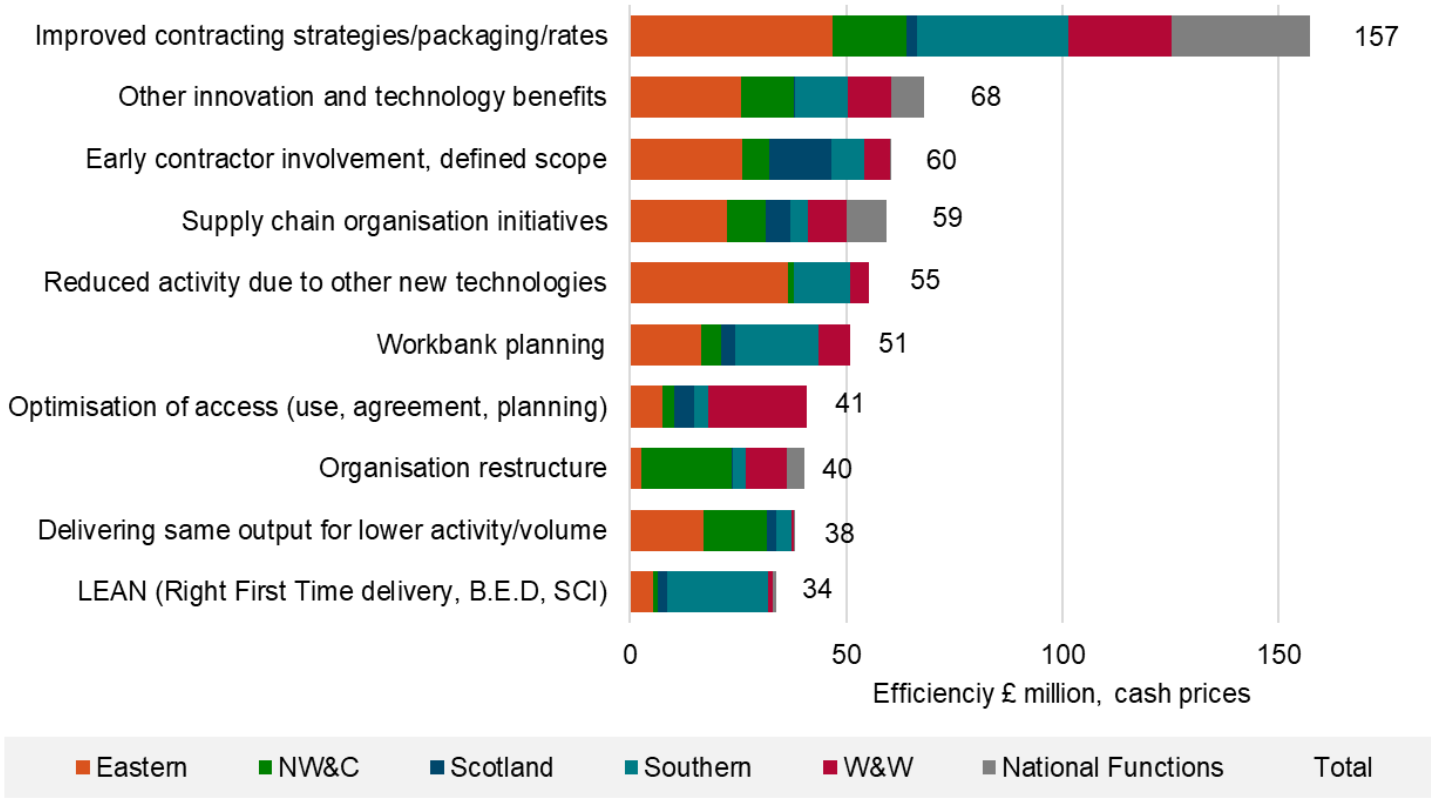


Source: ORR analysis of Network Rail's data

2.27 Network Rail's improved efficiency in 2021-22 has been achieved through a combination of national and regional initiatives. Network Rail aggregates these into around 30 initiative groupings in its reporting to us. The groupings change slightly over time as Network Rail seeks to remove categories that are not used, to reduce overlap, and to introduce more useful categories. Key initiatives which contribute to Network Rail's efficiency improvement in 2021-22 are shown in Figure 2.5.

2.28 Regions' contributions to efficiency groupings vary according to the type and variety of work they have planned, the size of the region and the unique geography of the region. The planning, delivery and measurement of efficiency initiatives has been devolved to the regions, which are responsible for delivering on their efficiency targets. This should enable Network Rail's regions to tailor their efficiency initiatives to deliver the best outcomes for the region. One of the advantages of a regional structure is that Network Rail can learn from having different approaches.

Figure 2.5: Top ten efficiency initiatives in 2021-22



Source: ORR analysis of Network Rail's data

2.29 The largest efficiency initiatives that Network Rail delivered in 2021-22 include:

1. **Improved contracting strategies (£157 million)**

   Improved contracting strategies include negotiating contracts with improved terms or rates. Network Rail also improved market research, tendering and contract performance monitoring. Network Rail has enhanced collaboration between routes and the central supply chain organisation to consolidate duplicate contracts, to provide leverage with their suppliers, and to share expert knowledge.

2. **Other Innovation and technology benefits (£68 million)**

   Network Rail suggest this efficiency grouping is a catch all for efficiencies as a result of technology and innovation. Some examples include the use of drones, Plain Line Pattern Recognition (PLPR) technology to detect track defects, or systems to improve asset intelligence.

3. **Early contractor involvement, defined scope and minimum specification solution (£60 million)**

   This initiative involves Network Rail engaging with contractors at earlier stages in the delivery of work and identifying opportunities to make savings through reduced scope, using minimum specification solutions and value engineering. Early involvement also gives Network Rail more time to shape strategy and avoid failure in the delivery stage.

4. **Supply chain organisation initiatives (£59 million)**

   This grouping includes savings generated from more efficient management of Network Rail's fleet of vehicles and machinery, and through improved unit rates through reduced costs of plant and materials. Network Rail aims to achieve this through delivering economies of scale by centrally negotiating contracts for regions. These savings are then passed on to the regions who use these services.

5. **Reduced activity due to new technologies (£55 million)**

   The introduction of new technologies can reduce the level of renewals required to maintain the condition of assets. This efficiency category includes various projects across the regions. These include using new technologies designed to improve automation, accuracy, performance, and decision-making.

6. **Workbank planning (£51 million)**

   Work bank stability is about ensuring that works which have been planned go ahead, and that fewer unplanned jobs are added to the workbank. It is thought that giving supply chains a fixed and predictable workbank will lead to improved unit rates. It might avoid peaks and troughs in activity and optimise the utilisation of constrained resources, whilst reducing rework and failures on delivery.

7. **Optimisation of Access (£41 million)**

   This initiative is about improving methods of obtaining access to the network for engineering work. This includes the use of blockades to improve engineering efficiency and to reduce set up and take down costs. Network Rail also strives to improve accountability, to make sure possessions are as multi-disciplined as possible, to reduce the number of possessions required, but also to work collectively with the TOCs and FOCs to minimise disruption for all parties.

8. **Organisation restructure (£40 million)**

   This initiative refers to savings driven through local restructures to reduce headcount. These are not related to modernisation or the Putting Passengers First (PPF) re-organisation, which involves devolution to regions. For example, Network Rail has stated that the Capital Delivery business unit has substantially reduced its headcount as a result of a restructure to become a more agile client.

9. **Delivering same output for lower activity or volume (£38 million)**

   Reviewing programme deliverables to identify opportunities to reduce volume or specification without affecting outcomes.

10. **LEAN initiatives (£34 million)**

    Lean initiatives refer to an installation of a culture of continuous improvement. An example of this is through The Better Every Day (BED) programme which enables, empowers, and encourages employees to make incremental improvements to their work to create value with fewer resources and with less waste. These initiatives are typically locally driven programmes, such as better rostering for the frontline.

Headwinds, tailwinds, scope changes and input prices

2.30 Network Rail analyses changes to its operations, support, maintenance and renewals costs over time through a 'fishbone' analysis which includes efficiencies, headwinds (unplanned cost increases due to external factors such as Covid-19), tailwinds (unplanned cost decreases due to external factors), scope changes (planned changes to levels of work undertaken) and input prices (inflationary effects from increases or decreases in costs above general CPI inflation).

2.31 Network Rail's headwinds have increased over the control period. In Network Rail's CP6 delivery plan, it identified headwinds of £0.6 billion and the latest forecast for the control period is now £1.1 billion. This is largely due to cost increases relating to Covid-19.

2.32 During the year we reviewed reporting of headwinds and scope changes. We have concluded that these are broadly being tracked and reported appropriately. However, recognising the current economic uncertainty, including high levels of general inflation, we intend to continue to keep these matters under review.

Leading indicators of efficient delivery

2.33 Poor planning caused a number of problems with Network Rail's renewals delivery and efficiency in CP5. As a result of this, we requested that Network Rail demonstrate that it is better prepared to deliver efficiently from the start of CP6. This section provides an update on Network Rail's preparations to deliver efficiently in 2022-23 (year 4 of CP6).

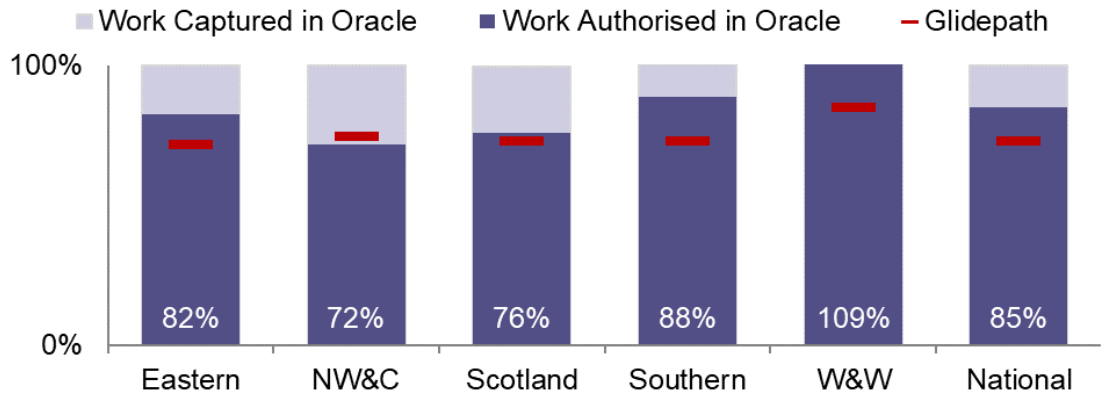
2.34 Chapter 4 provides a more detailed, regional analysis of these leading indicators. Note that the 'National' column in the figures below refers to a national average, not Network Rail's national functions.

Renewals planning

2.33 Effective renewals planning is important because it improves the robustness of the rail network and reduces costs. It helps to provide a stable profile of work for the supply chain. It also means Network Rail can avoid more critical work being squeezed into the final quarter of the year (when weather conditions are most challenging) and it also prevents slippage of work into the following year.

2.34 85% of Network Rail's planned renewal projects for 2022-23 had received financial authorisation by the end of 2021-22, which is above its target of 73%. This indicator is also reporting higher than the previous three years. We consider that Network Rail has made progress in developing its 2022-23 renewals workbank and is in a strong position to continue to deliver efficiently[1].

Figure 2.6: Percentage (by value) of 2022-23 renewals projects with financial authorisation



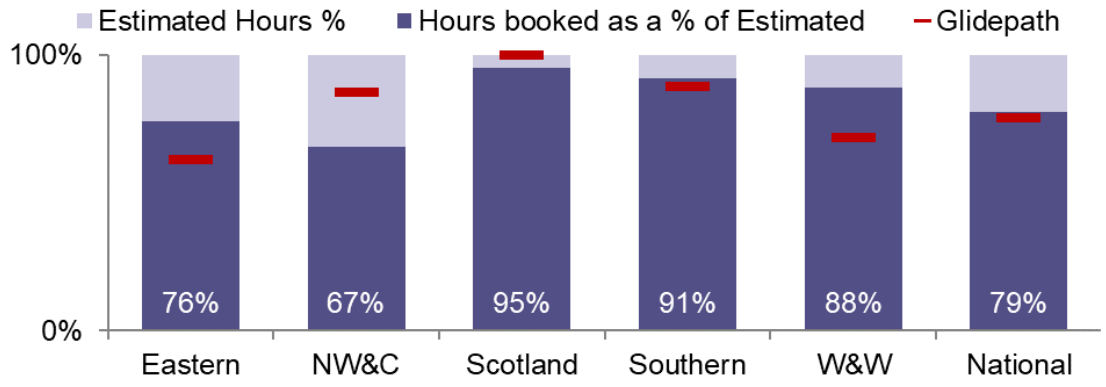
Source: ORR analysis of Network Rail's data

[1] It is possible for this indicator to be over 100%, as it the case for Wales & Western. This is because the region has authorised additional renewals activities, some of which may be undertaken later.

Securing engineering access to the railway

2.35 Network Rail exceeded its internal target for booking disruptive access to the network for planned engineering work in 2022-23. Against a target of 77%, it had 79% of network access booked by the start of the year. This metric is lower than at the same point in the prior year (98% in 2021-22). Network Rail has attributed this to an improved ability to secure disruptive access last year because of reduced services during the pandemic. The level of disruptive access secured by the end of the year was similar to levels before the pandemic.

Figure 2.7: Percentage of required network access in 2022-23 that has been secured

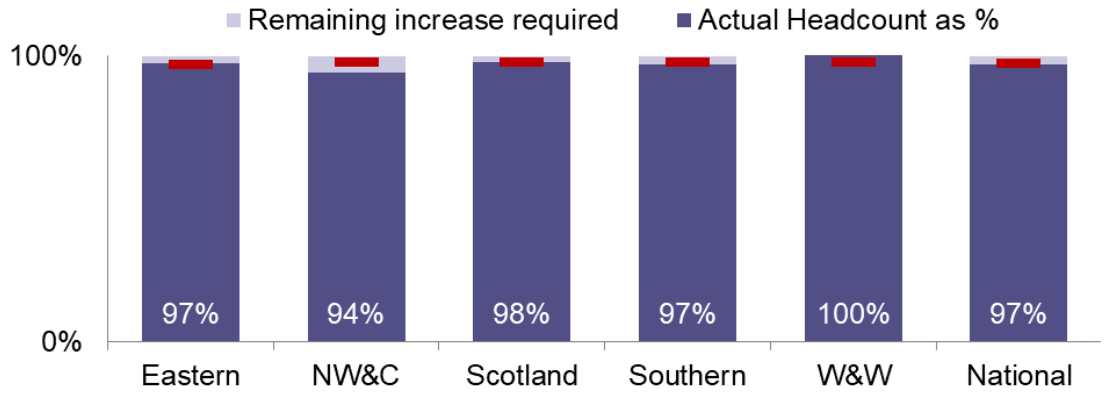


Source: ORR analysis of Network Rail's data

Maintenance headcount

2.38 Network Rail's maintenance headcount is currently at 97% of its CP6 delivery plan. Maintenance headcount has reduced throughout the year due to recruitment restraint with recruitment limited to safety critical or essential roles. Where necessary, regions are maintaining delivery through the use of labour-only subcontractors and overtime.

Figure 2.8: Maintenance headcount compared to 2022-23 requirement



Source: ORR analysis of Network Rail's data

Efficiency planning

2.37 As shown in Table 2.3, Network Rail considers that around 75% of its regional 2022-23 target efficiency will be achieved from projects that have already been delivered or have clear project plans. The remaining 25% have no clear project plans or have plans in place but low confidence in delivery.

Table 2.3: Network Rail's assessment of the maturity of its 2022-23 efficiency plans (by value)

	Eastern	NW&C	Scotland	Southern	W&W	Total
Project delivered, waiting for benefits to be realised	25%	56%	18%	66%	22%	41%
Project in place with delivery plan and milestones	52%	18%	23%	20%	53%	34%
Strategic theme applied, commitment to deliver but no plan in place	4%	22%	44%	10%	23%	17%
Unknown	20%	4%	15%	4%	2%	9%
	100%	100%	100%	100%	100%	100%

Source: ORR analysis of Network Rail's data

Employment costs benchmarking

2.38 We commissioned Incomes Data Research and Steer (IDR-Steer) consultants to establish how rail industry employment costs compare to market comparators. The report covers Network Rail and the majority of passenger train operators. It is available here. Relevant findings for Network Rail's employment costs are summarised below.

2.39 The study included employees' basic pay and their total reward, which also includes shift pay, employer pension contribution, the value of private medical insurance, bonuses, and company cars. Within the report, variations of greater than +10% are described as being 'above market'; variations of greater than -10% are described as being 'below market'; and variations within +/-10% are described as being 'in line with market'.

2.40 The study categorised Network Rail employees into three main groups based on their terms and conditions:

(a) *Group 1*: Includes staff on 'Role Clarity' terms. This comprises of management and non-management staff in common employment groups, including head-office staff, operational managers, and station staff on national broad-banded salary ranges. Network Rail provided data for just under 7,000 staff in these roles.

Basic pay is close to market levels for this group overall. However, 42% of employees in this group are above market levels for total reward (i.e., with a variation of greater than 10% above the market median).

(b) *Group 2*: Covers operational and maintenance staff on national terms and conditions. This includes signallers, controllers, electrical control room operators (ECRO) and supervisory (SUP) grade staff on spot rates, which are a single rate of pay for a particular job or grade. Network Rail provided usable data for 5,024 staff in these roles.

While basic pay and total reward are close to market levels (i.e., with a variation of less than 10% to the market) for the group as a whole, individual job categories within the group have starkly contrasting results. For controllers and SUP staff, total reward is 19% above the market median and therefore 9% above market rates. Whereas ECRO staff and signallers' total reward is at -7% and -13% below the market median respectively. This means ECRO staff are still within market rate, but signallers are slightly below market rate by 3 percentage points.

(c) *Group 3*: Covers operational and maintenance staff on various local terms and conditions (mainly due to previous transfers of undertakings (Protection of Employment), commonly referred to as TUPE, arrangements). Network Rail provided usable data for 10,687 employees in these roles.

Basic pay comparisons indicate that maintenance staff pay (internally referred to as 'PSE' grades) is above market, at 18% above the median and therefore 8 percentage points above the market rate. However, other Group 3 job groups are within market.

Network Rail's PSE payroll system does not correctly categorise basic and premium pay elements, so establishing variances for total reward was not possible for all roles. For the limited number of roles for which suitable data was available, total reward was further above market than basic pay.

2.41 IDR-Steer was unable to obtain all the information that they required to carry out benchmarking analysis for all Network Rail staff. IDR-Steer found that the PSE payroll system did not correctly categorise staff pay in to 'basic pay' and 'premium'. Payroll data on shift pay for operational staff on national terms also appears to contravene what is detailed in the terms and conditions of employment. It was also not always possible to obtain clarifications on specific roles or details of staff working arrangements. These challenges constrained the analysis.

2.42 IDR-Steer also made the following general observations about their study:

(a) Network Rail's pay rises between 2019 and 2021 have generally been lower than elsewhere in the economy.

(b) the majority of Network Rail's terms compare favourably against the wider market.

(c) maximum payment levels available under Network Rail's annual performance-related bonus scheme are high, even in comparison to higher-paying sectors such as financial services; and

(d) the ability for new employees to join a defined benefit pension scheme is a highly favourable benefit compared to that typical in the private sector.

2.43 We will draw on IDR-Steers' findings as part of our PR23 assessment of Network Rail's efficient costs (see here).

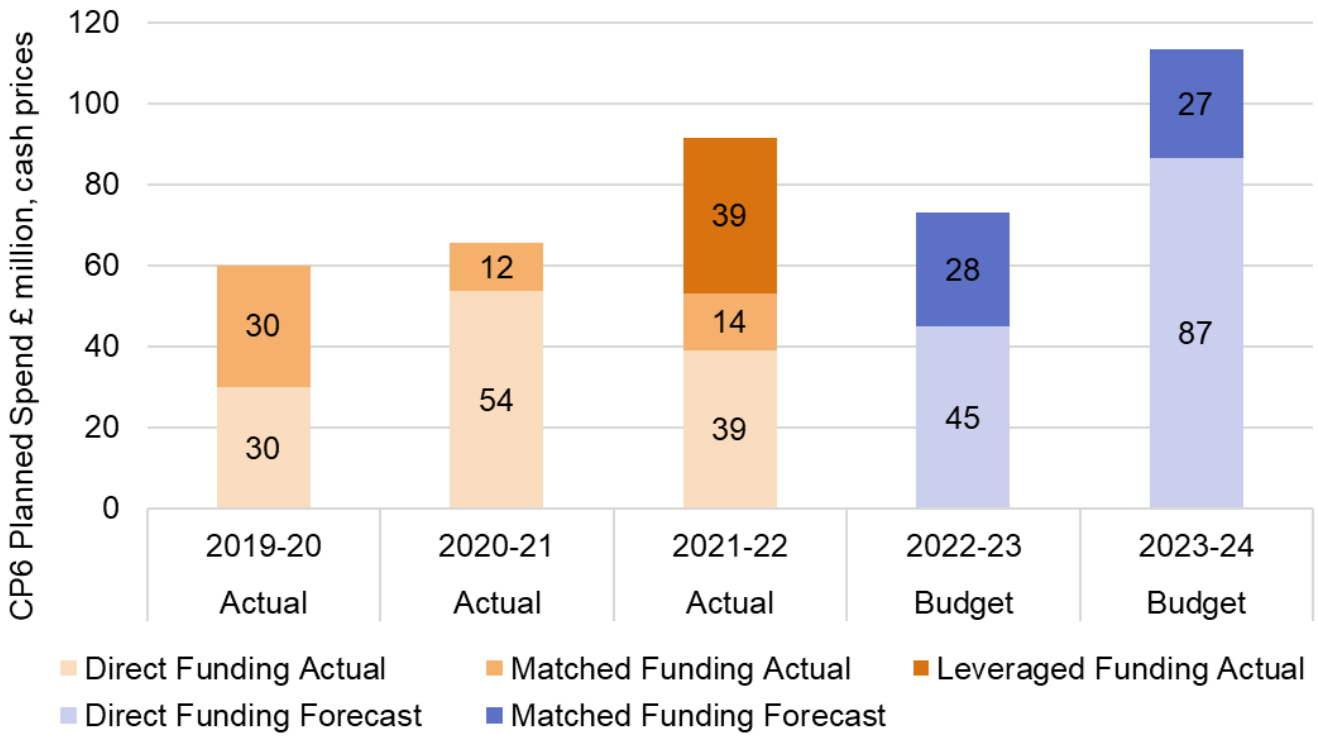
Research and development expenditure

2.44 Our PR18 determination included £245 million of funding for Network Rail to spend on research and development (R&D) activities in CP6. Overall, we consider that good progress has continued to be made on Network Rail's CP6 R&D programme in 2021-22. The programme spent £92 million in 2021-22 with around 100 projects having started since the beginning of CP6. Over half of this funding was from matched external sources[2]. Five CP6 projects have been deployed on the network. These include the use of artificial intelligence to reduce false positive detections in plain line pattern recognition track maintenance and the development of a low-cost

[2] Matched funding is where an external organisation contributes to the technologies being delivered and are part funded by the R&D portfolio of projects or where a joint venture develops a technology that Network Rail is planning to deploy to the business. Leveraged funding is where Network Rail is part of a membership or in Shift2Rail's case part of a joint undertaking, via a grant agreement, where Network Rail does not contribute funding to all operative projects but has access to the R&D outputs from other parties involved.

interface between the signalling system and level crossing equipment for miniature stop lights.

Figure 2.9: Network Rail's actual and planned R&D expenditure in CP6



Source: ORR analysis of Network Rail's data

2.45 Annex C summarises the progress of Network Rail's CP6 R&D projects.

2.46 In 2021-22, we undertook a targeted assurance review of technology adoption across Network Rail. Our review found that a large number of teams across Network Rail need to work together effectively to get new technology developed and adopted into use. We found that within each of these teams there were reasonable processes, competent people, and a motivation to improve and become more efficient. However, we found significant challenges at the interfaces between these teams and that Network Rail needs to improve behaviours at these interfaces. Our review concluded that Network Rail will not be able to fully realise the benefit of its investments in R&D and innovation until it addresses the structural and behavioural issues which are preventing the adoption of new technology into widespread use. This has important implications for the continuation of efficiency improvements beyond CP6. Our report can be found on our website and includes specific recommendations for improvements.

Performance Innovation Fund

2.47 In PR18, we established a performance innovation fund (PIF) to support innovative projects aimed at driving improvements in train service performance. The £45 million fund provides an incentive for the rail industry as a whole to think creatively about ways to improve train performance and to improve knowledge sharing about what does and does not work. The PIF is open to bids from across the rail industry, with a focus on removing obstacles in current working practices that prevent a more effective focus on performance improvement.

2.48 The PIF has had a slow rate of investment so far in CP6 with only £13 million (29% of the fund) spent so far. However, we welcome that £39 million of expenditure has now been spent or authorised across a range of schemes, with a particular focus this year on addressing seasonal train-track adhesion problems, including trials of variable rate sanders and cryogenic cleaning of the rail head. These trials should help to prioritise any future scaling up of these technologies.

2.49 In years 1 and 2 of the control period, Network Rail Scotland struggled to gain authorisation for schemes requested through the Performance Innovation Fund (PIF). However, there was some improvement in year 3, with £2.2 million of spend authorised.

2.50 It made good progress on a programme to install Global Positioning System (GPS) trackers on High-Speed Trains (HSTs). However, its trial of an innovative approach to reduce the impact of leaf fall on autumn performance (using laser trains and cryogenics) has been delayed pending further assessment.

2.51 We will continue to monitor Network Rail Scotland's delivery of PIF schemes in CP6.

Risk funding

2.52 Network Rail received £3.0 billion of risk funding (in cash prices) for CP6 which meant Network Rail's confidence in delivering its CP6 forecasts was 80% ('P80'). The 80th percentile cost (usually known as P80) means that there is an 80% probability of the final cost being lower than the stated amount. Based on Network Rail's forecasts from February 2022, this confidence level has reduced to 61%. This could reduce further as there are a number of challenges remaining in the control period, including industrial action, a step up in volumes of work, a high level of general inflation and uncertain economic conditions.

2.53 Network Rail's remaining risk funding for CP6 was £323 million at the end of the year. We expect Network Rail to use its available risk funding through the control period. However, the amount remaining seems low given the financial risks that Network Rail faces in the final two years of CP6, and that Network Rail has already allocated nearly 90% of its original CP6 risk funding.

2.54 Scotland received £329 million of ringfenced funding to manage financial risks in CP6. Over the first three years of CP6, the region has allocated most of this, with only £46 million remaining at the end of 2021-22. The region has also deferred £53 million of planned renewals in the year to improve its ability to manage financial risks in the final two years of CP6. This is in addition to the £30 million of planned work that was deferred in 2020-21. These deferrals have reduced the region's forecast composite sustainability index (a measure of network condition) for the control period. Deferrals have also led to abortive costs and replanning of work. This has impacted the region's ability to deliver efficiency improvements.

Budget flexibility

2.55 Network Rail is classified as an arm's length public sector body which means that it is subject to the Government's resource (operating) and capital departmental expenditure limits ('RDEL' and 'CDEL'). These expenditure limits restrict Network Rail's ability to spend money in different years of a control period than initially agreed. The expenditure limits also restrict switching expenditure between resource and capital expenditure. The budget flexibility rules are quite complicated and are explained in our PR18 financial framework document.

2.56 Network Rail requested that £95 million of its capital budgets were rolled over into the 2022-23 financial year following delays on projects, notably in enhancements. Whilst this was within the permitted range set out in the guidance from HM Treasury, government fiscal constraints and other government priorities mean this reprofiling of CP6 spend has yet to be formally agreed.

2.57 Oversight of the flexibility of network grant payments within Scotland falls within the remit of Transport Scotland. Network Rail Scotland overspent against Transport Scotland's budget for the year by £8 million, which was managed within the Scottish Government's budget flexibility process. £75 million of funding rolled forward from the 2020-21 financial year has been allocated for use in later years of CP6.

Regulatory finances

2.58 Network Rail's regulatory asset base (RAB) increased by a net £3.6 billion to £76.3 billion in 2021-22. The increase was due to indexation, with renewals added to the RAB offset by the amortisation of existing assets and an £83 million deduction for property sales.

2.59 Network Rail no longer issues debt to fund its capital expenditure. However, it continues to hold legacy debt (£55.5 billion), including financial instruments issued to investors before the company's reclassification to the public sector. It paid £2.8 billion of financing costs in the year, including £1.8 billion of financing costs on index-linked debt. This is a significant increase from the £0.6 billion of financing costs paid on index-linked debt in 2020-21 reflecting the increase in inflation. These costs were funded by DfT outside of the PR18 determination.

3. Scotland region's financial performance and efficiency

3.0 Our 2018 periodic review included a separate funding settlement for Network Rail's activities in Scotland. These activities are funded by the Scottish Government, rather than the Department for Transport.

Financial performance

3.1 As shown in Table 3.1, Network Rail Scotland financially underperformed by £136 million against its delivery plan for the year. It financially underperformed in each of its major categories of income and expenditure, with the most significant underperformance in maintenance, support costs, renewals, and income. Cumulatively, the region has underperformed by £229 million against its delivery plan for the first three years of CP6.

Table 3.1: Scotland region's financial performance in 2021-22

£ million, 2021-22 prices	Actual	Variance to CP6 delivery plan better/(worse)	Of which out /(under) performance
Network grant income	654	19	-
Franchised track access charges	393	(27)	(9)
Other single till income	40	(5)	(6)
Total income	**1,087**	**(13)**	**(15)**
Schedule 4	29	(13)	(14)
Schedule 8	12	(11)	(11)
Network operations	66	(14)	(14)
Support costs	107	(34)	(28)
Traction electricity, industry costs and rates	73	11	-
Maintenance	193	(31)	(33)
Total operating expenditure	**480**	**(92)**	**(100)**
Capex – Renewals	482	5	(20)
Capex – Enhancements	161	19	(1)
Total capital expenditure	**643**	**24**	**(21)**
Financing costs and other	281	25	-
Total expenditure	**1,404**	**(43)**	**(121)**
Financial performance measure (FPM)			**(136)**

Source: ORR analysis of Network Rail's data

Expenditure

3.2 Scotland region spent £1,404 million in 2021-22. Expenditure in each of the different categories in Table 3.1 is examined below.

Operating expenditure

Schedules 4 and 8

3.3 Schedule 4 costs in Scotland were £29 million in 2021-22, £13 million higher than the delivery plan, with £14 million of underperformance recognised. Network Rail has mostly attributed this to adverse weather, such as the storms on the network, and higher than anticipated compensation paid to operators.

3.4 The schedule 8 costs in Scotland were £12 million in 2021-22, £11 million higher than planned, with £11 million of financial underperformance recognised. This was due to the adverse weather in Scotland affecting the ability to run to timetable.

Network operations costs

3.5 Scotland region spent £66 million on network operations costs in 2021-22, £14 million higher than the delivery plan, and recognised £14 million of financial underperformance. This was mostly due to increased staff costs that were incurred to provide resilience during the pandemic.

Support costs

3.6 Support costs were £107 million in Scotland, with £28 million of financial underperformance recognised. This included £19 million of financial underperformance relating to regionally managed expenditure. This underperformance was associated with the implementation of the Putting Passengers First re-organisation and Covid-19 related costs. These were partly offset by reductions in performance-related staff pay. Centrally managed support costs allocated to Scotland region were £15 million higher than the delivery plan and £9 million of financial underperformance was recognised. This was due to a reallocation of a number of group finance costs to regions (including providing flexes to the regional teams for Putting Passengers First) and a reduction in savings on performance related pay (which are realised at the Network Rail group level).

Traction electricity, industry costs and rates

3.7 Scotland region incurred costs of £73 million in the year for the purchase of traction electricity, industry costs and rates. Traction electricity costs (£35 million) were largely offset by traction electricity income received from train operators. Industry

costs and rates included the ORR licence fee and railway safety levy (£3 million) and RSSB costs (£1 million), which were broadly in line with the delivery plan.

Maintenance

3.8 Scotland region spent £193 million on maintaining its railway infrastructure in 2021-22, £31 million more than its delivery plan for the year. Scotland has attributed its £33 million underperformance to its Covid-19 related expenditure (including cover for sick and self-isolating staff), expenditure on performance improvement initiatives, and additional expenditure on examinations of civil structures.

Renewals

3.9 Scotland region spent £482 million renewing its railway infrastructure in 2021-22, with £20 million of financial underperformance recognised in the year. This was mainly due to £25 million of financial underperformance in regionally managed expenditure. A significant portion of the underperformance related to signalling renewals. These projects tend to be more complex, running over multiple years, and incurring higher costs. These were affected by higher inflation rates than anticipated in the budgets. Additional costs were attributed to the pandemic, including the reprioritising of work, additional welfare, labour costs and PPE equipment. This was offset by £5 million of financial outperformance relating to centrally managed expenditure . This was due to the virtual insurance fund not being fully required as less significant incidents occurred on the network than anticipated.

Enhancements

3.10 Scotland region spent £161 million on enhancement projects in the year, £19 million lower than its delivery plan, mostly due to the deferral of work across a number of schemes.

Allocation of centrally managed costs to Scotland

3.11 Costs incurred by Network Rail's national functions ('centrally managed costs') are re-charged to regions in proportion to their use of these functions and in accordance with the ORR's regulatory accounting guidelines. These costs are included in Table 3.1. £413 million was recharged to Scotland which is less than the delivery plan assumption of £429 million[3].

[3] Note that Network Rails regulatory financial statements include £74 million of baseline risk expenditure compared to £0 million of actual expenditure. This is because the baseline of risk expenditure is not allocated to expenditure lines.

Income

3.12 Scotland region received £1,087 million of income in 2021-22. The majority of this was from Scottish Government network grant funding (£525 million), with £378 million coming from regionally managed track and other access charges and £175 million coming from other managed sources. Income financially underperformed by £15 million, this was primarily due to lower variable usage charges (£8 million) and property rental income (£9 million) as a result of reduced train paths and a lower footfall in stations.

Risk funding

3.13 Scotland received £329 million of ringfenced funding to manage financial risks in CP6. Over the first three years of CP6, the region has utilised most of this, with £46 million remaining at the end of 2021-22. During 2021-22, the region also provisionally decided to defer £53 million of planned renewals to improve its ability to manage financial risks in the final two years of CP6. These deferrals are on top of the £30 million of work that was deferred in 2020-21 and have reduced the region's forecast composite sustainability index (a measure of network condition) for the control period. Abortive costs and replanning of work has also impacted Network Rail's ability to deliver efficiency improvements.

3.14 As the region is funded separately by Transport Scotland, the region cannot make use of the pooled risk funds available to regions in England and Wales. We recognise that there is a high level of uncertainty around identifying future financial risks. However, difficult decisions may need to be taken if additional financial risks do emerge in Scotland. This also emphasises the need for Scotland to deliver its planned CP6 efficiency improvements.

Grant funding in Scotland

3.15 Oversight of the flexibility of grant payments within Scotland falls within the remit of Transport Scotland. Network Rail Scotland overspent against Transport Scotland's budget for the year by £8 million, which was managed within the Scottish Government's budget flexibility process. £75 million of funding rolled forward from the 2020-21 financial year has been allocated for use in later years of CP6.

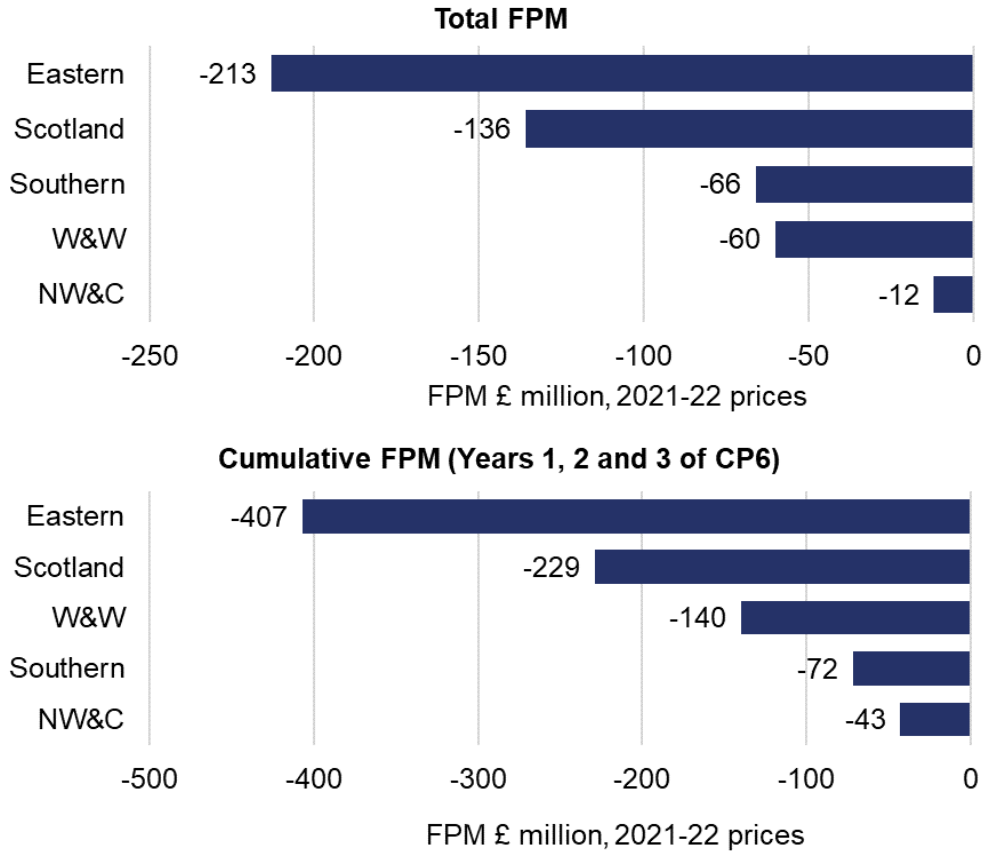
4. Regional comparisons

4.0 This chapter provides an analysis of the efficiencies and wider financial performance of each of Network Rail's five regions: Eastern, North West and Central (NW&C), Scotland, Southern, and Wales and Western (W&W)[4]. The financial information reported for each region includes its allocation of the national functions' income and costs. Caution is needed when comparing the relative performance of regions due to the differences in their physical, geographical, and operational characteristics.

Financial performance

4.1 Overall, Network Rail has underperformed by £487 million in 2021-22 compared to its delivery plan and by £891 million cumulatively over the first three years of the control period. As shown in Figure 4.1, all regions underperformed compared to their delivery plan for the year. Annex A provides detailed financial tables for each region.

Figure 4.1: Regional contributions to Network Rail's financial underperformance



Source: ORR analysis of Network Rail's data

[4] Chapter 3 provides a separate more detailed analysis for Scotland region. The region is also included in the analysis in this chapter to improve comparisons across regions.

Eastern

4.2 Eastern underperformed by £213 million in 2021-22 compared to its delivery plan and by £407 million cumulatively over the first three years of the control period.

4.3 Network Rail suggests the region's 2021-22 underperformance was the result of a:

a) **£91 million renewals underperformance.** This was due to additional spend on earthworks and work force safety programmes. The Covid-19 pandemic also impacted project delivery, especially within track and signalling portfolios. Eastern also faced inflationary cost increases and had difficulties correctly assessing project and access requirements.

b) **£85 million turnover underperformance.** Turnover underperformance was worse than that of other regions. This was due to slower than expected recovery of franchise track access charges and property rental income following the easing of Covid-19 restrictions.

c) **£51 million maintenance costs underperformance.** This was due to additional spend on compliance with Civils Examinations Framework Agreement (CEFA) standards, the Putting Passengers First (PPF) re-organisation, Covid-19 costs, additional vegetation management and rising contractor costs.

d) **£48 million enhancements underperformance**. Network Rail suggests enhancements performance was worse than other regions due to slower identification of suitable schemes with DfT and difficulties agreeing scope, design, and the cost of schemes, with activity being re-profiled into future years.

e) **£12 million operations costs underperformance** due to continued Covid-19 related expenditure and performance improvement initiatives.

f) **£3 million Schedule 4 underperformance** due to disruptive storms.

4.4 Network Rail suggests underperformance was partially offset by 2021-22 outperformance relating to:

a) **£73 million Schedule 8 outperformance.** This was due to better train performance, due to fewer passengers and services during the pandemic.

b) **£5 million support cost outperformance.** This was due to savings relating to reduced recruitment, performance-related pay, staff travel during the pandemic and consultancy expenses.

North West and Central

4.5 The region underperformed by £12 million in 2021-22 compared to its delivery plan and by £43 million cumulatively over the first three years of the control period.

4.6 Network Rail suggests the region's 2021-22 underperformance was the result of a:

a) **£52 million renewals underperformance**. This was due to underperforming LNW Plain Line initiatives and a loss of high output, signalling, and civils volumes. Additional costs related to underutilised economies of scale, inflation, performance improvement initiatives, overhead line equipment and increased drainage and invasive species investigative work.

b) **£33 million turnover underperformance.** This was due to slower than expected recovery of franchise variable usage track access charges and property rental income following the easing of Covid-19 restrictions.

c) **£14 million operations costs underperformance.** This was due to continued Covid-19 expenditure and performance improvement initiatives.

d) **£14 million maintenance costs underperformance.** This was due to the PPF re-organisation, directorate of engineering and asset management (DEAM) and CEFA compliance works, preparation for the Commonwealth Games, vegetation management, rising contractor costs and Covid-19 related costs.

e) **£8 million support costs underperformance.** This was due to costs associated with the PPF re-organisation, Covid-19, and project Alpha.

4.7 Despite its underperformance, the region performed closer to its plans than other regions. Network Rail suggests this is because 2021-22 underperformance was partially offset by the following outperformances:

a) **£60 million Schedule 8 outperformance.** This was due to exceptional levels of train performance. The Covid-19 pandemic has resulted in fewer passengers and fewer services, causing record levels of punctuality.

b) **£46 million Schedule 4 outperformance.** North West and Central was the only region with Schedule 4 outperformance. This was due to less disruption caused by adverse weather conditions. Reduced train services and passengers and efficient usage of access also contributed.

c) £3 million enhancements outperformance.

Scotland

4.8 Scotland underperformed by £136 million in 2021-22 compared to its delivery plan and by £229 million cumulatively over the first three years of the control period.

4.9 Network Rail suggests the region's 2021-22 underperformance was the result of a:

a) **£33 million maintenance costs underperformance.** This was due to additional spend ensuring compliance with CEFA standards, the PPF re-organisation, Covid-19 costs, and additional vegetation management.

b) **£28 million support costs underperformance.** This was due to the PPF re-organisation, with staff now situated more locally. There has also been Covid-19 related expenditure, and compensation costs and legal fees.

c) **£20 million renewals underperformance.** This was due to high output deferrals, underperforming signalling programmes and track worker safety standdowns. There were also inflationary increases on material and contractor rates, machine failures, access issues, and difficulties correctly assessing project requirements. Sunk costs and a loss of economies of scale have been a by-product of work cancellations and funding concerns.

d) **£15 million turnover underperformance.** This was due to slower than expected recovery of income from franchise variable usage charges and property rent following the easing of Covid-19 restrictions.

e) **£14 million operations costs underperformance.** This was due to Covid-19 related expenditure and performance improvement initiatives.

f) Unlike other regions, Scotland did not achieve any offsetting outperformances. **Schedules 4 & 8 underperformance was £14 million and £11 million, respectively**. This was due to timetable disruption caused by adverse weather. A higher level of compensation was also required for long distance operators (which attract higher compensation than the local operators) than estimated in the baseline assumptions.

4.10 When FPM is normalised by OMR expenditure, and track length, reflecting the different size and operational characteristics of each region, Scotland had the worst underperformance per £ of spend and per km of track of all the regions.

Southern

4.11 Southern underperformed by £66 million in 2021-22 compared to its delivery plan and by £72 million cumulatively over the first three years of the control period.

4.12 Network Rail suggests the region's 2021-22 underperformance was the result of an:

a) **£89 million maintenance costs underperformance.** Southern spent more than other regions on maintenance because of the costs associated with track defects around London Bridge, performance schemes on the Wessex route, trespass and welfare teams at stations and Covid-19 costs.

b) **£62 million renewals underperformance.** This was due to overspends in earthworks and work force safety programmes. There were also inflationary cost increases and difficulties correctly assessing project and access requirements. Vegetation and animal management works were also costly. The covid-19 pandemic also impacted project delivery.

c) **£30 million Schedule 4 underperformance.** This underperformance was far greater than other regions and was due to disruption following adverse weather and storms in February.

d) **£10 million turnover underperformance.** This was due to slower recovery than expected in property rental income and franchised track access income following the easing of Covid-19 restrictions.

4.13 Network Rail suggests underperformance was partially offset by 2021-22 outperformance relating to:

a) **£108 million Schedule 8 outperformance**. Schedule 8 outperformance was significantly higher than other regions because of better train performance and punctuality, as a result of fewer passengers and services during the pandemic.

b) **£10 million enhancements outperformance**.

c) **£6 million operations outperformance**. Southern is the only region with an operations cost outperformance. The region suggests this is due to efficiencies, a reduction in agency staff usage, adaptive working practices, and restructuring because of the PPF programme.

Wales and Western

4.14 The region underperformed by £60 million in 2021-22 compared to its delivery plan and by £140 million cumulatively over the first three years of the control period.

4.15 Network Rail suggests the region's 2021-22 underperformance was the result of:

a) **£23 million renewals underperformance.** This was due to deferrals within the track portfolio. There were also costly earthwork and safety programmes, Covid-19 costs, and inflationary cost increases. High Output underperformance was the result of access issues, reduced scope, and high fixed costs[5]. Ballast cleaning suffered from plant failure, safety issues, worker stand downs and a loss of volumes.

b) **£19 million maintenance costs underperformance.** This was due to the PPF re-organisation, Covid-19 costs, and additional vegetation management.

c) **£14 million enhancements underperformance.** Enhancements performance was worse than that of other regions due to slower identification of suitable schemes with DfT. There were difficulties agreeing appropriate scope, design, and cost of schemes, with some activity being reprofiled into future years.

d) **£12 million operations costs underperformance.** This was due to Covid-19 related expenditure and performance improvement initiatives.

e) **£9 million turnover underperformance.** This was due to slower recovery than expected in property rental income and franchised track access income following the easing of Covid-19 restrictions.

4.16 Network Rail suggests this was partially offset by some 2021-22 outperformance:

a) **£15 million Schedule 8 outperformance.** This was due to better train performance and punctuality, as a result of fewer passengers and services during the pandemic.

b) **£4 million support costs outperformance.** This was due to the PPF re-organisation, reduced recruitment, performance-related pay, staff travel and consultancy expenses.

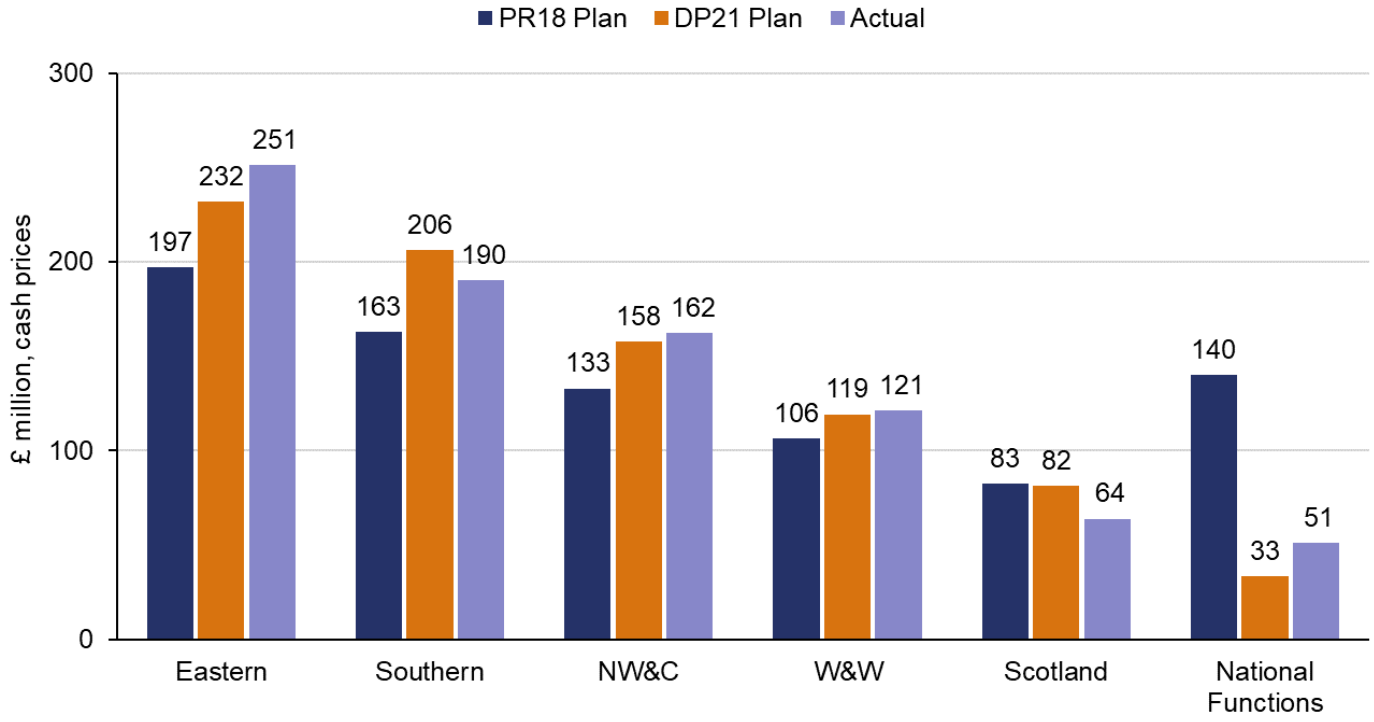
[5] High output machinery incurs a higher proportion of fixed costs than is typical for other types of renewals due to the nature of its operations. This applies equally to all regions.

Efficiencies

4.17 Recognising the increased financial pressures from unanticipated cost increases, Network Rail has increased its overall CP6 efficiency target from the £3.5 billion set in our 2018 periodic review (PR18) final determination to £4.0 billion, with the planned increase coming mostly from workforce reform initiatives. It has cumulatively delivered 48% of its £4.0 billion forecast within the first three years of the control period.

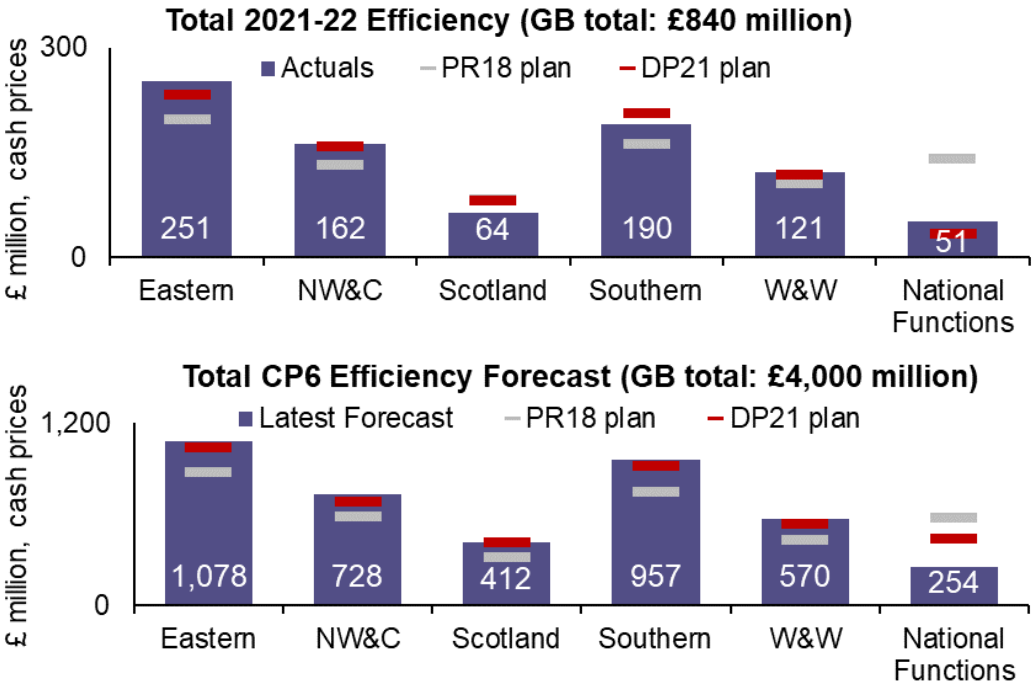
4.18 Figures 4.2 and 4.3 show that Eastern, North West and Central and Wales and Western exceeded their delivery plans for 2021-22. These regions remain confident that they will achieve their full CP6 efficiency targets.

Figure 4.2: Regional contributions to efficiency improvements, 2021-22



Source: ORR analysis of Network Rail's data

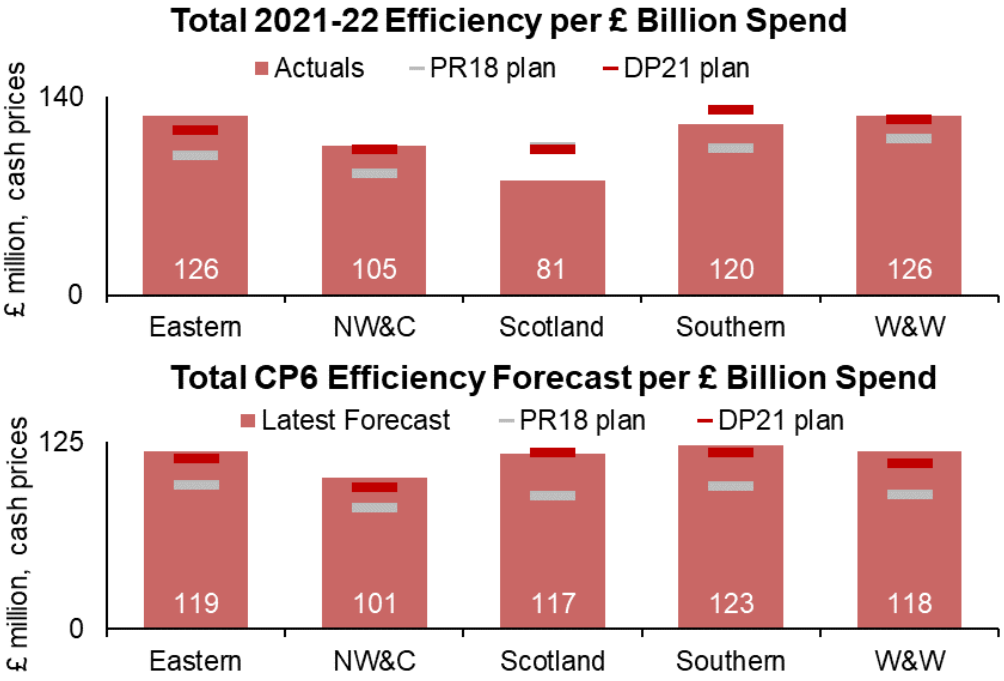
Figure 4.3: Regional contributions to 2021-22 and CP6 forecast efficiencies



Source: ORR analysis of Network Rail's data

4.19 Figure 4.4 normalises the information in Figure 4.3 for relevant expenditure, reflecting the different size and operational characteristics of each region.

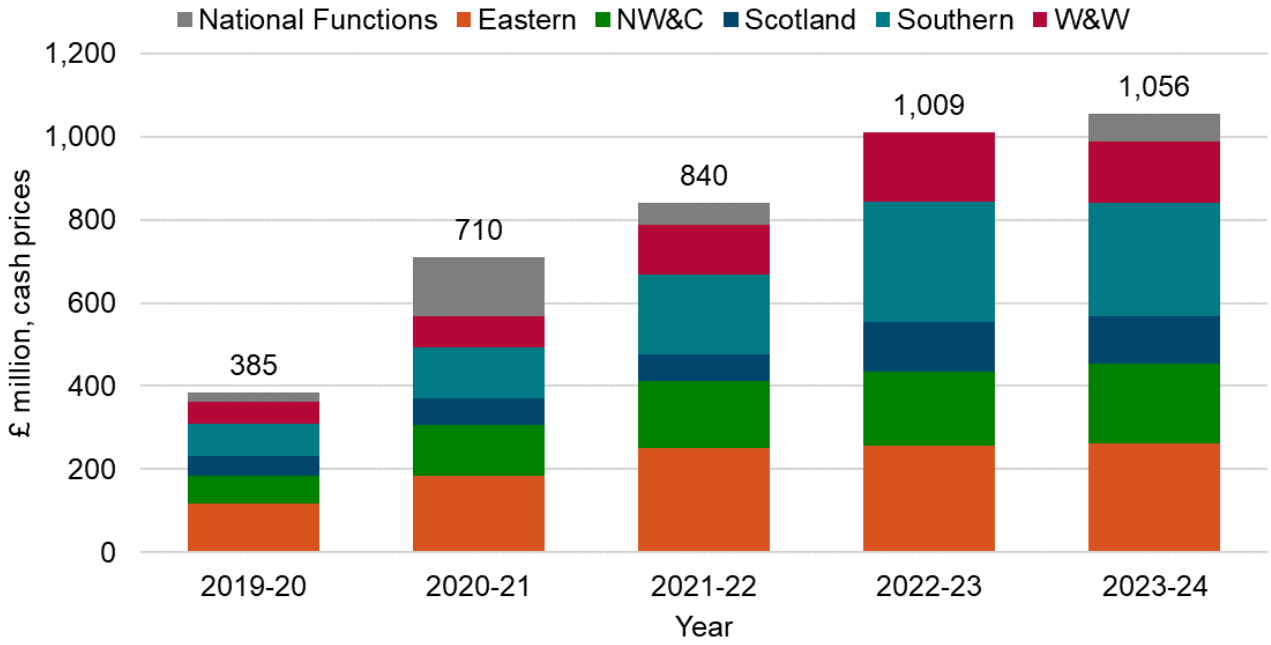
Figure 4.4: Regional contributions to 2021-22 and CP6 forecast efficiencies, normalised by OMR expenditure



Source: ORR analysis of Network Rail's data

4.20 Regional contributions to Network Rail's CP6 efficiency trajectory are shown in Figure 4.5.

Figure 4.5: Regional contributions to actual and forecast efficiency in each year of CP6.



Source: ORR analysis of Network Rail's data as of 31 March 2022.

Eastern

4.21 Eastern reported £251 million of efficiency improvements in 2021-22, exceeding its plan for the year by 8.3%. It is aiming to deliver £1,078 million of efficiency improvements in CP6. The largest three efficiency initiatives for the region in 2021-22 were improved contracting strategies, packaging of contracts, and rates (£47 million), reduced activity due to other new technologies (£36 million) and early contractor involvement, defined scope and minimum specification solutions (£26 million).

North West and Central

4.22 North West and Central reported £162 million of efficiency improvements in 2021-22, exceeding its plan for the year by 2.8%. It is aiming to deliver £728 million of efficiency improvements in CP6. The largest efficiency initiative for the region in 2021-22 was development of works delivery capabilities (£23 million). The region has made a concerted effort to inhouse some activities and develop its works delivery capabilities. Other regions have either already done this or did not consider that it would be right for their region. This initiative has provided significant benefits for North West and Central. Other large efficiency initiatives for the region include organisation restructure (not including PPF and modernisation) (£21 million) and improved contracting strategies, packaging, and rates (£17 million).

Scotland

4.23 Scotland reported £64 million of efficiency improvements in 2021-22, missing its 2018 Periodic Review (PR18) plan of £83 million, as well as its updated delivery plan of £82 million for the year, by around 21%. Scotland also achieved the least efficiencies per £ of OMR expenditure and per km of track of all the regions in 2021-22. This is despite its targets being as ambitious as those of other regions. We will continue to closely monitor and engage with Network Rail Scotland on its efficiency plans for the remainder of the control period. We have concerns that the region may find it difficult to achieve its plans to deliver £412 million of efficiencies in CP6. That said, Scotland did perform well on several efficiency initiatives in 2021-22. The largest three initiatives include early contractor involvement, defined scope, minimum specification solution (£14 million), supply chain organisation initiatives (£6 million) and optimisation of access to the network for engineering work (£5 million).

Southern

4.24 Southern reported £190 million of efficiency improvements in 2021-22, exceeding its 2018 periodic review (PR18) plan of £163 million, but missing its updated plan for the year by 7.8%. However, delivery plans for Southern are arguably more ambitious than those of other regions. Southern achieved more efficiencies per £ of OMR spend and per km of track than many other regions. The largest three efficiency initiatives for the region in 2021-22 were improved contracting strategies, packaging, and rates (£35 million), lean initiatives (£23 million) and workbank planning (£19 million). The Southern region has deferred its missed efficiencies into years 4 and 5 of the control period and is aiming to deliver £957 million of efficiencies in CP6.

Wales and Western

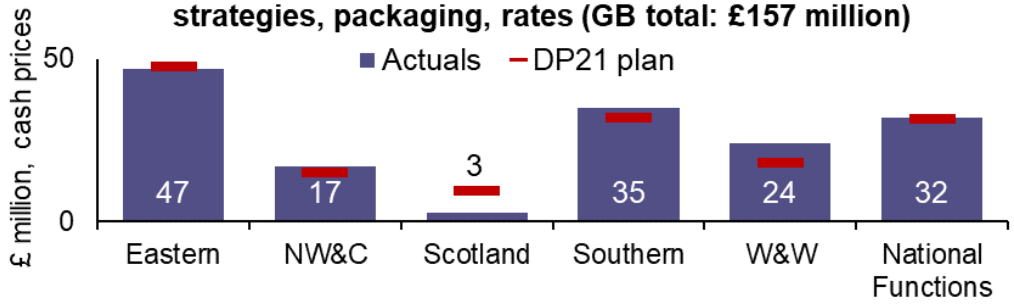
4.25 Wales and Western reported £121 million of efficiency improvements in 2021-22, exceeding its plan for the year by 1.5%. It is aiming to deliver £570 million of efficiency improvements in CP6. The largest three efficiency initiatives for the region in 2021-22 were improved contracting strategies, packaging, and rates (£24 million), optimisation of access (£23 million) and other innovation and technology benefits (£10 million).

The five largest efficiency initiatives in 2021-22

4.26 The next section shows regional contributions to the five largest efficiency initiatives overall in 2021-22. It also compares actual efficiency achievements to regional delivery plans for 2021-22 (DP21 plans). Network Rail has cautioned that there was an element of uncertainty around where efficiencies could be achieved when these plans were established. Some efficiencies have also been re-categorised and re-prioritised. These factors may contribute to the variances reported between actual efficiencies and planned efficiencies at an initiative level. The source for all the below graphs is ORR analysis of Network Rail data.

#1 Improved contracting strategies, packaging, and rates

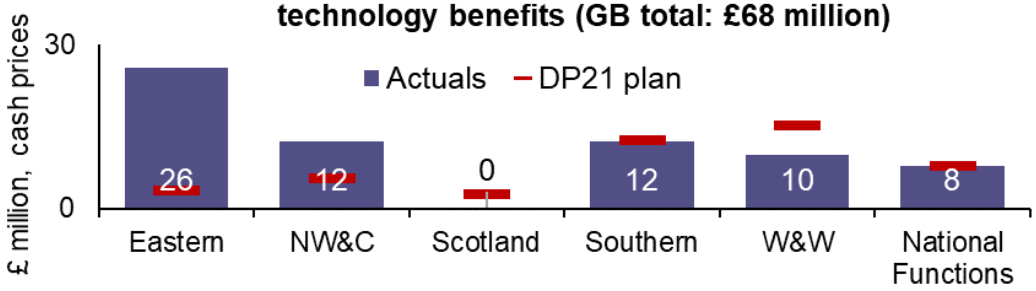
Figure 4.6: Efficiencies due to improved contracting strategies, packaging, rates (GB total: £157 million)



4.27 Network Rail achieved £157 million of efficiencies relating to improved contracting strategies, packaging, and rates in 2021-22. This is 2% above its 2021-22 delivery plan of £154 million. This was the largest efficiency initiative for Eastern, Southern and Wales and Western regions. They achieved this through negotiating improved terms and rates. Network Rail also improved its market research and tendering processes. Regional and central teams have also collaborated more closely. This has improved leverage and knowledge sharing and reduced contract duplication. Despite success with this initiative in many regions, Scotland missed its 2021-22 delivery plan for this initiative. This is partly due to delays with new contract frameworks.

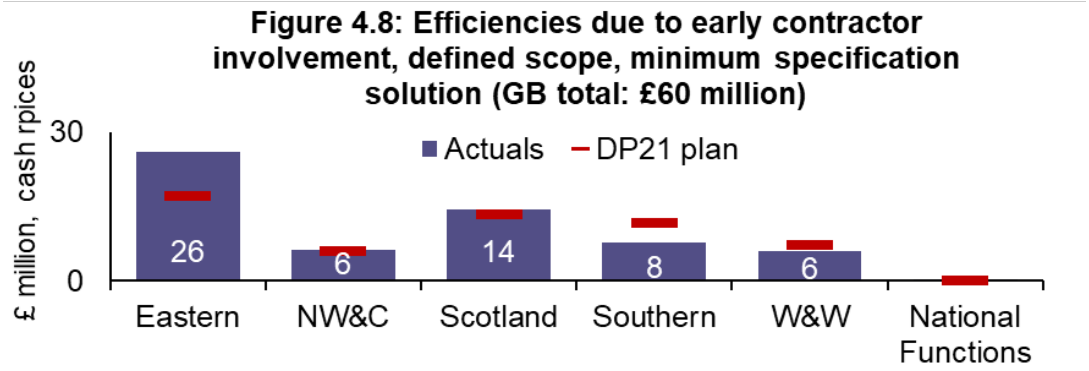
#2 Other innovation and technology benefits

Figure 4.7: Efficiencies due to other innovation and technology benefits (GB total: £68 million)



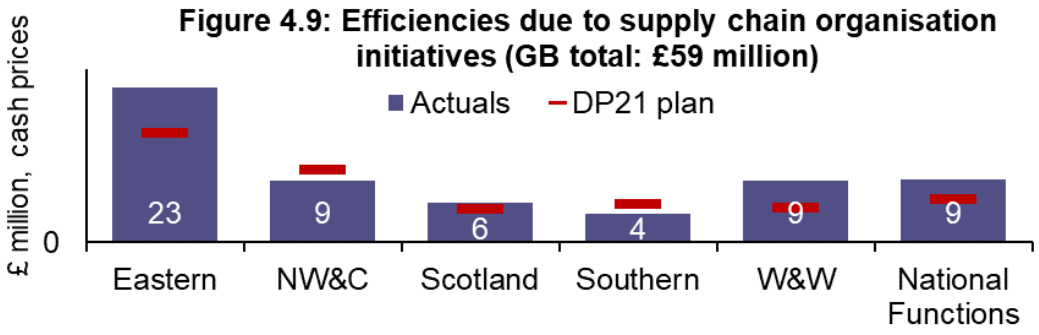
4.28 Network Rail achieved £68 million of efficiencies relating to innovation and technology benefits in 2021-22. This is 44% higher than its 2021-22 delivery plan of £47 million. This was the second largest efficiency initiative overall in 2021-22. Eastern did particularly well, achieving £23 million more efficiencies in this category than in its delivery plan. This was achieved through innovation projects. These include PLPR technologies to detect track defects, systems to improve asset intelligence and the use of drones. Despite success with this initiative in many regions, Scotland, and Wales and Western missed their 2021-22 delivery plans. Network Rail suggests there have been some delays to technology adoption, reprioritisation exercises and challenges quantifying and categorising benefits.

#3 Early contractor involvement, defined scope, minimum specification solution



4.29 Network Rail achieved £60 million of efficiencies relating to early contractor involvement in 2021-22. This is 9% higher than its 2021-22 delivery plan of £55 million. Eastern and Scotland did particularly well in this category. Network Rail achieved this through identifying opportunities to make savings through reduced scope, using minimum specification solutions and value engineering. Early involvement of contractors also gave Network Rail more time to shape strategy and avoid failures.

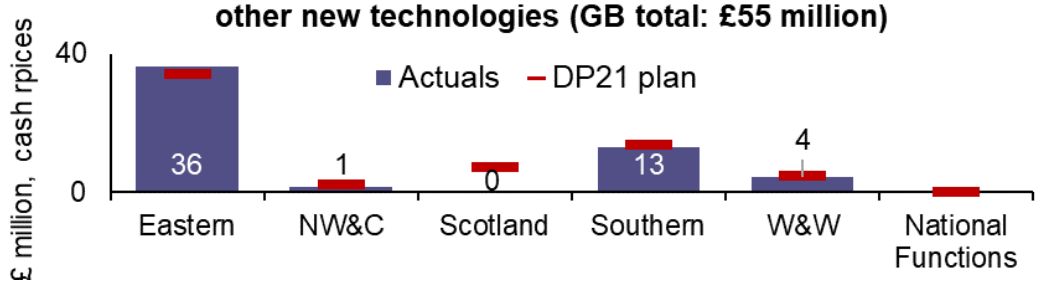
#4 Supply Chain Organisation initiatives



4.30 Network Rail has achieved £59 million of efficiencies relating to supply chain organisation initiatives in 2021-22. This is 24% higher than the 2021-22 delivery plan of £48 million. This grouping relates to savings generated through efficient management of vehicles and machinery, and through improved unit rates of plant and materials. Network Rail has achieved this through delivering economies of scale by centrally negotiating contracts for regions. Eastern has benefited the most from this efficiency category; whilst North West and Central and Southern regions are slightly behind their 2021-22 delivery plans. We will be working with the regions to try to gain a greater understanding of why this has happened.

#5 Reduced activity due to other new technologies

Figure 4.10: Efficiencies due to reduced activity due to other new technologies (GB total: £55 million)



4.31 Network Rail achieved £55 million of efficiencies relating to reduced activity due to new technologies in 2021-22. New technologies can reduce the level of renewals required to maintain the condition of assets. This efficiency category includes various projects, including using technologies designed to improve automation, accuracy, performance, and decision-making. Despite this initiative being the fifth largest overall, Network Rail achieved 11% fewer efficiencies as a result of this initiative than forecasted in its 2021-22 delivery plan of £62 million. Network Rail suggests there have been some delays to technology adoption, reprioritisation exercises and challenges quantifying and categorising benefits, particularly in Scotland and in North West and Central.

Underperforming efficiency initiatives

4.32 We highlight efficiency initiatives which underperformed against their delivery plans.

(a) Work bank planning

Network Rail achieved £51 million of efficiencies relating to workbank planning in 2021-22. Work bank stability is about ensuring that works which have been planned go ahead, and limited ad-hoc jobs are added to the workbank. It is thought that giving supply chains a fixed and predictable workbank will lead to improved unit rates, as it might avoid peaks and troughs in activity and optimise the utilisation of constrained resources. Overall, Network rail achieved 6% fewer workbank planning efficiencies than set out in its 2021-22 delivery plan. The Eastern and Southern regions did particularly well in improving the stability of the workbank. However, Scotland missed its 2021-22 delivery plan for the year by £9 million for this efficiency category. This is a result of changes to the work bank following business plan reviews and funding concerns. The region also suggests that delays in new signalling framework contracts have made it more difficult to achieve workbank efficiencies. Despite underperforming against its 2021-22 delivery plan for the year, Network Rail suggests it remains on track to achieve £245 million of efficiencies relating to workbank planning over the whole of the control period.

(b) *Lean initiatives*

Network Rail achieved £34 million of efficiencies relating to LEAN strategies in 2021-22. This is 25% below its 2021-22 delivery plan of £45 million. Lean initiatives refer to an installation of a culture of continuous improvement. An example of this is through The Better Every Day (BED) programme which enables, empowers, and encourages employees to make incremental improvements to their work to create value, with fewer resources and with less waste. Southern did particularly well in this category. However, most regions missed their DP21 plan. At the beginning of the control period, LEAN strategy initiatives were expected to be the second biggest efficiency initiative grouping and provide £305 million of efficiencies overall in CP6.Network Rail has since downgraded this CP6 forecast to £191 million. We will be working with the regions to try to gain a greater understanding of why LEAN initiatives have not been as successful as previously predicted.

(c) Rail Milling

Rail milling initiatives have provided £25 million of efficiencies in 2021-22, 15% behind the 2021-22 delivery plan. The rail milling train grinds away the damaged top layer of steel. This extends the life of the rails and delays the need for a full track renewal. Southern, North West and Central and Scotland performed worse than their 2021-22 delivery plan. The regions suggested this was due to reprioritisations. Network Rail now forecasts it will achieve £124 million of efficiencies relating to rail milling in CP6 as a whole. This is 3% behind its 2021-22 delivery plan.

(d) Intelligent Infrastructure

Network Rail has reported £12 million of efficiencies in 2021-22 from intelligent infrastructure initiatives. This is 25% behind the 2021-22 delivery plan. Intelligent Infrastructure initiatives refer to the use of machine learning and algorithms to capture, analyse and exploit asset data. This was intended to improve Network Rail's understanding of likely failures, and impacts and to help improve planning decisions about investment in assets. Eastern and North West and Central performed worse than their delivery plans. Network Rail suggest delays are due to delivery challenges associated with the Covid-19 pandemic, resistance to change, skills shortages and challenges quantifying benefits. At the beginning of the control period, Network Rail forecasted efficiencies of £118 million for CP6, this forecast has now been downgraded to £92 million.

(e) High Output

Network Rail has indicated that it has not achieved significant efficiencies from its investment in high output machinery. This is because high output machinery requires economies of scale to be beneficial and that delivery challenges so far in CP6 have meant that the associated efficiencies have not fully materialised. There are also high fixed costs if high output is not utilised. Network Rail is reviewing planned future expenditure in this area and the use of high output machinery going into CP7. Decisions need to be made quickly regarding assets and employee deployment.

(f) Pay, benefits and reform

Network Rail achieved around £34 million of efficiencies relating to pay, benefits and reform in 2021-22. Many planned pay, benefits and reform initiatives have yet to be realised and some have been deferred to the final two years of the control period. Discussions relating to these efficiencies are on-going, and Network Rail has forecast to achieve £451 million of efficiencies relating to reform initiatives and £197 million of efficiencies relating to pay and benefits by the end of the control period. Network Rail plans to achieve this through reduced pay awards, bonuses, voluntary redundancies, and removal of headcount from the business.

Leading indicators of efficient delivery

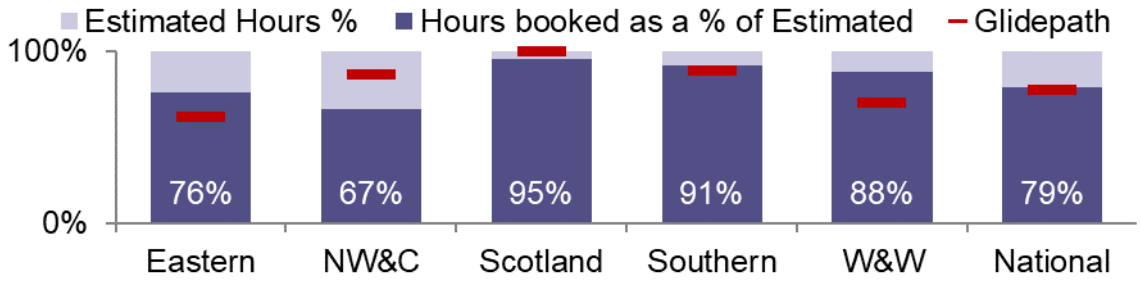
4.33 This section examines regions' preparedness for efficient delivery over the rest of CP6. As explained in Chapter 2, effective planning is important because it improves the robustness of the rail network and helps to provide a stable profile of work for Network Rail's supply chain. Better planning will also help Network Rail to deliver the increasing efficiency challenge over the remainder of CP6. Better documentation is also important to evidence that efficiencies have been delivered and are likely to be delivered in future.

4.34 Overall, Network Rail either exceeded or was very close to delivering its leading indicator targets for 2022-23. Although there are still some improvements which could be made, based on the evidence that we have reviewed, we consider that Network Rail seems to be sufficiently prepared to deliver the remainder of its CP6 target efficiencies. However, there are regional variations in Network Rail's preparedness for efficient delivery.

4.35 Please note that the national columns in the below charts relate to the national average and not the National Functions business unit. The source for the below charts is ORR analysis of Network Rail data.

Disruptive Access for 2022-23

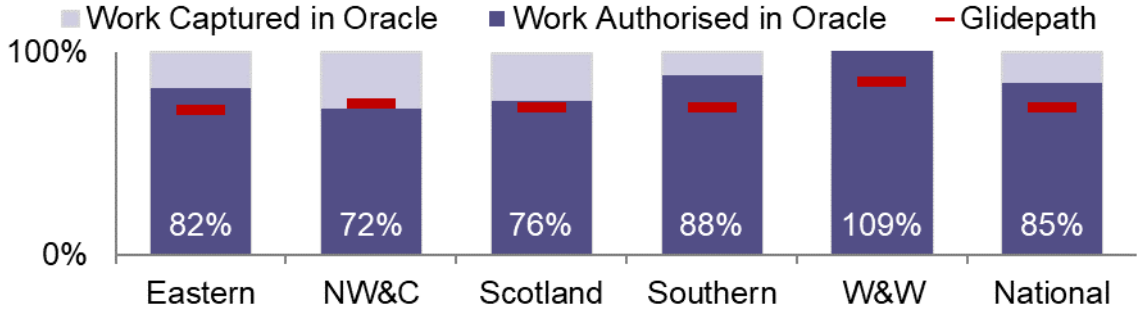
Figure 4.11: Disruptive Access 2022-23



4.36 Overall, 79% of the disruptive access required for year 4 of CP6 has now been booked. There has been proportionately less access booked than the same period last year. The ability to secure disruptive access was easier last year because of reduced services due to the pandemic. However, the percentage of disruptive access booked is at a similar level to pre-covid years and to its glidepath of 77%. Most regions finished the year ahead of their glidepaths. However, there were regional differences. Scotland fell slightly behind their ambitious glidepath of 100% with access booked falling to 95% of the estimated access required. North West and Central had only secured 67% of the estimated access required for year 4 against a glidepath of 86%. Some changes to the workbank, including deferral of works meant that further access needs to be agreed for these schemes.

Financial Authorisations for 2022-23

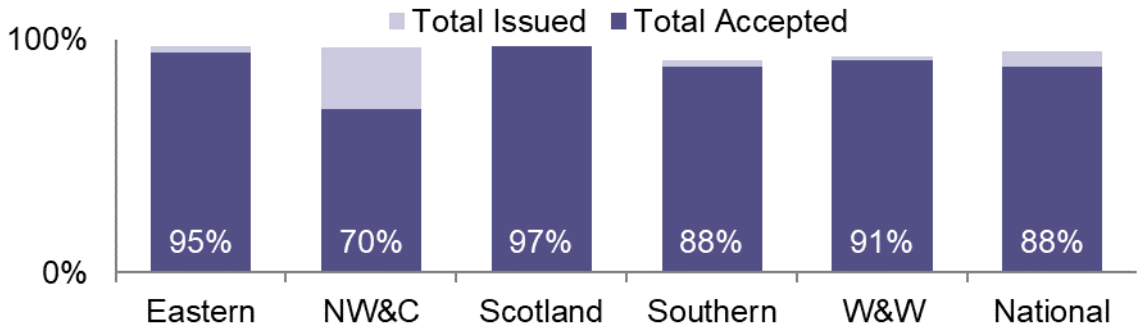
Figure 4.12: Financial Authorisations 2022-23



4.37 Overall, Network Rail's authorised spend as a percentage of planned spend has risen to 85% with a significant increase at the end of the year, due to bulk track authorisations. This is well above the National glidepath of 73% and represents a higher year-end position than in prior years. This puts Network Rail in a strong place to deliver its year 4 plans. Most regions are ahead of their glidepaths, with the exception of North West and Central, which has secured 72% authorisation against a glidepath of 75%. Its levels of authority at year end remain consistent with the levels achieved in prior years. North West and Central has confirmed that authority is in place for all schemes within the first quarter of 2022-23 and it is seeking to secure the remaining staged authorities.

Renewal Remits for 2022-23

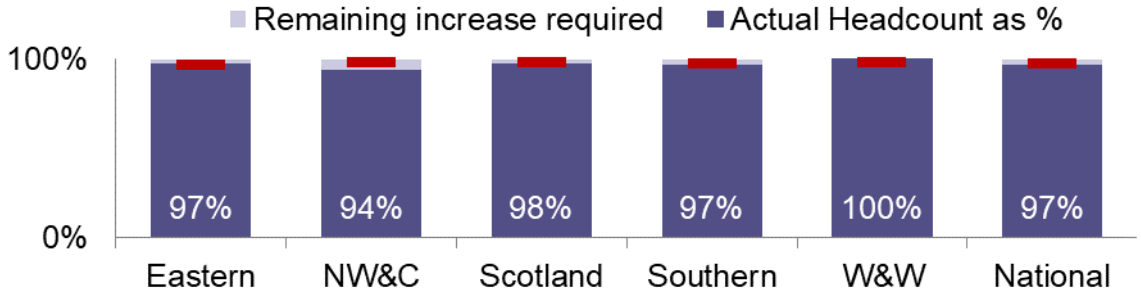
Figure 4.13: CP6 Year 4 Renewals Remits



4.38 Financial authorisation only provides a partial picture of renewals workbank planning while remits issued and accepted by the supply chain show progress made at an earlier stage of the planning lifecycle. This indicator shows the value of renewals remits accepted and issued to deliverers as a percentage of the value of remits required. Overall, Network Rail remit levels are 95% of the workbank remitted to deliverers. 88% of remits have been accepted. Underreporting of remits accepted remains an issue within North West and Central, which is reviewing its remit process, seeking to ensure the process is fit for all assets and schemes with minimal data handling.

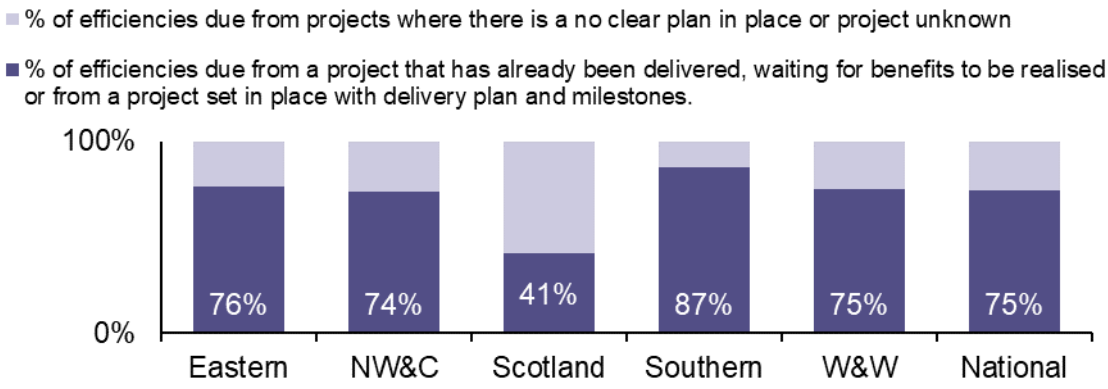
Maintenance Headcount for 2022-23

Figure 4.14: Maintenance Headcount 2022-23



4.39 Direct maintenance headcount has reduced throughout the year for all regions. The current economic climate means Network Rail has limited recruitment to essential or safety critical roles. A review of activity-based plans during the year has altered the headcount target reported against for year 4. This has led to the overall maintenance capacity measure improving to 97% at year-end, against a glidepath of 98%. Headcount is consistent across all regions. However, North West and Central is slightly behind other regions with only 94% of the maintenance headcount required. The shortfall is being managed through labour only subcontractors and overtime.

Figure 4.15: Efficiency Plans for 2022-23



4.40 Overall, Network Rail continues to plan toward the £4 billion target, with the business working towards identification and delivery of further initiatives. The above chart demonstrates the percentage of efficiencies forecasted to come from a project which has already been delivered (rated blue), or from a project with a clear delivery plan and with set milestones in place (rated green). 75% of Network Rail's overall efficiencies are due to come from projects with a green or blue rating. This suggests a high level of confidence in the planned efficiencies. Table 4.1 provides a more detailed breakdown of Network Rail's efficiency BRAG (blue, red, amber, green) ratings. The majority of efficiencies with no clear plan in place (rated as amber) relate to reform or modernising maintenance. Conversations surrounding these are still in progress. The greatest risk to Scotland's efficiency plans is the £83m reduction in renewals funding. This is as a result of limited remaining risk funding. This is discussed in greater detail within the Scotland chapter.

Table 4.1: Network Rail's assessment of the maturity of its 2022-23 efficiency plans (by value)

	Eastern	NW&C	Scotland	Southern	W&W	Total
Project delivered, waiting for benefits to be realised	25%	56%	18%	66%	22%	41%
Project in place with delivery plan and milestones	52%	18%	23%	20%	53%	34%
Strategic theme applied, commitment to deliver but no plan in place	4%	22%	44%	10%	23%	17%
Unknown	20%	4%	15%	4%	2%	9%
	100%	100%	100%	100%	100%	100%

Source: Network Rail

Annex A: Summary of key financial information

Great Britain

	2021-22			2020-21
£ million, 2021-22 prices	Actual	Delivery plan	Variance	Actual
Income	**A**	**B**	**C=A-B**	
Grant income	6,513	7,152	(639)	6,980
Franchised track access charges	2,599	2,893	(294)	2,590
Other single till income	659	681	(22)	521
Total income	**9,771**	**10,726**	**(955)**	**10,091**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	717	671	(46)	750
Support costs	968	880	(88)	1,005
Traction electricity, industry costs and rates	860	1,010	150	888
Maintenance	1,947	1,747	(200)	1,988
Schedule 4 compensation payments	324	344	20	303
Schedule 8 compensation payments	(189)	56	245	(364)
Total operating expenditure	**4,627**	**4,708**	**81**	**4,570**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	3,948	3,927	(21)	4,109
Enhancements	1,787	1,004	(783)	1,703
Total capital expenditure	**5,735**	**4,931**	**(804)**	**5,812**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	2,783	2,255	(528)	1,782
Corporation tax	-	65	65	55
Total other expenditure	2,783	2,320	(463)	1,837
Total expenditure	**13,145**	**12,548**	**(597)**	**12,219**
Other information				
RAB	76,313	n/a	n/a	72,689
Net debt	55,459	n/a	n/a	53,592
Gearing (net debt/RAB)	72.7%	n/a	n/a	73.7%

Source: Network Rail's regulatory financial statements

England and Wales

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Grant income	5,859	6,517	(658)	6,326
Franchised track access charges	2,206	2,473	(267)	2,196
Other single till income	619	636	(17)	488
Total income	**8,684**	**9,626**	**(942)**	**9,010**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	651	619	(32)	687
Support costs	861	807	(54)	907
Traction electricity, industry costs and rates	787	926	139	817
Maintenance	1,754	1,585	(169)	1,800
Schedule 4 compensation payments	295	328	33	278
Schedule 8 compensation payments	(201)	55	256	(361)
Total operating expenditure	**4,147**	**4,320**	**173**	**4,128**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	3,466	3,440	(26)	3,612
Enhancements	1,626	824	(802)	1,534
Total capital expenditure	**5,092**	**4,264**	**(828)**	**5,146**
Risk (Centrally held)	-	184	184	-
Risk (Route-controlled)	-	128	128	-
Risk (Contingent asset management funding)	-	203	203	-
Total risk expenditure	**-**	**515**	**515**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	2,502	2,030	(472)	1,602
Corporation tax	0	58	58	49
Total other expenditure	2,502	2,088	(414)	1,651
Total expenditure	**11,741**	**11,187**	**(554)**	**10,925**
Other information				
RAB	68,356			65,118
Net debt	49,875			48,192
Gearing (net debt/RAB)	73.0%			74.0%

Source: Network Rail's regulatory financial statements

Scotland

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Grant income	654	635	19	654
Franchised track access charges	393	420	(27)	394
Other single till income	40	45	(5)	33
Total income	**1,087**	**1,100**	**(13)**	**1,081**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	66	52	(14)	63
Support costs	107	73	(34)	98
Traction electricity, industry costs and rates	73	84	11	71
Maintenance	193	162	(31)	188
Schedule 4 compensation payments	29	16	(13)	25
Schedule 8 compensation payments	12	1	(11)	(3)
Total operating expenditure	**480**	**388**	**(92)**	**442**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	482	487	5	497
Enhancements	161	180	19	169
Total capital expenditure	**643**	**667**	**24**	**666**
Risk (Centrally held)		7	7	
Risk (Route-controlled)		67	67	
Risk (Contingent asset management funding)		0	0	
Total risk expenditure	**0**	**74**	**74**	**0**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	281	225	(56)	180
Corporation tax	0	7	7	6
Total other expenditure	281	232	(49)	186
Total expenditure	**1,404**	**1,361**	**(43)**	**1,294**
Other information				
RAB	7,957			7,571
Net debt	5,584			5,400
Gearing (net debt/RAB)	70.2%			71.3%

Source: Network Rail's regulatory financial statements

Southern

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Grant income	1,587	1,762	(175)	1,440
Franchised track access charges	652	719	(67)	650
Other single till income	266	236	30	156
Total income	**2,505**	**2,717**	**(212)**	**2,246**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	180	186	6	195
Support costs	207	196	(11)	208
Traction electricity, industry costs and rates	244	288	44	271
Maintenance	453	377	(76)	468
Schedule 4 compensation payments	104	82	(22)	91
Schedule 8 compensation payments	(104)	4	108	(157)
Total operating expenditure	**1,084**	**1,133**	**49**	**1,076**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	923	931	8	1,022
Enhancements	168	112	(56)	203
Total capital expenditure	**1,091**	**1,043**	**(48)**	**1,225**
Risk (Centrally held)	-	45	45	-
Risk (Route-controlled)	-	42	42	-
Risk (Contingent asset management funding)	-	57	57	-
Total risk expenditure	**-**	**144**	**144**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	632	512	(120)	405
Corporation tax	0	17	17	15
Total other expenditure	632	529	(103)	420
Total expenditure	**2,807**	**2,849**	**42**	**2,721**
Other information				
RAB	16,696			15,953
Net debt	12,486			12,295
Gearing (net debt/RAB)	74.8%			77.1%

Source: Network Rail's regulatory financial statements

Wales and Western

	2021-22			2020-21
£ million, 2021-22 prices	Actual	Delivery plan	Variance	Actual
Income	**A**	**B**	**C=A-B**	
Grant income	916	1,029	(113)	961
Franchised track access charges	458	500	(42)	472
Other single till income	85	86	(1)	74
Total income	**1,459**	**1,615**	**(156)**	**1,507**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	98	86	(12)	96
Support costs	145	140	(5)	157
Traction electricity, industry costs and rates	84	98	14	91
Maintenance	267	258	(9)	289
Schedule 4 compensation payments	34	36	2	32
Schedule 8 compensation payments	(3)	12	15	(48)
Total operating expenditure	**625**	**630**	**5**	**617**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	563	637	74	583
Enhancements	258	25	(233)	236
Total capital expenditure	**821**	**662**	**(159)**	**819**
Risk (Centrally held)	-	34	34	-
Risk (Route-controlled)	-	29	29	-
Risk (Contingent asset management funding)	-	30	30	-
Total risk expenditure	**-**	**93**	**93**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	532	447	(85)	341
Corporation tax	0	8	8	6
Total other expenditure	532	455	(77)	347
Total expenditure	**1,978**	**1,840**	**(138)**	**1,783**
Other information				
RAB	13,824			13,157
Net debt	10,534			10,239
Gearing (net debt/RAB)	76.2%			77.8%

Source: Network Rail's regulatory financial statements

Eastern

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Grant income	1,916	2,126	(210)	2,323
Franchised track access charges	558	663	(105)	554
Other single till income	139	175	(36)	145
Total income	**2,613**	**2,964**	**(351)**	**3,022**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	212	200	(12)	239
Support costs	259	242	(17)	271
Traction electricity, industry costs and rates	287	340	53	273
Maintenance	575	521	(54)	594
Schedule 4 compensation payments	100	93	(7)	114
Schedule 8 compensation payments	(37)	36	73	(74)
Total operating expenditure	**1,396**	**1,432**	**36**	**1,417**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	1,142	1,034	(108)	1,172
Enhancements	869	394	(475)	804
Total capital expenditure	**2,011**	**1,428**	**(583)**	**1,976**
Risk (Centrally held)	-	59	59	-
Risk (Route-controlled)	-	17	17	-
Risk (Contingent asset management funding)	-	72	72	-
Total risk expenditure	**-**	**148**	**148**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	747	597	(150)	477
Corporation tax	0	19	19	16
Total other expenditure	747	616	(131)	493
Total expenditure	**4,154**	**3,624**	**(530)**	**3,886**
Other information				
RAB	21,426			20,385
Net debt	15,044			14,275
Gearing (net debt/RAB)	70.2%			70.0%

Source: Network Rail's regulatory financial statements

North West and Central

	2021-22			2020-21
£ million, 2021-22 prices	Actual	Delivery plan	Variance	Actual
Income	**A**	**B**	**C=A-B**	
Grant income	1,440	1,600	(160)	1,602
Franchised track access charges	538	591	(53)	520
Other single till income	129	139	(10)	113
Total income	**2,107**	**2,330**	**(223)**	**2,235**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	161	147	(14)	157
Support costs	250	229	(21)	271
Traction electricity, industry costs and rates	172	200	28	182
Maintenance	459	429	(30)	449
Schedule 4 compensation payments	57	117	60	41
Schedule 8 compensation payments	(57)	3	60	(82)
Total operating expenditure	**1,042**	**1,125**	**83**	**1,018**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	838	838	0	835
Enhancements	331	293	(38)	291
Total capital expenditure	**1,169**	**1,131**	**(38)**	**1,126**
Risk (Centrally held)	-	46	46	-
Risk (Route-controlled)	-	40	40	-
Risk (Contingent asset management funding)	-	44	44	-
Total risk expenditure	**-**	**130**	**130**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	591	474	(117)	379
Corporation tax	0	14	14	12
Total other expenditure	591	488	(103)	391
Total expenditure	**2,802**	**2,874**	**72**	**2,535**
Other information				
RAB	16,410			15,623
Net debt	11,811			11,383
Gearing (net debt/RAB)	72.0%			72.9%

Source: Network Rail's regulatory financial statements

National functions

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Grant income	6,513	7,152	(639)	6.980
Franchised track access charges	115	117	(2)	557
Other single till income	29	25	4	39
Total income	**6,657**	**7,294**	**(637)**	**7,576**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	25	23	(2)	22
Support costs	632	660	28	617
Traction electricity, industry costs and rates	35	36	1	882
Maintenance	53	65	12	65
Schedule 4 compensation payments	(9)	53	62	16
Schedule 8 compensation payments	11	11	0	(51)
Total operating expenditure	**747**	**848**	**101**	**1,551**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	553	539	(14)	540
Enhancements	16	(37)	(53)	167
Total capital expenditure	**569**	**502**	**(67)**	**707**
Risk (Centrally held)	-	191	191	-
Risk (Route-controlled)	-	195	195	-
Risk (Contingent asset management funding)	-	203	203	-
Total risk expenditure	**-**	**589**	**589**	**-**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	2,783	2,255	(528)	1,782
Corporation tax	-	65	65	55
Total other expenditure	**2,783**	**2,320**	**(463)**	**1,837**
Total expenditure	**4,099**	**4,259**	**160**	**4,095**

Source: Analysis of Network Rail's regulatory financial statements

Wales

Note: the numbers set out below are discussed in the above commentary as part of the Wales and Western region.

	2021-22			2020-21
£ million, 2021-22 prices	**Actual**	**Delivery plan**	**Variance**	**Actual**
Income	**A**	**B**	**C=A-B**	
Network grant income	265	n/a	n/a	262
Franchised track access charges	120	n/a	n/a	109
Other single till income	9	n/a	n/a	8
Total income	**394**	n/a	n/a	**378**
Operating expenditure	**A**	**B**	**C=B-A**	
Network operations	35	n/a	n/a	32
Support costs	55	n/a	n/a	56
Traction electricity, industry costs and rates	18	n/a	n/a	19
Maintenance	94	n/a	n/a	89
Schedule 4 compensation payments	2	n/a	n/a	5
Schedule 8 compensation payments	11	n/a	n/a	(5)
Total operating expenditure	**215**	n/a	n/a	**196**
Capital expenditure	**A**	**B**	**C=B-A**	
Renewals	222	n/a	n/a	203
Enhancements	10	n/a	n/a	16
Total capital expenditure	**232**	n/a	n/a	**219**
Risk (Centrally held)	n/a	n/a	n/a	n/a
Risk (Route-controlled)	n/a	n/a	n/a	n/a
Risk (Contingent asset management funding)	n/a	n/a	n/a	n/a
Total risk expenditure	**n/a**	n/a	n/a	**n/a**
Other expenditure	**A**	**B**	**C=B-A**	
Financing costs and other	135	n/a	n/a	82
Corporation tax	-	n/a	n/a	2
Total other expenditure	**135**	**n/a**	**n/a**	**84**
Total expenditure	**581**	**n/a**	**n/a**	**498**
Other information				
RAB	3,906			3,716
Net debt	2,777			2,591
Gearing (net debt/RAB)	71.1%			69.7%

Source: Network Rail's analysis of industry financials

Annex B: Link between efficiency and financial performance

A.1 Several measures can be used to report on a company's financial performance and there is no single right or wrong measure. The measures are not exclusive and can be complementary to provide a more rounded assessment. Our assessments focus on two measures: efficiency and the financial performance measure (FPM).

A.2 Consistent with general use in economic regulation, we use the term 'efficiency' to refer to changes over time of the cost of Network Rail's core business activities. These are Network Rail's activities of operating, maintaining, and renewing the rail network, and supporting functions such as human resources and finance. These are broadly repeatable activities, which makes them easier to compare over time.

A.3 We use the term 'financial performance' to assess both core business activities and wider activities that generate income (such as property income) and expenditure (such as enhancements to the network). Financial performance is a comparison of income and expenditure to the financial assumptions in a baseline such as in a business plan or regulatory determination. Other things being equal, if Network Rail has achieved the expected level of efficiency improvements in a business plan, it will report neither out nor under-performance against that plan. However, in the real world, other things do result in differences between the reporting of efficiency and FPM. These include:

(i) items of income and expenditure that are included in FPM but not efficiency reporting.

(ii) external factors that can result in cost increases ('headwinds') and cost decreases ('tailwinds') such as changes to employment legislation which are outside of Network Rail's control. These external factors are reported separately to efficiency. However, these are all considered for FPM, so, for example, a headwind will negatively affect FPM.

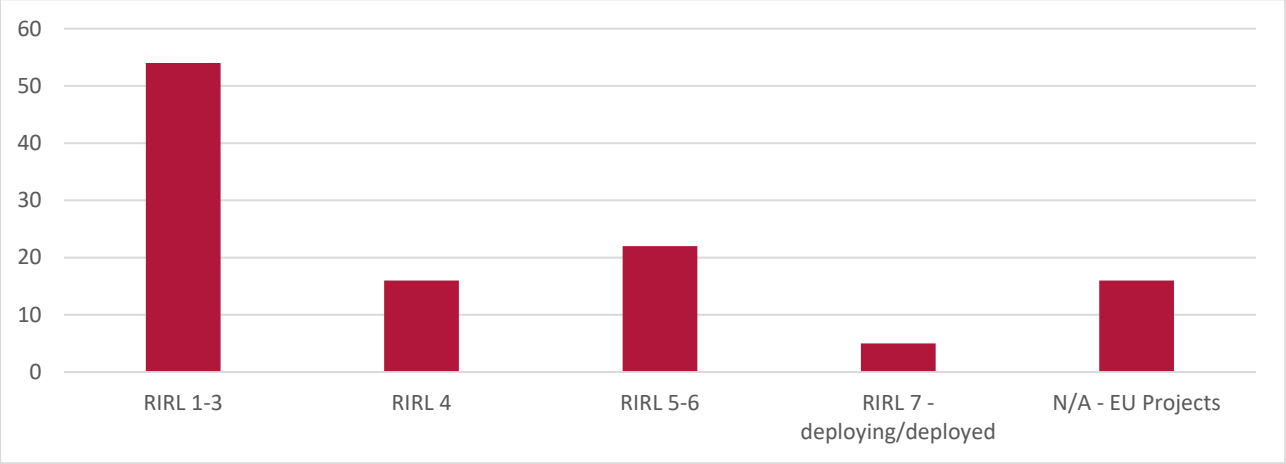
(iii) FPM adjusts for future cost increases resulting from business decisions made during the current financial year. For example, the costs of a major re-signalling project may be expected to increase in the next financial year due to a purchase decision made during the current financial year. This will result in negative financial performance being reported during the current financial year (consistent with the accruals accounting concept). Efficiency reporting does not adjust for this; and

(iv) the additional cost of any changes to planned renewals work during a year are recorded as negative FPM, whereas the cost of the work avoided is recorded as FPM neutral. This is because FPM measures performance against the delivery plan and is designed to discourage regions from making late changes to planned work during the year.

Annex C: Progress of research and development projects

A.4 Network Rail uses the rail industry readiness level (RIRL) as a measure of how ready a new product or system is for deployment. As shown in Figure C1, most of Network Rail's CP6 research and development (R&D) projects are in RIRL stages 1 to 3 with a further 38 projects in stages 4 to 6. 16 projects are European R&D programmes, which sit outside the RIRL. Overall, we consider that good progress has been made developing Network Rail's CP6 R&D programme in 2021-22. We will continue to monitor and report on the progress of projects through RIRL levels over the next year.

Figure C1: Rail industry readiness levels of Network Rail's R&D projects



Key	Stage	Description
RIRL 1 to 3	Conception, Opportunity Development and Proof of Concept	Identification of need and potential benefits, quantification of that benefit, verification of demand, proof of concept
RIRL 4	Validation	Technology verified and tested against user requirements, market testing and/or laboratory validation
RIRL 5 to 6	System Demonstrator and Operational transition	Prototype demonstrated and developed, supplied to required standard. Commercial agreements progressed
RIRL 7	Initial Deployment	First of Class asset deployment for operational usage, low rate of production ramping up
RIRL 8 to 9	1 Roll Out and Whole Life Management	2 Full rate production, on-going continuous improvement, reliability, and growth

Source: Network Rail

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