OFFICE OF RAIL REGULATION

Network Rail Monitor

Quarters 1-2 of Year 1 of CP5
1 April to 11 October 2014

20 November 2014

Contents

Executive summary

This is the first Network Rail Monitor of Control Period 5 (CP5) which runs from 1 April 2014 to 31 March 2019. It provides ORR's assessment of Network Rail's performance over the first half of 2014-15.

Safety

Network Rail has made good progress in reducing safety risk at level crossings. However, in other areas such as track worker safety there is significant scope for improvement. Track quality also needs to be better managed and Network Rail needs to maintain a focus on wider risks including those arising from fatigue and excessive working hours.

Performance and punctuality

Network Rail entered CP5 at a lower performance point than anticipated and it put in place a plan to return performance to targeted levels by 31 March 2016. Although it is largely delivering on the plan's milestones, these are not improving performance, which is behind the plan's trajectory.

Train cancellations

East Coast Mainline performance has been strong – the three long distance operators on this route are all exceeding their cancellations and severe lateness (CaSL) targets. However, performance for other operators is behind plan with 13 out of 18 franchised operators short of their targets for CaSL.

Asset Management

Network Rail has reported delivering less work than it planned to do – both in maintenance and renewals. We are holding the company to account for the impact of its under-delivery on sustainability, and seeking assurance that the lost work will be recovered later in the control period. The quality of Network Rail's asset data needs to improve.

Enhancements

Network Rail's performance on delivery of its enhancement portfolio has worsened – following a period of relatively successful delivery in CP4. During the first two quarters, 11 out of 44 regulated milestones were missed although the majority of these had low or zero impact on customers.

Expenditure and finance

Network Rail has underperformed against its budget by £40m (year to date) and forecasts an overspend of £112m for 2014-15. ORR expects the company to underperform the regulatory financial performance measure by around £300m in 2014-15.

Data Quality

Our evidence shows that the quality of data that Network Rail relies upon to plan and manage works on Britain's railways does not meet the required standards in some areas. ORR has written to Network Rail requiring a proposal from the company to address this.

Overview

Health and safety

Network Rail has made good progress in reducing safety risk at level crossings, mainly through a programme of closures but also through more effective risk assessment and the implementation of new technology and better systems.

However, in other areas there is significant scope for improvement. Steps are being taken to improve track worker safety but we need to see better coordination and more effective implementation. Track quality needs to be better and more sustainably managed and we need to be assured that a safe system of work is in place covering electrification projects and working with electrical systems more generally. Network Rail also needs to maintain a relentless focus on wider health and safety risk including those arising from fatigue and excessive working hours.

Train service performance

Work by Passenger Focus shows that punctuality remains the single most important driver of passenger satisfaction, underlining the need for a continuing focus on performance delivery.

Network Rail's worse than expected performance in Control Period 4 (CP4) meant that it entered CP5 at a lower performance point than anticipated. As a result, the company put forward a plan, which we agreed (the CP5 Performance Plan) to return performance to targeted levels by 1 April 2016. We agreed that, as well as monitoring other inputs such as maintenance and renewals volumes, we would monitor delivery against this plan rather than national level performance during those first two years.

However, Network Rail has fallen short of its own performance trajectory as specified in its plan. Although it is largely delivering on the activity milestones in the plan, these are not having the effect on performance the company anticipated. We expect Network Rail to assess the reasons for this and to adjust the plan as appropriate and to that end we note that additional activity milestones have been added to the plan in Quarter 2

We are continuing to hold Network Rail to account for its delivery to passengers as specified in Performance Strategies. Recent performance of the East Coast Mainline has been strong and significantly up on the levels achieved in 2013-14. The three long distance operators on this route are all exceeding their PPM and CaSL targets. Network Rail needs to ensure that lessons learnt from this strong performance are applied across the network.

However, most other operators are behind their performance targets with 13 out of 18 franchised operators short of their targets for CaSL. Furthermore, our projections indicate that three operators (Southern, Southeastern and First Transpennine Express (FTPE)) will fall short of the agreed performance strategy targets for PPM and CaSL. We have asked the relevant Network Rail routes to update us on their plans to ensure these key regulatory targets are delivered.

Freight performance is strong, currently 1.2 percentage points (pp) ahead of its regulatory target of 92.5%.

Asset management

In the first two quarters of 2014-15, Network Rail has reported delivering less work than it planned to do, in both maintenance and renewals. We are holding the company to account for the impact of its under-delivery on sustainability, and seeking assurance that the lost work will be recovered later in the control period.

The quality of Network Rail's asset data needs to improve to meet the challenge we have set out in the CP5 Final Determination, and as stated below the quality of management information is not of the required standard. However the company has met key milestones on the delivery of its ORBIS (Offering Rail Better Information Services) programme and we are seeing positive signs that it will drive improvements in safety, performance and efficiency.

Developing the network

In the first six months of CP5 Network Rail's performance on delivery of its enhancement portfolio has worsened – following a period of relatively successful delivery in CP4. During the first two quarters, 11 out of 44 regulated milestones were missed although the majority of these had low or zero impact on customers. Looking ahead, this has raised serious questions as to how the company will deliver the ambitious programme expected in CP5, particularly the electrification projects.

We have escalated a set of specific concerns with Network Rail which it is addressing through an improvement plan. We expect this plan to be appropriately managed and resourced and we will be holding Network Rail to account for its delivery.

In the last periodic review we established the Enhancements Cost Adjustment Mechanism (ECAM) to determine more accurately the efficient level of funding Network Rail receives for its enhancements programme. We recently published an update on our website and will continue to do so as it progresses. So far a number of individual cost estimates, particularly for electrification, have been higher than originally thought at the time of Network Rail's Strategic Business Plan, when the projects were at a very early stage of development. The ECAM governance process is also designed progressively to check overall affordability as costs for individual projects become more certain.

Expenditure and finance

Network Rail has overspent its budget by £40m (year to date) and is now forecasting an overspend of £112m for the 2014-15. We currently expect the company to underperform the regulatory financial performance measure by around £300m in 2014-15. This measure compares Network Rail's actual income and expenditure in CP5 to the financial assumptions in our PR13 determination of the company's available funding in CP5. The measure takes into account whether Network Rail has delivered its required outputs.

Information and data quality

Our approach to holding Network Rail to account for delivering its outputs in CP5 is more forward-looking than previously and based on an understanding of the risks to rising and sustained good performance. We are making greater use of data on precursors of performance, focusing on what the measures tell us is likely to happen to Network Rail performance in the future - rather than what has already happened.

This strategy is reliant on good quality data in all areas. It has however become clear as we have reviewed the data flows that the quality of management information we receive from Network Rail in many areas (e.g. maintenance and renewals volumes, enhancements delivery and financial data) is not of the required standard and this is hampering our efforts to analyse likely future trends in performance. We have written to Network Rail setting out our concerns and requiring a proposal from the company to address them. We will continue to engage with the route delivery teams and to use the intelligence gained from our inspectors on the ground.

Health and safety

Track quality

In the latter half of 2013 we saw an increasing trend in repeat twist faults and in November 2013 we served an Improvement Notice requiring Network Rail to better understand why remedial work was not always having a long lasting effect, and to address the issues found. The notice focused on Scotland, but it is relevant to other routes.

In response to the notice, Network Rail developed a 24-point plan setting out national and route-specific activities for Scotland which will be rolled out to other routes as necessary. The plan uses newly developed national risk- based track geometry fault reduction targets to drive improvement. Having seen a rise in repeat track twist faults, Anglia Route has begun implementing an amended version of the plan.

We are monitoring the implementation of the plan in Scotland and Anglia, and intend to conduct further inspection of track geometry performance in all routes.

During quarters 1 and 2 of 2014-15 we continued with our programme of proactive inspections, for example to evaluate Network Rail's day to day hot weather preparedness and its monitoring and mitigation arrangements at sample locations. We also investigated track buckle incidents on the London North Eastern (LNE) route and have followed these up with local Network Rail managers.

At this stage we are satisfied that immediate safety risk arising from poor track geometry is being controlled adequately, but in an inefficient and largely reactive way that sometimes does not address the underlying causes of faults and misses opportunities to address identified weaknesses. This increases the reliance on routine inspection and maintenance activities to manage risk.

Whilst Network Rail's response to our improvement notice will increase its focus on the management of track geometry, it is currently unclear if its recovery plans are achievable. Network Rail has set route delivery targets and we will continue to monitor this area closely.

We served an improvement notice on Network Rail in June 2014 following our investigation into the freight train derailment at Gloucester the previous October. The notice covered irregularities around resourcing and compliance with track maintenance standards. We will monitor progress and will review the position in January 2015.

Electrification

There have been a number of serious incidents on the North West Electrification Phase 2 Project emphasising the need for a safe system of work in this critical aspect of enhancements. This is a priority for ORR and our inspectors working with a specialist from the Health and Safety Executive (HSE) have been providing advice on a safe system of work for the installation of overhead line equipment (OLE) wires under tension.

We need assurance that Network Rail can deliver a safe infrastructure at the end of enhancement projects and that it can take fast and safe engineering possessions once a project goes live. We have seen some early evidence of Network Rail's responsiveness to our "safety by design" challenge: good work is clearly being done in cascading the concept but it appears that the principles are not always applied consistently.

On the DC network, solutions for faster and safer isolation work using the £85m allocated fund have continued: trial sites are in place but the project is behind schedule and unit costs are higher than expected.

There needs to be a step change in the way Network Rail meets its statutory obligations, for example under the Electricity at Work Regulations 1989 and this area continues to present a significant challenge for the company.

SPADS

Following a long period of gradual improvement, Signal Passed at Danger (SPAD) numbers increased in 2013-14. They have remained at a high level so far in 2014-15. SPADs for this year have been fairly evenly distributed around the network suggesting that increasing traffic volumes may be a factor.

ORR has continued to encourage train operators and infrastructure providers to review their SPAD risk profiles. Our inspectors look at operators' driver training and management processes closely. Some operators now have plans in place to upgrade Train Protection and Warning System (TPWS) which is important as European Rail Traffic Management System (ERTMS) fitment is likely to be some way off for some routes.

Level crossings

In our CP5 Final Determination Network Rail was provided with £99m of ring-fenced funding to reduce risk at level crossings by 25%. Network Rail has identified 256 crossings for closure which is expected to result in a 21% overall level crossing risk reduction. In 2014-15 the company intends to close 53 crossings and it is planning to seek EU funds to expand its investment in level crossing closures. It is now developing a strategy to enable it to achieve the remaining 4% risk reduction.

ORR has continued to monitor Network Rail's risk improvement programme which has included "second train coming" verbal warnings being commissioned at over 160, mainly Automatic Half Barrier (AHB) crossings, and passive crossing sighting distance markers being trialled by the routes.

Level crossing managers are completing written risk assessments in addition to ALCRM (All Level Crossing Risk Assessment Model) assessments to enhance their management of risk. They have also been given cameras and gate counters to provide more accurate crossing usage data.

Routes report that level crossing managers are demonstrating good understanding of risk.

Infrastructure worker safety

Worker safety remains a key priority for both Network Rail and ORR following the 22% increase in infrastructure worker harm over 2013-14.

Network Rail is seeking to address this through a number of initiatives, including:

- national roll-out of the Planning and Delivery of Safe Work (the new Control of Work permit procedure and roll-out of the new Safe Work Leader role);
- improved management of track patrolling including specific briefings to improve coordination and communication between different roles;
- increased green zone working; and
- the development of technology to automate inspection where possible, enhance track worker protection and provide more warning of the movement of trains on the mainline.

Progress has been made in these areas but we need to see better coordination and faster and more effective implementation.

We have found some examples of poor understanding and management of basic health and safety risks by Network Rail and its contractors, particularly in construction-related sites. Specific concerns have included failure to control risks from; excavations, working at height, working with or near electricity, vehicle operation, heavy plant/machinery, and the control of substances hazardous to health. We have taken action on these cases (including investigation and enforcement) as required.

Fatigue and working hours

We continue to have concerns about the railway industry's ability to manage worker fatigue effectively. During recent visits to a number of worksites in the northwest and midlands we found variable and potentially ineffective monitoring arrangements and duty holders were unable to demonstrate any robust system for reviewing and challenging the information collected.

We have written to Network Rail and its contractors to highlight the issues identified and remind them of their legal duties. We believe significantly more work is needed to develop a national-level plan to help manage the risk of and from contractor fatigue. We will consider taking enforcement action if we find future failings.

Network Rail is developing a single nationwide rostering solution which will enable more coherent management of staff, but this will only cover its own employees. The company is introducing its new contracts for the supply of subcontractor labour from November 2014 and these will be rolled out for all its suppliers by summer 2015. The contract includes provisions on the management of fatigue.

Train service performance

National level performance

An input-based approach in years one and two

Network Rail entered 2014-15 at much lower levels of performance than anticipated in our CP5 Final Determination and does not expect to meet a number of its regulated performance outputs during the first two years of the control period. We have therefore agreed with the company that we will take an input-based approach to monitoring national PPM and CaSL during the first two years of CP5. Network Rail has produced a CP5 Performance Plan which details the activities it will deliver to ensure that performance returns to the regulated target levels by 31 March 2016. Along with other inputs, such as maintenance and renewals volumes, we are monitoring the company's delivery of this plan and assessing whether it is doing everything reasonably practicable in the circumstances to recover performance.

In addition, we are monitoring Network Rail's delivery of regulated performance outputs (PPM and CaSL) *at TOC level* as specified in the Performance Strategies Network Rail has agreed with each operator.

National freight performance, measured by the Freight Delivery Metric (FDM), remains an annual regulated target throughout CP5.

Delivery of the CP5 performance plan

Network Rail has committed to delivering quarterly reports on delivery of the CP5 Performance plan. We have reviewed the Quarter 1 and Quarter 2, reports which show(s) that 69 milestones (approximately 30% of the total plan) have been completed year to date. At the end of Period 7, 13 milestones were reported late or slipped. A further 20 of the committed performance improvement milestones have either been put on hold pending re-planning of a national programme or abandoned for reasons such as supply chain issues and delays securing funding. Network Rail has committed to delivering a further 35 milestones in England and Wales, notably on LNW and Western routes in order to address the shortfall to the PPM trajectory specified in this plan. We expect to see evidence of other routes committing to additional milestones during Quarter 3. We have concluded that delivery of the Performance Plan in Quarter 1 and Quarter 2 was largely to programme. Where milestones have slipped, the impact appears to have been contained so that benefit delivery will still occur within a reasonable timescale.

Whilst our initial conclusion is that delivery of the Performance Plan in Quarter 1 and 2 was largely to programme, performance in England and Wales is currently below the trajectory specified in the plan. Network Rail has recognised that the plan is not having the anticipated effect on performance in the reactionary and specification delay groupings and has committed to undertaking a full industry review into reactionary delay causation. We expect to see evidence of the plan being adjusted appropriately in the light of this underperformance.

At the end of Period 7, England & Wales PPM and CaSL Moving Annual Average (MAA) were both below target. Punctuality as measured by PPM (MAA) in England and Wales was 89.1%, 0.7 percentage points (pp) short of target and 1.5pp worse than it was at the same time last year. CaSL MAA at the end of Period 7 was 3.2%, 0.4pp above (i.e. worse than) target and 0.5pp above the level last year. As stated above we are not treating national PPM and CaSL as regulated targets during the first two years of CP5 but we note that performance has fallen below the levels specified in Network Rail's own Performance Plan and is below the levels achieved at the end of CP4.

TOC performance

PPM and CaSL performance since the beginning of CP5 has been well below the targets specified in Performance Strategies for a significant number of operators. At the end of Period 7, 13 out of 18 TOCs had not met their profiled PPM MAA targets, the largest variances being Southern and Southeastern who were 1.5pp and 1.3pp short of target respectively. 13 of 18 franchised TOCs failed to meet their CaSL target, the largest variance being Southern which was 1.7pp worse than target.

The CP5 final determination states that we will investigate if PPM falls two percentage points short of the targets set out in the performance strategies at the end of any year in the control period or if CaSL exceeds the target ceilings by 0.2pp. Our internal projections show that the majority of operators may exit year one of CP5 below the performance targets specified in their Performance Strategies and a number of these will fall outside the parameters set out above. We have met a number of operators and will be continuing to meet others in the coming months to discuss their concerns and to assess whether Performance Strategies have been appropriately adjusted to reflect the circumstances at the end of Quarter 2 and whether Network Rail is doing everything reasonably practicable to achieve them.

The recent performance of the East Coast Mainline has been a real success and a significant turnaround from the levels achieved in 2013-14. The three long distance operators on this route are all exceeding their PPM and CaSL targets. This strong performance reflects a real focus by Network Rail on getting the basics right in terms of asset management and operations.

We met Southern on 30 October to discuss the reasons behind its current very poor performance. We note the impact that platform crowding resulting from the London Bridge redevelopment is having on performance. Network Rail and Southern have identified a number of schemes to recover performance which we will be monitoring closely in the coming months.

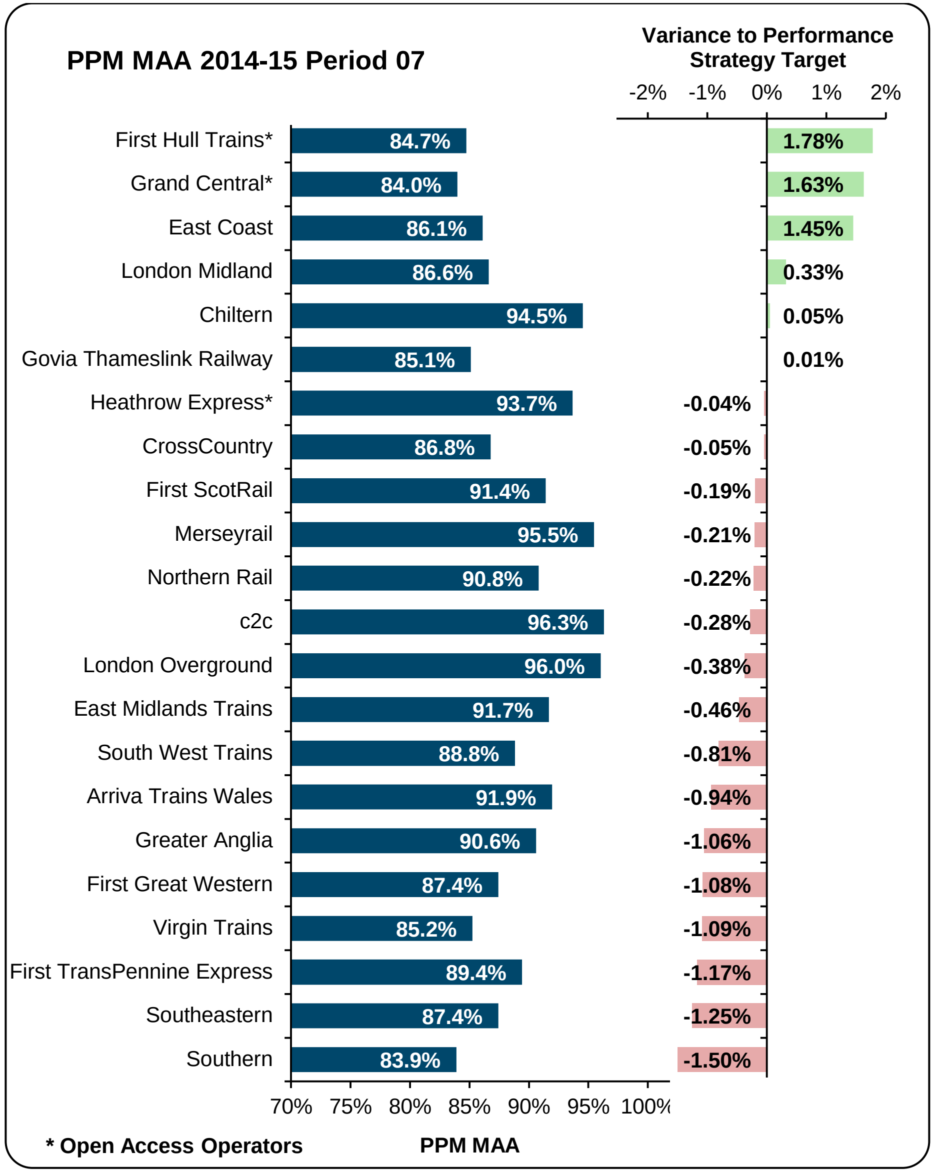
We have raised the Southeastern performance issues with Network Rail and it has identified a series of initiatives that should recover performance, including actions to resolve staff shortages at the London Bridge Delivery Unit and to remove temporary speed restrictions. We are monitoring the impact of these initiatives closely and we will escalate the matter within Network Rail if its plan does not appear to be having the anticipated impact.

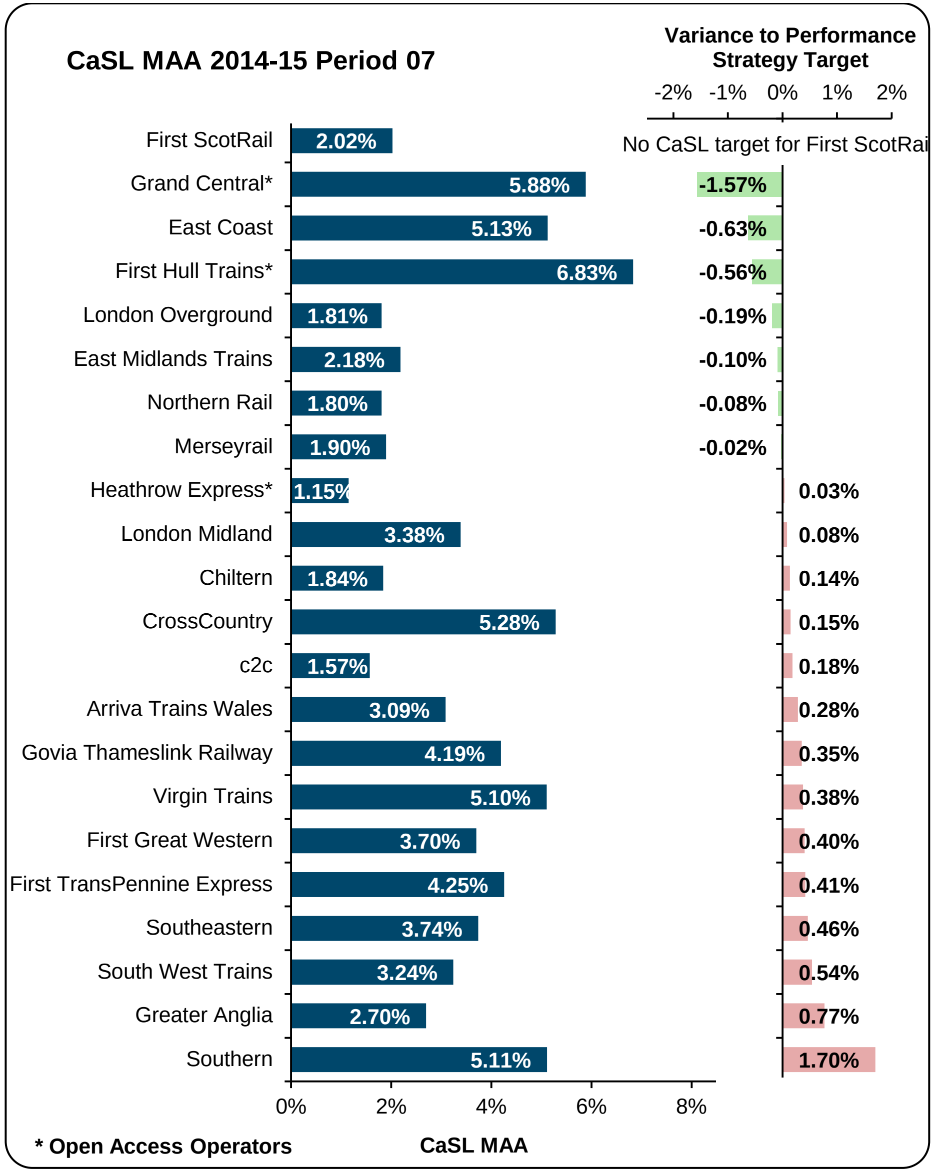
At the end of Period 7 South West Trains' PPM MAA and CaSL MAA were both below the profiled Performance Strategy targets (at 0.8 and 0.5pp respectively). We wrote to the South West Trains/ Network Rail (Wessex route) alliance in October asking that it updates us on its plans to recover performance and its autumn preparations.

Greater Anglia has raised performance issues with us and we have asked Network Rail to update us on its plans to improve performance, including CaSL. We note in particular the shortfalls to the delay targets for both track and non-track assets (including points, OLE faults and track circuit failures). We will be reviewing Network Rail's plans, produced following the recent over-runs in the Ipswich area, to reduce delays from late hand back of possessions which, at the end of Period 7, were 167% worse than at the same time last year.

First Transpennine Express (FTPE) has experienced reduced levels of performance following the introduction of an additional train path between Manchester and Leeds in May 2014. Whilst we continue to monitor the situation closely, we recognise that FTPE and Network Rail are working collaboratively to recover performance levels.

The graphs overleaf show all operators' performance ranked by variance to their profiled performance strategy targets at the end of Period 7. We will be continuing to monitor performance closely, and will consider more formal regulatory intervention if Network Rail's performance delivery does not recover to the levels specified in the performance strategies.


PPM MAA 2014-15 Period 07
Variance to Performance Strategy Target
-2% -1% 0% 1% 2%
First Hull Trains* 84.7% 1.78%
Grand Central* 84.0% 1.63%
East Coast 86.1% 1.45%
London Midland 86.6% 0.33%
Chiltern 94.5% 0.05%
Govia Thameslink Railway 85.1% 0.01%
Heathrow Express* 93.7% -0.04%
CrossCountry 86.8% -0.05%
First ScotRail 91.4% -0.19%
Merseyrail 95.5% -0.21%
Northern Rail 90.8% -0.22%
c2c 96.3% -0.28%
London Overground 96.0% -0.38%
East Midlands Trains 91.7% -0.46%
South West Trains 88.8% -0.81%
Arriva Trains Wales 91.9% -0.94%
Greater Anglia 90.6% -1.06%
First Great Western 87.4% -1.08%
Virgin Trains 85.2% -1.09%
First TransPennine Express 89.4% -1.17%
Southeastern 87.4% -1.25%
Southern 83.9% -1.50%
70% 75% 80% 85% 90% 95% 100%
* Open Access Operators
PPM MAA


CaSL MAA 2014-15 Period 07
Variance to Performance Strategy Target
-2% -1% 0% 1% 2%
First ScotRail 2.02% No CaSL target for First ScotRail
Grand Central* 5.88% -1.57%
East Coast 5.13% -0.63%
First Hull Trains* 6.83% -0.56%
London Overground 1.81% -0.19%
East Midlands Trains 2.18% -0.10%
Northern Rail 1.80% -0.08%
Merseyrail 1.90% -0.02%
Heathrow Express* 1.15% 0.03%
London Midland 3.38% 0.08%
Chiltern 1.84% 0.14%
CrossCountry 5.28% 0.15%
c2c 1.57% 0.18%
Arriva Trains Wales 3.09% 0.28%
Govia Thameslink Railway 4.19% 0.35%
Virgin Trains 5.10% 0.38%
First Great Western 3.70% 0.40%
First TransPennine Express 4.25% 0.41%
Southeastern 3.74% 0.46%
South West Trains 3.24% 0.54%
Greater Anglia 2.70% 0.77%
Southern 5.11% 1.70%
0% 2% 4% 6% 8%
* Open Access Operators
CaSL MAA

Network Rail caused PPM failures at the end of Period 7 accounted for 57.7% of the total PPM failures across England and Wales. This figure is 0.1 pp worse than at the same point last year. Network Rail-caused CaSL failures at the end of Period 7 accounted for 58% of total CaSL failures across England and Wales. This is 1.0pp worse than at the same time last year.

In the first two quarters of 2014-15, Non track assets caused 34.3% of PPM failures and 21% of CaSL failures across England and Wales caused by Network Rail. Operations accounted for 9,284 PPM failures in the same timeframe, a 56% increase when compared to the same point last year.

TOC fleet issues (train faults) have caused 20% of the total PPM failures and 23% of the total CaSL failures in England and Wales in the first two quarters of 2014-15. We expect Network Rail and operators to work collaboratively to develop schemes through the Performance Strategy process to improve this figure in the coming months.

Delay minutes

We are continuing to monitor Network Rail delay minutes as a key indicator for performance. We note the increase in delays associated with track circuit failures and operations. Delay minutes caused by track circuit failures have increased by 23.1% when compared to this time last year. For operations the delay minutes figure is 24.2% worse than at the same point last year. In particular, operations delays associated with signalling have risen by 27.8%. We are continuing to monitor the situation closely and expect to see an improvement over the next two quarters.

Freight performance

The regulatory performance measure for freight is the freight delivery metric (FDM) which measures the percentage of freight trains arriving at their destination within 15 minutes of scheduled time. FDM covers delays for which Network Rail is responsible i.e. not those caused by other train operators. FDM MAA at the end of Period 7 stands at 93.7%, 1.2pp ahead of the annual target of 92.5%. We anticipate that as a result of this strong performance Network Rail will meet its end of year FDM regulated target of 92.5%.

Customer service

Passenger satisfaction

Passenger Focus is scheduled to publish the results of its autumn 2014 National Rail Passengers' Satisfaction survey (NRPS) on 27 January 2015. We await these results with interest as they will give the first view of passenger satisfaction in CP5.

The spring 2014 wave of the NRPS published in June 2014 included an update on Passenger Focus' work to identify the key drivers of satisfaction: punctuality has the greatest impact on overall satisfaction (38%) followed by cleanliness of the inside of the train (18%). This re-emphasises the need for the industry to continue to do everything reasonably practicable to achieve its performance targets.

Customer service maturity

Network Rail measured the satisfaction of its passenger and freight operator customers in an annual survey conducted throughout CP4. The survey provided a useful overview of satisfaction levels but did not allow Network Rail to understand if it is a genuinely customer-focused organisation. So in our CP5 final determination we required the company to implement and embed a maturity model providing a much fuller picture of the level of service delivered to its customers.

Network Rail is in the process of developing this model having identified its proposed metrics and a timetable for implementation. It has consulted with its customers on this and appointed KPMG to help with the development process. Network Rail has also asked KPMG to work with it to establish a trajectory for customer service maturity as assessed under the model in order to achieve a CP5 exit target.

Network Rail has advised us that this process is nearly complete and that it is on track for the route maturity measures to go live by 1 April 2015, as committed in its delivery plan.

This programme is a key enabler for Network Rail. Failure to identify an appropriate trajectory and to implement plans to achieve this trajectory is likely to result in the satisfaction levels of its customers not being optimised which in turn could result in less productive working relationships, making it harder to achieve regulated outputs. In some cases, this could also mean direct loss of business for Network Rail, for example by freight customers switching traffic to other modes.

Asset management

Maintenance and renewals volumes

Maintaining and renewing the network is fundamental to Network Rail's responsibilities. Regular maintenance counters the effects of wear and aging to keep the assets safe and performing as intended. But eventually they have to be renewed when it becomes uneconomical or impractical to maintain them any longer.

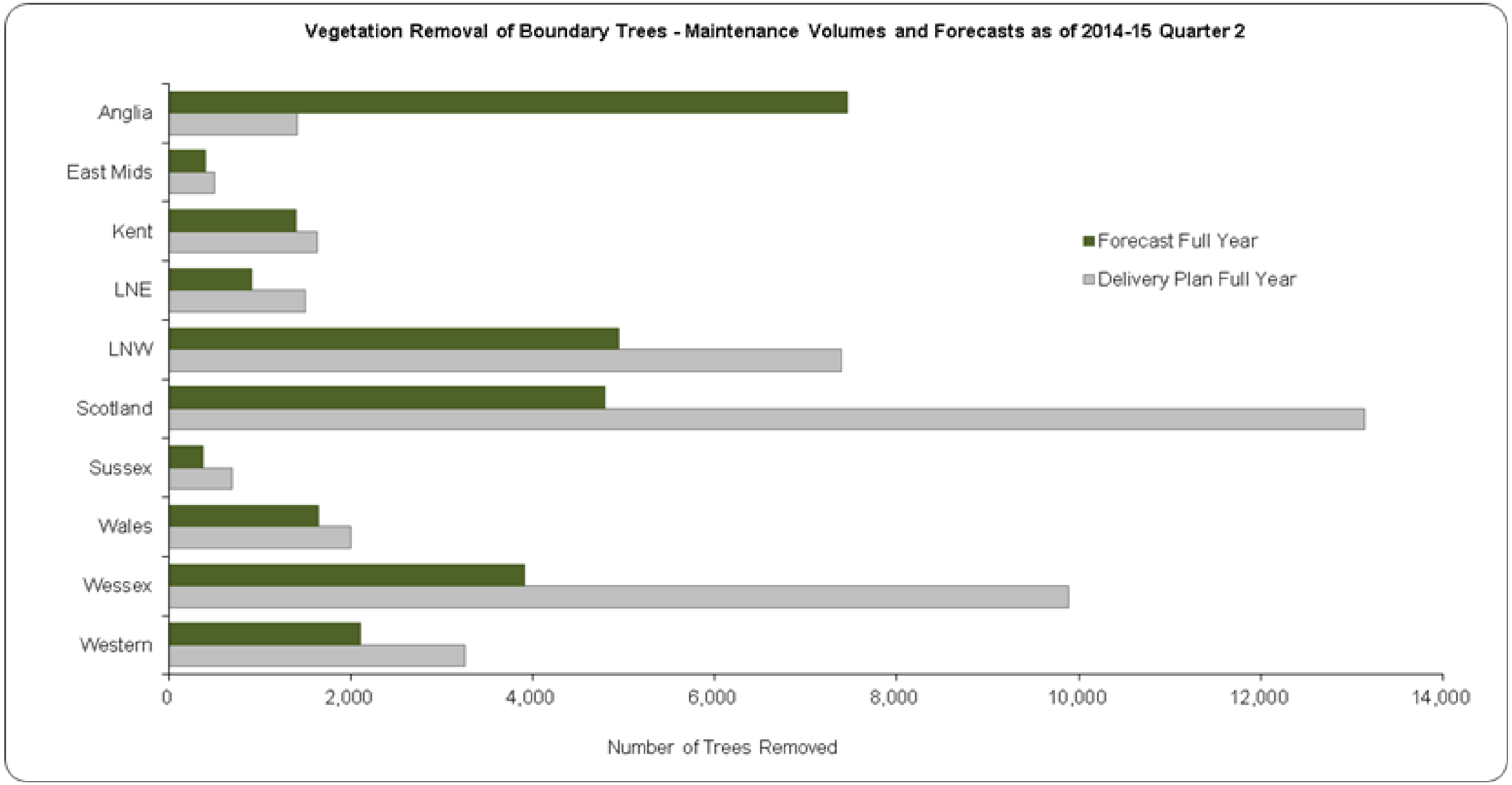
Network Rail has set out in its asset policies its approach to maintaining and renewing the network sustainably and at least whole life cost. The volume of work required during CP5 in accordance with these policies was set out by Network Rail in its 2014 delivery plan. We accepted the delivery plan in March (except for operational property, which Network Rail is reviewing), and we are now monitoring whether Network Rail delivers the volume of maintenance and renewals it said was necessary. So far Network Rail has reported delivering less work than it planned to do, in both maintenance and renewals.

At the end of period 7, plain line track renewals are 10% behind plan, but Network Rail is forecasting to recover the lost volume by the end of the year. Switches and crossings are 52% behind plan, and it will be much more difficult to recover this shortfall – Network Rail's current forecast is for a shortfall of 28% at year end. The signalling programme is also significantly behind schedule and Network Rail is unlikely to recover the shortfall by the end of 2014-15. Its current forecast is to commission only half the planned volume of renewals. Work on civils assets is also well behind plan, with a 28% shortfall forecast by year end for underbridges, and a 42% shortfall for earthworks. Overhead line renewals are also well down, with less than half the planned work being forecast for completion by year end.

Some of the shortfalls reflect migration to the new CP5 supply chain, which should improve as the arrangements bed in, but in some areas there was insufficient preparation during CP4 to bring works to the point where they are ready to be delivered during early CP5. We are holding Network Rail to account for the impact of its under-delivery on sustainability, and seeking assurance that the lost work will be recovered during CP5. We have also asked Network Rail to resolve inconsistencies we identified in some of its reported renewals volumes.

Overall expenditure on renewals in England and Wales is 20% below plan, reflecting the shortfall in volumes, and work in progress that has not yet been reported. If Network Rail spends more on delivering its plan than we funded in our determination, the excess cost is financial under-performance. Taking into account the undelivered work, Network Rail has reported less than 2% underperformance. We will consider whether this is justified at the end of the year.

For CP5 we asked Network Rail to provide more detailed reporting on the volume of maintenance delivered, so we could see how each route is performing by maintenance activity. According to the information reported at the end of period 6, both the volume of maintenance delivered and the volume forecast to be delivered by year end are substantially below the level set in the delivery plan for most activities across most routes. As an example, the graph below shows boundary tree removal by route. For England & Wales Network Rail is forecasting to remove 18% fewer boundary trees than plan. Anglia is forecasting to remove four times as many trees as plan, but the average for other routes in England & Wales is 42% below plan. Last winter a large number of trees fell onto the track, so we expected Network Rail to increase its efforts in this area. Network Rail believes more work has been done than has been reported, so we are seeking assurance that it is managing both maintenance and maintenance reporting effectively.



Asset management excellence

Asset management excellence is key to improving the reliability and performance of Network Rail's assets in a sustainable way. A consistent systematic strategy with robust processes and procedures will lead to a more "predict and prevent" approach to asset management as opposed to 'find and fix' which is usually less efficient and potentially riskier. There are opportunities for Network Rail to learn from leading edge organisations and to adopt and adapt new technologies and work practices to its advantage. This will translate into more reliable and efficient infrastructure, ultimately leading to a better experience for customers and passengers.

Network Rail exited CP4 with an asset management competence score of 66.7% overall across the six core AMEM areas for assessment (see diagram opposite). For CP5, we set Network Rail an overall target of 72% to be achieved by January 2018. The company has developed a programme of work to achieve this target called the 'roadmap'. The independent reporter AMCL has been engaged to review Network Rail's plans and confirm that they are robust and that the logic and sequence of the tasks is sound.

amcl asset management excellence model™

Asset data quality

Knowing what assets you have, where they are and how they are performing is a fundamental building block of asset management. Without up to date knowledge about its assets an organisation will not have sufficient understanding of how and why they fail, and its maintenance approach will be largely reactive rather than preventative. This in turn leads to inefficiencies through reduced performance and repeat maintenance rather than getting it 'right first time'.

For CP5 we challenged Network Rail to improve its asset data quality, and we set a specific quality target to be achieved by April 2017. To that end Network Rail has adopted a comprehensive assurance programme to enable it to populate, verify and monitor the quality of its 'data assets'. We are monitoring progress on a quarterly basis.

ORBIS milestones

ORBIS stands for Offering Rail Better Information Services. It is an ambitious programme aimed at improving asset management capability through improved information management. It involves adopting consistent data specifications, providing simpler mobile data capture tools, replacing legacy asset information systems (such as GEOGIS and CARRS), and providing improved decision support tools. The programme began in CP4, and we set specific milestones during CP5 to help ensure it delivers all the benefits expected. To date all ORBIS milestones have been achieved on schedule and on budget, comprising asset information specifications for track and structures assets, and rollout of LADS and a fault look-up app for handheld devices. The programme is making good progress and we expect its success to continue. The next milestones (early in the New Year) are the asset information specifications for signalling and electrification assets.

LADS

We saw a live demonstration of the Linear Asset Decision Support tool (LADS) in September 2014. We were impressed by the quality of the system and the enthusiasm of the front line engineers showed in demonstrating its benefits. The system is able to quickly and easily visualise time series data comparing historical information at a glance. It can handle multiple data sets and present information including:

- location of specific defects;
- selection of appropriate intervention options such as tamping or stone-blowing;
- effectiveness of past interventions (identifying where multiple attempts have been unsuccessful);
- specific alignment issues where small variations have led to rolling contact fatigue (RCF) problems; and
- visualisation of underlying problems using ground penetrating radar data (which visual inspections alone would not identify).

Network Rail engineers are still exploring new ways of working with the information but they were able to present various analyses from multiple sources with a few clicks which previously took days to compile in paper form. We believe LADS is significant development for the industry and we encourage Network Rail to make the most of its capability to drive improvements in safety, performance and efficiency.

Fault lookup app

Roll-out of the fault lookup app was completed in August 2014. It allows maintenance staff to enter fault data into handheld devices to be transmitted electronically to control centre staff. This will significantly improve the quality of data in the Fault Management System (FMS), which will help Network Rail to better analyse the type, frequency, mode, and causes of faults.

Track

Track performance

Service affecting track failures show a slight improvement from the start of the control period. LNE continues to be the worst performing route, with little improvement in the delay per incident.

Broken rails and serious rail defects continue a reducing trend, but ‘poor track geometry’ has shown a marked worsening over periods 4 and 5, which is usually the time of year when track geometry quality suffers due to hot weather.

Civils

Drainage

Earthworks and track both rely on the condition of drainage. Poor drainage can cause wet beds in track and eventually poor “top”, or sudden failures in embankment or cutting slopes. There were many earthworks failures during the exceptionally wet weather last winter, which were partly attributable to historic problems with drainage. We remain concerned whether Network Rail is doing enough in this area.

Station buildings and operational property

Earlier in the year a backlog in operational property assessments came to light. Network Rail has established mitigation measures and is making good progress in developing a recovery plan. We are continuing to monitor progress closely.

Developing the network

Network Rail is responsible for delivering £12bn of enhancement[1] expenditure over the five years of CP5. The enhancement investment portfolio in CP5 is more complex than in CP4, with a high level of interdependency between the infrastructure projects, the Government's re-franchising timetable and rolling stock procurement and cascade plans. The infrastructure component for which Network Rail is responsible will be the critical enabler for planned step changes in train services, with significant timetable improvements planned for 2016, 2018 and 2019.

In the first two quarters of 2014-15 the company had planned to complete 44 regulated project milestones. 11 of these 44 milestones have been missed. The impact on Network Rail's customers has been limited, in that four of these were development milestones, meaning that the company is behind schedule in the design and development of the projects (rather than delivery) and needs to accelerate design work to meet its completion dates. The remaining seven missed milestones relate to project completions. These are:

Project	Milestone	Actual Date
F006 – Strategic Freight Network – Ipswich Yard	Aug 2014	Feb 2015
SC011 – Motherwell Area Stabling – Phase 1	May 2014	June 2014
WL002 – Barry – Cardiff Queen Street Corridor – Phase 2 Valley Lines	June 2014	Nov 2014
WL002 – Barry – Cardiff Queen Street Corridor – Phase 3 Barry Lines	June 2014	May 2015
LNW007 – Chiltern Main Line Train Lengthening	August 2014	Sept 2014
SC008 – Rolling Programme of Electrification – Rutherglen and Coatbridge Electrification	August 2014	Sept 2014
WX005 – South West suburban platform lengthening – Raynes Park to Dorking	April 2014	May 2014

[1] Enhancement expenditure is investment to improve the network's capacity or capability to facilitate growth (e.g. longer or more frequent trains)

The majority of these missed milestones have had low or zero impact on passengers and freight customers, because operators have not been planning to utilise the new infrastructure immediately after Network Rail completion. But for others we are still assessing the impact. For example, Barry – Cardiff phase 2 delays are impacting subsequent phases of this large re-signalling project that enables greater service frequency. This potentially delays the introduction of new services.

For all these missed regulatory milestones, we will assess the degree of passenger or freight customer impact and make a proportional financial adjustment to Network Rail's accounts as set out in our final determinations in PR13.

Looking ahead, we are very concerned with Network Rail's delays to the completion of the North West electrification project, phase 2 (Liverpool-Manchester, including Liverpool – Wigan). We escalated our concerns with Network Rail in July 2014 on the grounds that we considered the completion date was at risk. In September, Network Rail announced a delay in its completion dates based on a review of its contractors actual and forecast productivity rates. It is now clear that the commissioning date to start replacing diesel services with electric trains in December 2014 will be missed.

This will result in a missed regulated milestone that has impacted the train operator's plans to start running electric trains.

There are other projects where we consider there are emerging risks to achieving completion dates later in the control period, and we are raising our concerns with Network Rail to understand how it is mitigating these risks.

Along with two other electrification projects at the end of CP4 that ran into significant schedule stress (Cumbernauld and North west electrification phase 1) this has raised serious questions about Network Rail's ability to deliver future electrification projects on time. We have escalated a set of enhancement-related concerns with the company (listed below), and it has described an initial improvement plan that aims to strengthen its performance in these areas.

We have asked that this improvement plan is further developed to ensure it is appropriately targeted and resourced, with executive-level ownership to ensure it is implemented quickly and that the benefits are fully realised.

We are expecting the plan to improve Network Rail's ability to:

- effectively manage its major investment portfolio;
- effectively manage its contractors to increase our confidence that it can deliver projects on time and to the right quality and cost;
- accurately report its portfolio-level schedule and cost risks; and
- make sufficient cost allowances for projects at very early stages of development.

Network Rail needs to strengthen and enhance its capabilities in key areas to ensure it delivers what is needed on time. Given these complexities, and the high impact of non-delivery, we have commissioned the independent reporter, Nichols, to check that lessons have been learnt from past experiences of major programme development and delivery, such as west coast route modernisation, and more recent experience of established programmes such as Thameslink and the Great Western route modernisation.

This independent review will check that Network Rail has in place the key capabilities, processes and governance needed to deliver route-wide upgrades successfully and will be testing each major programme between January and April 2016 to identify any gaps or weaknesses.

Expenditure and finance

Overall financial performance in Great Britain

We consider Network Rail's financial performance in two different ways; firstly by providing a simple comparison of spend against its own budget and second by looking at our regulatory performance measure which is broader as it takes account of issues such as the delivery of regulated outputs and the effectiveness of Network Rail's asset management, in order to assess how the company is performing in relation to our CP5 Final Determination. It does not include any benefit from where work has simply been delayed and the baseline is our CP5 Final Determination.

Spend against budget

Financial performance for the year to date is £40m adverse to Network Rail's own budget and forecast to be £112m adverse for the full year. For the full year this is largely due to spend on two new initiatives, the Tidy Railway (£43m) and Business Critical Rules Programme (£17m), which were not included in its 2014-15 budget, higher Schedule 8 costs (reflecting worse than expected train performance) and higher than expected track renewals costs. For the year to date, the under-performance is for the same reasons, but it is offset by a reduction in staff costs as a result of a decision to pay lower management incentives than assumed in the business plan.

Renewals work delivered in the year to date has slipped by around 10% compared to Network Rail's budget. Whilst Network Rail expects this to be caught up within CP5 we will keep this matter under review and our assessments of Network Rail's financial performance in CP5 will take into account any concerns that we may have regarding the sustainability of the company's asset management. Enhancements work has also slipped and we are also keeping that under review as set out in the section on developing the network (above).

Regulatory financial performance measure

We currently expect Network Rail to underperform the regulatory financial performance measure by around £300m in 2014-15. This takes into account the variances between: actual performance and its own budget (£112m adverse for the full year), the financial assumptions in our PR13 determination for CP5 and Network Rail's own budget (£100m adverse for the full year) and also Network Rail's estimate of the financial effect of the forecast under-delivery of the regulatory outputs for train performance (£93m for the full year).

Network Rail's borrowing

Largely due to its deferral of capex in 2014-15 to later in CP5, Network Rail is currently expecting that its debt for Great Britain at 31 March 2015 will be £37 billion, which is in line with its budget.

Network Rail and DfT have agreed a £30.3 billion borrowing facility across CP5 for Great Britain. Following the company's classification to the public sector by the ONS, Network Rail agreed to borrow from DfT instead of issuing bonds. It currently considers that it can deliver its regulatory requirements within the borrowing available and the main area of uncertainty is the effect of the CP5 Enhancements Cost Adjustment Mechanism (ECAM), which is expected to be finalised in 2015.

Network Rail's financial performance

Comparison of income and expenditure

£m	2014-15 year to date			2014-15 full year forecast		
	Budget	Actual	Variance	Budget	Full Year Forecast	Variance
Turnover	810	810	0	1,554	1,548	-6
Schedule 4	-117	-83	34	-231	-202	29
Schedule 8	13	-20	-33	-44	-78	-34
Operations, support & maintenance	-1,172	-1,147	25	-2,151	-2,184	-33
Capex - Renewals	-1,635	-1,332	303	-3,477	-3,155	322
Capex - Enhancements	-1,839	-1,722	117	-3,532	-3,405	127
Total	**-3,940**	**-3,494**	**446**	**-7,881**	**-7,476**	**405**

(See notes 5 and 6 below)

Total financial performance

	2014-15 year to date	2014-15 full year forecast
	Financial Performance	Financial Performance
Income less expenditure	446	405
Variances that do not count for financial out/underperformance (1)	-525	-562
Capex performance adjustment (2)	39	46
Financial performance compared to Network Rail budget	-40	-112
Network Rail budget compared to PR13 (3)	-27	-100
Adjustments for missed regulatory outputs (4)	-	-93
Total financial performance measure	**-67**	**-305**

Notes

1. Variances that do not count for financial out/underperformance include items such as renewals that have been deferred to later in the control period.
2. The Capex performance adjustment is a deduction from the value of renewals and enhancements so that 25% is recognised as under or over performance, to be consistent with how we defined financial performance for CP5. This aligns with Network Rail's financial reward/penalty for renewals and enhancements expenditure through the RAB roll forward mechanism.
3. Network Rail started CP5 in a worse position than we assumed because it achieved lower efficiency savings in the final year of CP4 than we assumed in our PR13 determination. This meant that Network Rail has more work to do in CP5 to deliver the efficiency challenge set out in our PR13 determination.
4. The adjustment for missed regulatory outputs represents Network Rail's estimate of the value of an anticipated ORR adjustment for not meeting the train performance target in 2014-15 based on our work last year. We will review this and other issues adjusting for missed regulatory outputs in our annual finance and efficiency assessment, so the final number may be different. Network Rail has also not recognised a proportion of this adjustment in the year to date figures.
5. In both tables a positive variance is favourable and a negative variance unfavourable
6. This information is from the Network Rail Period 7 Finance Pack (period end 11 Oct 2014) and we are working with Network Rail on changes to the presentation of the Finance Pack to make it consistent with our PR13 Final Determination e.g. to separately show operations and support costs.

We publish the *Network Rail Monitor* every six months, focusing on Network Rail's delivery of its obligations to its customers and funders, for which it is mainly accountable under its network licence.

We welcome your feedback on this publication. Please send your comments or queries to:

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