



OFFICE OF **RAIL REGULATION**

Periodic review 2013

First consultation – annexes

May 2011

Contents

A. Statutory duties	3
B. Network Rail devolution and price control separation	7
Network Rail devolution and financial transparency	7
Price control separation	11
C. Setting outputs	16
Introduction and overview	16
Appendix to C: Network Rail – success in control period 4.....	19
Introduction.....	19
Required minimum outputs.....	20
The critical enablers	26
Other related issues	28
D. Improving incentives	30
Context	30
Typology of incentives	30
What we want our incentives to achieve.....	31
High-level overview of the financial incentive framework and potential changes for CP5.....	32
Key issues related to incentives in the rail sector	33
Financial incentives on Network Rail to improve efficiency	39
Financial incentives to improve reliability: the schedule 8 performance regime	46
Financial incentives to minimise planned disruption: the schedule 4 possessions regime.....	49
Financial incentives to make best use of and grow the network: the volume incentive	51
Aligning Network Rail and train operators’ incentives and promoting industry-wide efficiency	52
Other incentives to improve industry outcomes	64
E. Financial framework	67
Introduction.....	67
Regulatory asset base.....	68
Risk and uncertainty	71
Duration of the control period	77

Dual till versus single till	79
Amortisation.....	80
Network grant	81
Unsupported debt	82
F. Structure of charges.....	85
Introduction.....	85
Charging purpose and objectives	86
Types of charges	87
Changes introduced in PR08.....	90
Developments since PR08	90
Issues to consider in PR13.....	92
Appendix to Annex F: responses to initial consultation on structure of charges	103
Background and purpose	103
Arrangements for establishing charges	104
High level options for charges	107
Consultees' views on current track access charges	113
Conclusions	117
G. Franchise timetable	120

A. Statutory duties

We have a number of statutory duties which we must balance when exercising our economic functions. These duties do not point in any one direction. We will need to decide on the appropriate balance between our duties and be satisfied that we have discharged them in the decisions we take in PR13.

We have the following duties under Section 4 of the Railways Act 1993:

- To promote improvements in railway service performance;
- Otherwise to protect the interests of users of railway services;
- To promote the use of the railway network in Great Britain for the carriage of passengers and goods, and the development of that railway network, to the greatest extent which it considers economically practicable;
- To contribute to the development of an integrated system of transport of passengers and goods;
- To contribute to the achievement of sustainable development;
- To promote efficiency and economy on the part of persons providing railway services;
- To promote competition in the provision of railway services for the benefit of users of railway services;
- To promote measures designed to facilitate the making by passengers of journeys which involve use of the services of more than one passenger service operator;
- To impose on the operators of railway services the minimum restrictions which are consistent with the performance of our functions under Part 1 Railways Act 1993 and Railways Act 2005;
- To enable persons providing railway services to plan the future of their businesses with a reasonable degree of assurance;

- To take into account the need to protect all persons from dangers arising from the operation of railways;
- To protect the interests of users and potential users of services for the carriage of passengers by railway provided by a private sector operator, otherwise than under a franchise agreement, in respect of the prices charged for travel by means of those services, and the quality of the service provided;
- To have regard to the effect on the environment of activities connected with the provision of railway services;
- To protect the interests of persons providing services for the carriage of passengers or goods by railway in their use of any railway facilities which are for the time being vested in a private sector operator, in respect of the prices charged for such use and the quality of the service provided;
- In the case of functions other than our safety functions as an enforcing authority for the purposes of the Health & Safety at Work Act 1974, to have regard to any general guidance given to us by the Secretary of State about railway services or other matters relating to railways;
- To act in a manner which we consider will not render it unduly difficult for persons who are holders of network licences (ie Network Rail) to finance any activities or proposed activities of theirs in relation to which we have functions;
- To have regard to any notified strategies and policies of the National Assembly of Wales and the ability of the National Assembly of Wales to carry out its functions;
- To have regard to any general guidance given by the Secretary of State, or Scottish Ministers in relation to Scottish railway services, about railway services or other matters relating to railways;
- To have regard to the funds available to the Secretary of State for the purposes of his functions in relation to railways or railway services;
- To have regard to the ability of the Mayor of London and Transport for London to carry out the functions conferred or imposed on them by or under any enactment;

- To have regard, in particular, to the interests of persons who are disabled in relation to services for the carriage of passengers by railway or to station services; and
- To have regard to the interests, in securing value for money, of the users or potential users of railway services, of persons providing railway services, of the persons who make available the resources and funds and of the general public.

We also have duties under:

- Section 17 of the London Olympic Games and Paralympic Games Act 2006 provides that section 4 of Railway Act 1993 shall be treated as including the objective of facilitating the provision, management and control of facilities for transport in connection with the London Olympics. We do not consider this duty will be relevant for CP5.
- Section 21 of the Channel Tunnel Rail Link Act 1996 gives us an overriding duty to exercise certain functions in such a manner as not to impede the performance of any development agreement. We do not expect this duty to be engaged as part of PR13.
- Section 22 of the Crossrail Act 2008 provides that section 4(1) of the Railways Act 93 shall be treated as including the objective of facilitating the construction of Crossrail.
- Section 72 of the Regulatory Enforcement and Sanctions Act 2008 requires us to keep our functions under review and secure that in exercising these functions that we do not:
 - impose burdens which we consider to be unnecessary, or
 - maintain burdens which we consider to have become unnecessary.

We also have a new equalities duty under Section 149 of the Equalities Act 2010 which requires us to have due regard to the need to:

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;

- advance equality of opportunity between persons who share a relevant protected characteristic¹ and persons who do not share it; and
- foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

¹ relevant protected characteristics are – age; disability; gender reassignment; pregnancy and maternity; race; religion or belief; sex; sexual orientation.

B. Network Rail devolution and price control separation

Network Rail devolution and financial transparency

Definition and purpose

- B.1 Network Rail is currently moving to introduce far greater devolution to an operating route level to increase responsiveness to train operators, customers and funders at a local level². There are currently nine operating routes within Network Rail and the proposals are that each route managing director will be responsible for:
- safety;
 - all customer service matters;
 - asset management outputs and spend;
 - operations;
 - planning and delivering maintenance; and
 - delivery of some renewals and enhancements
- B.2 The proposals represent a significant transfer of responsibility from the centre to the operating routes. The centre would ensure that the railway continues to be planned and operated as a network, there is a continuing focus on efficiency and effective management of whole-life assets and the railway makes the most of economies of scale. The first routes to be devolved are Scotland and Wessex.
- B.3 'Accounting separation' can help to reinforce Network Rail's devolution proposals by requiring the publication of disaggregate financial information, so that the performance of individual operating routes can be compared.
- B.4 But the transparency of financial information should go further than Network Rail and should encompass whole industry costs and revenues so that a whole industry perspective can be taken at a disaggregated level as greater

² Network Rail's press release of 3 May 2011 provides further explanation. It can be accessed at <http://www.networkrailmediacentre.co.uk/Press-Releases/DEVOLUTION-TODAY-FOR-SCOTLAND-AND-WESSEX-ROUTES-AS-NETWORK-RAIL-ANNOUNCES-MORE-CHANGES-1736/SearchCategoryID-2.aspx>.

financial transparency and devolution is a key part of the recommendation of the vfm study and the work on industry reform. The vfm study recommended the publication of whole industry profit and loss accounts by franchise and by route be published annually and annual comparative benchmarking of TOC and ROSCO costs nationally and internationally. The study also identified the opportunity for greater local involvement through PTEs and local authorities.

- B.5 Some joint industry data would be required to support proposals being developed as part of PR13, in particular route based efficiency benefit cost sharing.
- B.6 Improving the transparency of whole industry financial information will help to:
- (a) inform decisions on the future structure of the rail industry;
 - (b) improve industry planning;
 - (c) improve partnerships and co-operation within the industry;
 - (d) facilitate regional efficiency and revenue sharing mechanisms; and
 - (e) support increased route level accountability and decision making.
- B.7 We have required Network Rail to prepare for 2010-11 regionally disaggregated financial information for each operating route, Merseyside and Wales. The disaggregated information includes statements on income, support and operations, maintenance, renewals and enhancements. An example is shown in Table B1 and there is more detail in our regulatory accounting guidelines (RAGs). For 2010-11 the information is not audited and will not be published in Network Rail's regulatory accounts.³

³ Network Rail's regulatory accounts provide information on Network Rail's financial performance in order to inform the determination of access charges, monitor compliance with our PR08 determination and inform the robust financial monitoring of Network Rail. We specify our requirements for Network Rail's regulatory accounts in Network Rail's regulatory accounting guidelines (RAGs). Network Rail's RAGs can be accessed at: <http://www.rail-reg.gov.uk/upload/pdf/regulatory-accounting-guidelines-2011.pdf> and the template regulatory financial statements for 2010-11 can be accessed at: <http://www.rail-reg.gov.uk/upload/xls/rags-template-statements-2010-11.xls>

Table B1: Example of route based data that Network Rail is producing

Statement 7a: Analysis of operating expenditure		
in £m 2010/11 prices unless stated		
	2010-11 Actual	Prior year*
Controllable operating expenditure		
Signaller staff costs	X	X
Signaller other staff costs	X	X
Non-signaller staff costs	X	X
Non-signaller other staff costs	X	X
Staff incentives	X	X
Other employee related costs	X	X
Pensions	X	X
Commercial property	X	X
Consultants/contractors/agency	X	X
Insurance and claims	X	X
Accommodation, office, corp prop expenses	X	X
Information management	X	X
Other	X	X
Total gross controllable operating expenditure	X	X
Less:		
Other operating income	X	X
Total controllable operating expenditure	X	X
Non-controllable operating expenditure		
Traction electricity costs	X	X
Cumulo rates	X	X
BT Transport Police costs	X	X
Rail Safety and Standards Board levy	X	X
ORR fees (incl. ORR licence fee and the railway safety levy)	X	X
Other (i.e. CIRAS fees)	X	X
Total non-controllable operating expenditure	X	X
Total operating expenditure	X	X
Explanatory note:		
These sheets will be completed separately for each operating route: Anglia, Kent, Midland & Continental, North Eastern, North Western, Scotland, Sussex, Wessex, Western and for Merseyrail and Wales.		
* No reporting of prior year figures is necessary for 2010-11 Regulatory Financial Statements (where 2009-10 is the prior year).		

B.8 We will review the disaggregated information Network Rail provides us with in the summer and decide how we should take this forward and from 2011-12 the disaggregated information will be audited and published in Network Rail's annual regulatory accounts (with the first set of route level disaggregated regulatory accounts published in the summer of 2012).

B.9 We have also started to discuss with DfT, ATOC and train operators what information they could provide and how we would combine it with Network Rail's information to produce whole-industry information at a disaggregated level.

B.10 Issues to be considered are:

- (a) what data is not currently in the public domain, which might raise commercial sensitivity issues;
- (b) how to ensure the data is consistent and comparable;
- (c) how formal the process for collecting the accounting information should be, e.g. do we issue formal guidance; and
- (d) the level of geographical disaggregation.

B.11 Further discussion will take place over the coming months.

Timetable for further work

B.12 Our planned timetable for progressing this area is shown in the table below (the references to TOCs are indicative):

Table B.2: Planned financial data disaggregation timetable

January 2011	Publish Network Rail's regulatory accounting guidelines (RAGs) with accounting separation requirements included
June – September 2011	Train operators and Network Rail to agree the format for developing whole-industry financial reports including the terms of reference for collation and processing of data
July 2011	Network Rail completes its operating route, Merseyside and Wales regulatory financial statements in shadow form
August – September 2011	ORR review Network Rail's disaggregated accounting information

October 2011	Review of audit issues for Network Rail's disaggregated accounting information Preparation of Network Rail 'shadow financial statements' for 2010-11
November 2011	Develop recommendations for 2011-12
December 2011	Publish updated RAGs for Network Rail
January – May 2012	Preparation of 2011-12 data by train operators and Network Rail and regulatory accounts by Network Rail
May – June 2012	Collation of whole-industry data and preparation of financial reports
July 2012	External assurance, publication of 2011-12 whole-industry financial reports

Price control separation

Definition and purpose

- B.15 In general terms a 'price control' is the regulatory approval or determination (e.g. resulting from a periodic review) of the regulated company's access charges for a specific output/service or set of outputs or services. The price control may relate to a particular market or vary across markets, which could be distinguished by customer type or geography.
- B.16 Price control separation can be introduced by regulators for a range of purposes, to:
- (a) control monopoly power;
 - (b) control or preclude cross-subsidy;
 - (c) improve transparency, incentives and accountability;
 - (d) improve the ability to undertake comparative competition;
 - (e) align with separate policy or funding responsibilities; and
 - (f) support contestability.

- B.17 The way we apply the concept of price control in respect of Network Rail refers to the determination of access charges, outputs and the other elements of the periodic review determination package.
- B.18 There are many ways in which the concept of price control separation for Network Rail currently applies, including:
- (a) largely separate controls for England & Wales and Scotland;
 - (b) separate controls for passengers and freight, e.g. outputs and access charges;
 - (c) separate controls between track and station access; and
 - (d) the financial ring-fence licence condition sets out the three types of activity Network Rail can undertake: permitted business, and de minimis and consented activities (with de minimis and consented activities not subject to price control).
- B.19 In PR08 we established separate price controls for CP4 for Network Rail's activities in both England & Wales and Scotland. This was in response to the devolution of responsibility for rail strategy and funding to the Scottish government in 2006.
- B.20 Separate price controls for England & Wales and Scotland involves:
- (a) separate determination of the outputs and revenue requirement for each area (in the context of the separate HLOSs and SoFAs). This includes separate RABs and notionally separate debt calculations for the purposes of determining the revenue requirements. It requires the level of efficient expenditure for running the railway in Scotland to be established;
 - (b) separate determination of access charges (though retaining a GB-wide variable usage charge price list);
 - (c) separate provisions for dealing with risk and uncertainty in the price control, e.g. re-openers (although the framework is largely the same);
 - (d) separate monitoring and enforcement of Network Rail's overall performance; and

- (e) ensuring that outperformance or underperformance is ultimately retained or borne entirely separately by customers and funders in each area (although not necessarily within the control period).

- B.21 Although in PR08 we established separate price controls for Network Rail's activities in England & Wales and Scotland, we recognised that Network Rail is a GB-wide company and finances itself on this basis. We did not require Network Rail to establish separate finance companies for England & Wales and Scotland.
- B.22 There were some areas where in PR08 we maintained the same approach for Network Rail's activities in England & Wales and Scotland including efficiency assumptions and our cost of capital assumption. For PR13, we will review our separation of Network Rail's price control between England & Wales and Scotland.

Issues

- B.23 Looking ahead to CP5, and in particular in relation to the devolution of Network Rail (as discussed above), there is an important issue that we need to address: whether we introduce greater geographical price control separation, specifically whether we introduce more price control separation at the route level.
- B.24 In considering whether we introduce greater geographical price control separation, the key questions are:
- (a) what could be covered by separate price controls – beyond what we have already decided;
 - (b) do we need to separate Network Rail's RAB and debt?; and
 - (c) risk sharing and incentives – should Network Rail still be treated financially as one company, i.e. should it be able to 'trade' out/underperformance between operating routes or should they be 'ring-fenced'?

What could be covered by separate price controls?

- B.25 We have already decided that in PR13 we will determine efficient expenditure levels for each of Network Rail's operating routes. This means

we need to make separate calculations of support and operations costs, maintenance costs and renewals for each route. This could be on the basis of a common efficiency assumption (our current intention) or different assumptions – this is one example of how much further we could take the process. We could also look at more differentiated outputs for example.

Separating the RAB and debt

- B.26 Separating the RAB and debt to the route level is not necessarily required to implement route level efficiency benefit sharing. However, separating the RAB and debt provides transparency and would help discussions around cost causation and sharing, as well as provide a basis for Network Rail's customers and funders to have a fuller picture of the investment in the network on that route and to support consideration of funding levels etc, and potentially access charges. Establishing separate RABs and debt figures would also start to provide a data/track record in the event that further separation of the routes was planned in the future (e.g. through a concession).

Approach to risk sharing and incentives

- B.27 There are two broad approaches to the treatment of risk sharing and incentives by operating route. Firstly, we could take a 'risk sharing' approach. This would allow Network Rail to use any operating surplus generated by outperformance on some routes, its risk buffer and its balance sheet buffer to support any deficits that arise in other routes (subject to corporate level financial controls, e.g. the level of indebtedness limit or interest cover ratios). Under this option, surplus from routes with outperformance could be transferred to support routes that underperform (once sharing with train operators is taken account of). This approach would weaken incentives on Network Rail's route management compared to a risk bearing approach. Under a risk sharing approach a global re-opener mechanism would still be used (i.e. at the England & Wales and Scotland levels). It is important to note that while Network Rail could shift revenues around between routes it would not lead to any change in access charges or outputs within the control period.
- B.28 Secondly, we could introduce a risk bearing approach. Under a complete/extreme version of risk bearing Network Rail would be prevented from cross-subsidising across its routes (i.e. using any operating surplus

from routes, and any use of its risk buffer and its balance sheet buffer would be similarly restricted, e.g. through capex overspend limits or route specific level of indebtedness limits, which would require disaggregation of Network Rail's debt and RAB to the routes – in a similar way to how we have already done it for England & Wales and Scotland).

- B.29 Any out/underperformance on a route compared to the baseline trajectory would be retained wholly within the route for the benefit/cost of the route and shared with the train operators using that route. This option would strengthen incentives but also require risk buffers to be established locally and it might increase the level of the aggregate risk buffer for Network Rail as a whole, given the reduced ability of Network Rail to share risk across the network. Although it is worth noting that, on average, each of Network Rail's nine routes would be significant businesses if considered in their own right.
- B.30 Such an approach raises the question as to how re-openers would apply as the logic under this option is that there would need to be some opportunity for a focused interim review at the operating route level if there were to be a significant cost/revenue shock outside Network Rail's control and no recourse to the national balance sheet or risk buffer.
- B.31 There are other (weaker) versions of this risk bearing approach, including one in which there is a central/national risk buffer to be used in different routes if necessary.

C. Setting outputs

Introduction and overview

- C.1 In PR13, we will be defining what Network Rail will be funded to deliver in CP5. These obligations – ‘outputs’ – let Network Rail’s stakeholders know what they can expect from the company. They will also form part of the framework of incentives on Network Rail, because failure to deliver the outputs we set will be linked to potential enforcement action by us.
- C.2 The outputs required of Network Rail will include those necessary to deliver the governments’ output requirements (HLOS), which will be published in July 2012. The HLOS will themselves be informed by the initial industry plan, to be published in September 2011. We have asked industry to consult passenger and freight user representatives as it develops the initial industry plan.
- C.3 Chapter 6 of the main consultation document considers the issues. This annex provides a summary of the approach in PR08 for background information. In the appendix to this annex C, we reproduce a document we have produced called ‘Network Rail – success in CP4’ which sets out what ‘success’ would look like for Network Rail and shows how we currently use a blend of outputs and enablers to assess Network Rail.

Approach in PR08

- C.4 In PR08 our work on the output framework was structured around:
- (a) informal discussions with government on the development of the HLOSs;
 - (b) our guidance to Network Rail prior to its initial strategic business plan, which included a definition of some output measures for inclusion in that plan; and
 - (c) a consultation, published a month after the publication of the HLOS, where we set out our proposed output specification (covering the measures used rather than the level of output).

- C.5 Our determination turned the governments' HLOS output requirements into obligations on Network Rail, with an enforcement mechanism through the company's network licence. The relationship between the HLOS outputs and the obligations on Network Rail differed according to the output:
- (a) for some outputs, the HLOS measure itself became an obligation on Network Rail. For example in the area of train service performance, our determination said that Network Rail was required to deliver the 2013-14 PPM figures defined in the two HLOSs;
 - (b) for others, we required that the delivery plan should set out how both Network Rail and operators intended to deliver the HLOS target, but the responsibility on Network Rail was still to deliver its own contribution to the HLOS target. For example DfT's HLOS safety metric required a 3% reduction in the risk of death or injury from accidents on the railway for passengers and rail workers (as measured by the RSSB's safety risk model). Our determination required that Network Rail's delivery plan set out how the industry would work together to deliver the metric, with Network Rail being responsible for its own contribution; and
 - (c) for other outputs still, we required that the delivery plan should set out how the HLOS measure would be delivered, and that we would enforce against Network Rail's delivery plan responsibilities. For instance we required that the delivery plan set out plans to meet the HLOS capacity specifications, with the milestones in the delivery plan then becoming obligations under the licence.
- C.6 In most output areas we also set additional but related obligations – for example, we required that Network Rail meet PPM targets in every year of the control period, not just by its end as specified in the HLOS.
- C.7 Besides outputs related to the HLOS targets we set outputs covering:
- (a) network capability;
 - (b) network availability; and
 - (c) stations stewardship.

- C.8 We asked Network Rail to set targets for depot condition, and said we would review and then monitor them. Network Rail proposed KPIs to measure environmental impact, which we also said we would monitor.
- C.9 We decided not to set outputs (or outcomes) for:
- (a) customer satisfaction (we said that it was most appropriate that this was taken into account by Network Rail's remuneration committee according to its management incentive plan); and
 - (b) asset serviceability and sustainability – we would monitor instead a dashboard of condition and work volume.
- C.10 The document reproduced in the following appendix is on our website and sets out both required outputs in terms of what Network Rail is obligated to deliver and also the variables we use to monitor Network Rail, including enablers such as asset management.

Appendix to C: Network Rail – success in control period 4

Introduction

1. In October 2008, we set out in our CP4 determination⁴ the minimum outputs we required from Network Rail. The output obligations are in two parts: top-level regulated outputs set by ORR, and disaggregated outputs defined in Network Rail's CP4 delivery plan.
2. Network Rail sets out its commitments on disaggregated outputs for its train operator customers⁵ in the appendices to its CP4 delivery plan.
3. We will assess Network Rail's achievement of those outputs, expecting commitments to be delivered on time, year-by-year, whilst complying with its licences and access contracts as well as its statutory and contractual obligations. We have also specified efficiency gains to be delivered by the end of CP4.
4. We see these as the minimum requirements and believe there is scope for outperformance.
5. However, although success in the control period can be judged partly against these defined obligations there are other important factors. Keeping customers happy is a good indicator of success and we wish to see improvements in train operator and passenger satisfaction. Looking to the longer term we also expect Network Rail to make real progress with its key enablers – excellence in health & safety risk control, and in asset management – for an ever more successful railway.
6. This note draws on all these to set out in summary terms trajectories of improvement in Network Rail's performance the achievement of which, year-by-year, would satisfy us that the company was on track.

⁴ Periodic review 2008 - determination of Network Rail's outputs and funding for 2009-14 (ORR, October 2008).

⁵ See: [Moving ahead - Delivering a better railway](#).

Required minimum outputs

Safety

7. The Government's high level output specification (HLOS) included a 3% reduction in the risk of death or injury from accidents on the railway for passengers and rail workers for the whole of the British mainline network over the five years of CP4 (using the industry's RSSB safety risk model).
8. Network Rail has responsibility for delivering its own contribution, but not that of other parties. The company set out in its 2009 delivery plan two trajectories that will contribute to achieving the 3% reduction in safety risk as shown below.
9. Year by year we will also review progress on the infrastructure component of the precursor indicator model, our enforcement activity, progress on corrective action and recommendations, near miss and all injury trends, safety tour feedback and the safe working index.

Safety trajectories		
	Passenger safety index (fatalities & weighted injuries per billion passenger km)	Employee health and safety index (fatalities & weighted injuries per million hours worked)
2008-09	0.258	0.137
2009-10	0.248	0.098
2010-11	0.246	0.096
2011-12	0.244	0.094
2012-13	0.242	0.092
2013-14	0.240	0.090

10. These trajectories do not have the status of customer reasonable requirements.

Passenger train service performance

11. The HLOSs specified that Network Rail and its train operator partners are to deliver improvements in the public performance measure (PPM) by sector, by the end of 2013-14. The relevant national PPM trajectories are below, with the HLOS targets in **bold**.

Passenger train punctuality (% PPM)				
	Long distance	London & SE	Regional	Scotland (First ScotRail)
2008-09	87.6	91.2	90.1	90.6
2009-10	88.6	91.5	90.5	90.9
2010-11	89.8	92.0	91.0	91.3
2011-12	90.9	92.4	91.5	91.7
2012-13	91.5	92.7	91.9	91.9
2013-14	92.0	93.0	92.0	92.0

12. In England and Wales, the government specified reductions in cancellations and significant lateness by sector. Network Rail included these trajectories in its delivery plan.

Cancellations and significant lateness (% of services affected)				
	Long distance	London & SE	Regional	Scotland (First ScotRail)
2009-10	4.9	2.3	2.6	2.0
2010-11	4.5	2.2	2.5	1.9
2011-12	4.2	2.1	2.4	1.8
2012-13	4.0	2.0	2.3	1.8
2013-14	3.9	2.0	2.3	1.7

Note: Scotland figures are Network Rail's internal targets

13. We set maximum levels for the passenger and freight train delay minutes for which Network Rail is held responsible.

Network Rail delay minutes			
	Passenger train services (delay minutes)		Freight services (delay minutes /100 train km)
	England & Wales	Scotland (First ScotRail)	GB
2008-09	6.50m	455k	3.92
2009-10	6.27m	436k	3.68
2010-11	5.79m	410k	3.41
2011-12	5.43m	391k	3.18
2012-13	5.19m	386k	3.05
2013-14	4.98m	382k	2.94

14. PPM and delay minute trajectories for individual operators were set out in Network Rail's 2009 delivery plan and revised in the 2010 update. These have the status of customer reasonable requirements.

Network capacity

15. The HLOSs specified some enhancement schemes. In England and Wales the HLOS also set out capacity measures for urban areas and London termini (peak three hours, high-peak hours and maximum average load factors) and for the 23 strategic routes (additional passenger km to be accommodated), some of which required network capacity to be increased. We required Network Rail to deliver against these requirements as part of PR08.
16. The requirements of the HLOSs and of PR08 will be achieved through many projects and programmes including Thameslink, platform lengthening, linespeed improvements, the strategic freight network programme, remodelling and/or rebuilding at Reading, Birmingham New Street and Kings Cross and the national stations improvement programme.
17. Crossrail was not funded through PR08 but is a government requirement. Network Rail's obligations are defined in the protocol and key date 1 submission. Works are currently expected to be completed in a number of phases by 2017. Since the HLOS the government has also stated a requirement to electrify parts of the England & Wales network. Work is continuing to define this requirement in detail.
18. In Scotland Network Rail is required to deliver the Paisley corridor improvements, the Airdrie-Bathgate scheme, connection to the new Borders line and the Glasgow-Kilmarnock scheme (delivered in 2009).
19. The Edinburgh to Glasgow improvements project was not funded through the periodic review but is a government requirement. Network Rail has published the scope of works in its delivery plan and they have the status of a reasonable requirement.
20. Network Rail's enhancements delivery plan sets out in full the required completion dates and key milestones for these schemes. It is updated quarterly subject to a regulated change control process.

Network capability

21. Apart from these enhancements Network Rail is required to maintain network capability as at 1 April 2009 as described in its sectional appendices, GEOGIS database and national gauging database. Capability is specified in terms of track mileage and layout, line speed, gauge, route availability and electrification type. Changes can be made through the industry network change procedure.

Network availability and the “seven day railway”

22. Network Rail is required to deliver a progressive reduction in the disruption to passengers caused by its planned engineering activities such that by 2013-14 there is 37% less than in the base year (2007-08). For freight services there is to be no increase. The required trajectories in the two possession disruption indices⁶ are set out below.

Network availability		
	Passenger possession disruption index (PDI-P)	Freight possession disruption index (PDI-F)
2007-08	1.00	1.00
2009-10	1.02	1.00
2010-11	0.91	1.00
2011-12	0.83	1.00
2012-13	0.68	1.00
2013-14	0.63	1.00

Stations

23. Network Rail is required as a minimum to maintain average condition scores within each station category A to F across the network, and to maintain average station condition (across all categories) in Scotland. The baseline (minimum) levels of average condition below are based on Network Rail’s survey data.
24. This obligation applies before taking into account improvements funded under the England & Wales national stations improvement programme.

⁶ Passenger index (PDI-P) measures the impact of engineering possessions in terms of the economic value of the excess journey time passengers experience, normalised by total train-km. The freight index (PDI-F) measures the ‘unavailability’ of track for freight use, weighted by the level of freight traffic operated over each section of track.

Station stewardship measure	
All network	Minimum average at 1 April 2014
A	2.48
B	2.60
C	2.65
D	2.69
E	2.74
F	2.71
Scotland (all stations)	2.39

Depots

25. There is no formal regulated output for the condition of light maintenance depots owned by Network Rail although it must show in its delivery plan whether or how average depot condition will change over CP4. Network Rail committed in its 2009 delivery plan to maintain these depots as set out below. This has the status of a customer reasonable requirement.

Light maintenance depot stewardship measure	
All network	Minimum average at 1 April 2014
England & Wales	2.52
Scotland	2.56
All LMDs	2.52

Asset serviceability and sustainability

26. We did not set a formal regulated output requirement for Network Rail's asset serviceability and sustainability (except for station condition) in our determination. Network Rail's compliance with its licence requirements is therefore tested against an extensive dashboard of indicators, including both condition forecasts and activity plans set out in its CP4 delivery plan. The March 2010 delivery plan update gave the key component measures of this dashboard. These are set out below.

Indicative asset condition measures (total network)					
	2009-10	2010-11	2011-12	2012-13	2013-14
Good track geometry	137.3%	137.3%	137.4%	137.5%	137.6%
Poor track geometry	2.40%	2.40%	2.38%	2.36%	2.34%
Intervention/immediate action geometry faults /100km	40.0	39.0	38.0	37.0	35.9
Rail breaks and immediate action defects /100km	6.0	5.9	5.8	5.7	5.6
Civils assets subject to additional inspections	850	840	840	820	809
Signalling condition	2.39	2.39	2.39	2.39	2.39
AC traction feeder station track sectioning point condition	2.78	2.78	2.78	2.78	2.78
DC traction substation condition	2.53	2.53	2.53	2.53	2.53
AC traction contact system condition	1.6	1.6	1.6	1.6	1.6
DC traction contact system condition	1.9	1.9	1.9	1.9	1.9
Telecoms condition	0.89	0.89	0.89	0.89	0.89
Signalling failures (>10 min delay)	18,440	17,058	16,168	14,608	13,614
Points failures	7,691	5,570	4,420	3,388	2,871
Track circuit failures	6,291	5,570	4,973	4,180	3,857
Track failures	6,798	6,656	6,504	6,353	6,238
Power incidents (>300 min delay)	79	87	87	78	77
Telecom failures (>10 min delay)	774	742	721	656	644

28. Compliance with Network Rail's licence obligations will also be tested against the progress Network Rail makes in delivering its proposed renewal volumes as this provides an important leading indicator of future network serviceability and sustainability.

Environmental sustainability

29. There is no formal regulated output requirement for Network Rail's environmental sustainability initiatives in CP4. However, Network Rail included in its 2009 delivery plan a series of commitments that now form part of the package of outputs it is expected to deliver over the control period. These are set out below.

Environmental sustainability outputs					
	2009-10	2010-11	2011-12	2012-13	2013-14
Operational recycling - <i>stations, office & depot waste mass recycled or re-used</i>	30%	40%	50%	55%	60%
Network Rail CO ₂ emissions - <i>managed stations, offices & depots</i>	-5%	-10%	-15%	-17%	-20%
Infrastructure recycling - <i>renewals & enhancements waste mass recycled or reused</i>	95%	95%	95%	95%	97%
Environmental incidents - <i>leading to serious damage</i>	6	6	6	6	6
Network Rail owned SSSIs rated favourable or recovering status - <i>for 21 priority sites</i>	75%	95%	95%	95%	95%
Water recovery - <i>volume of ground / spring water recovered etc as % of total removed from tunnels</i>	14%	14%	14%	14%	85%
Environmental sustainability index	6	7	8	9	9

30. The trajectories were revised in the 2010 delivery plan update. They do not have the status of customer reasonable requirements but we will continue to monitor progress.

The critical enablers

Excellence in health and safety culture and risk control

31. We consider that achieving excellence in culture and risk control would be the best enabler to sustain and improve on current performance. ORR and Network Rail have agreed that the goal and trajectory on the key health and safety enablers will be based on the ORR rail management maturity model.
32. The model has five defined and calibrated core elements (with 26 sub-elements). For each of these sub-elements assessments are made on a five level maturity scale: initial/ad-hoc (1); managed (2); standardised (3); predictable (4); and excellent (5). Network Rail has identified nine priority areas for improvement. The trajectories for improvement in these priority areas are set out below.

Rail management maturity model improvement trajectory					
	2009-10	2010-11	2011-12	2012-13	2013-14
Leadership	3	3	3.5	3.5	4
Frontline management and supervision	2	2	2.5	3	4
Data analysis and learning	2	2	2.5	3	4
Competence	3	3	3	3.5	4
Internal communications	3	3.5	4	4	4.5
Risk management	2	2	2.5	3	3.5
Workforce involvement	2	2	2.5	3	4
Designing safety into the asset	2	2.5	3	3.5	3.5
Control of contractors	2	2.5	3	3.5	3.5

Excellence in asset management

33. The quality of Network Rail's asset management is a key determinant of its performance and efficiency both during the balance of this control period and in the long term. Achieving excellence in asset management is therefore a critical enabler. The independent reporter AMCL assesses Network Rail's asset management maturity against its cross industry / international excellence model.
34. This model currently has 23 activities/enablers that are split into six core groups. Each activity/enabler is assessed on a hundred point maturity scale (banded into six maturity states: innocent (<5), aware (5-15), developing (15-30), competent (30-45), effective (45-70) and excellent (70-100)). The reporter completed assessments against its model in 2006 and again in 2009.
35. The reporter, Network Rail and ORR have developed an agreed trajectory for Network Rail to reach best practice in asset management during CP4, recognising key milestones for the critical control period 5 submissions to ORR.

Asset management excellence model				
Core groups	2009	IIP 09/11	SBP 01/13	CP5 04/14
Asset management strategy & planning	56	62	65	67
Whole-life cost justification	47	56	60	64
Lifecycle delivery	65	67	70	72
Asset knowledge	52	59	63	67
Organisation & people	63	67	71	74
Risks & review	50	53	58	61
Overall	56	61	65	68

Other related issues

Addressing the efficiency gap

36. ORR's judgements on the minimum level of efficiency improvement in controllable operating, maintenance and renewals expenditure by the end of CP4 are set out below. (Note – individual programme specific efficiency improvement assumptions were used for enhancement expenditure.)

Assumed improvements in Network Rail efficiency by the end of CP4			
Controllable operating expenditure	Maintenance expenditure	Renewals expenditure	Total
16.4%	18.0%	23.8%	21.0%

37. We have agreed with Network Rail that we will use a new approach to measuring year-on-year 'real economic efficiency' improvement during CP4 compared to an agreed baseline. Comparison to our determination assumptions does not necessarily reflect real year-on-year performance as it compares to the assumed financial position at the start of CP4 that was not achieved by Network Rail.
38. Whilst ORR will continue to compare Network Rail's efficiency with the judgements it made in its CP4 determination, the principal basis for monitoring improvement will be against the new real economic efficiency measure, for which the baseline is agreed and the CP4 trajectory is set out below. ORR will assess Network Rail against this trajectory each year, taking into account any agreed adjustments to the baseline (e.g. to reflect change in traffic levels).

Trajectory for cumulative improvement in real economic efficiency				
	Controllable opex	Maintenance	Renewals expenditure	Total
2009-10	-4.4%	2.8%	7.1%	3.6%
2010-11	2.2%	12.6%	16.6%	12.8%
2011-12	4.0%	18.9%	18.7%	16.1%
2012-13	7.7%	21.5%	20.8%	18.6%
2013-14	15.3%	25.5%	25.2%	23.5%

39. The trajectory shows a higher outturn (23.5% overall) because of Network Rail's worse exit position from CP3. Network Rail plans to recover the gap to the expected CP4 start position.
40. If Network Rail achieves its trajectory it will deliver our CP4 efficiency improvement.

Customer and passenger satisfaction

41. Keeping its customers and rail users satisfied is as important to Network Rail's long term success as delivering 'hard' regulated outputs. The satisfaction of passengers and freight users is influenced by many factors which are difficult for Network Rail to influence directly, but the reliability and frequency of services, the provision of information especially during disruption, journey times and interchanges with other modes are areas where Network Rail has an important impact.
42. Network Rail places considerable importance on how it is regarded by passenger and freight train operators (as measured in an annual customer satisfaction survey). It is also committed to working with train operators to improve passenger satisfaction (measured by the National Passenger survey).
43. Network Rail is exploring with ORR and with its customers how best it can measure its progress in addressing issues which impact directly or indirectly on customer and user satisfaction. We expect this work to be completed by the end of 2011.

D. Improving incentives

Context

- D.1 Incentives are a key component of the regulatory framework for Network Rail. Some of the incentives we establish at a periodic review also impact on train operators. We want to ensure that Network Rail faces strong incentives to perform well in its wide-ranging roles. We also want it to forge partnerships with passenger and freight operators to enable the delivery of improved whole-industry outcomes. Incentives can help this.
- D.2 During PR08, and as part of earlier price controls, the design of incentive mechanisms in the rail industry was primarily focussed on Network Rail. During PR13 we will retain a focus on ensuring that the incentives placed on Network Rail are strong, and indeed are strengthened – recognising Network Rail's specific circumstances and the constraints this places on the usual range of incentive mechanisms that economic regulators use. In addition, building on the vfm study and the industry reform work, we consider that there is benefit from greater involvement of the wider industry in future incentive structures. Our aim is to therefore to develop a robust incentive framework for Network Rail and, as appropriate, the wider industry for CP5. This will build on the significant improvements that were made in PR08.

Typology of incentives

- D.3 Incentives are wide ranging. They can cover anything that encourages a company or individual to pursue a certain course of action. Incentives can be categorised as covering:
- **financial incentives** which can act:
 - at the **corporate level**, for example the financial interests of the company's owners to meet and outperform regulatory targets, for example the profit incentive to outperform regulatory efficiency targets;
 - at the level of **specific outputs or deliverables**, e.g. to deliver volume growth;
 - at the **managerial level** – through management incentive plans;

- at the **contractual level** – for example the Schedule 4 and 8 financial compensation regimes for infrastructure possessions and operational performance in track access agreements, or the level and structure of track access charges paid by train operators to Network Rail; and
- **non-financial incentives** which can be related to reputation for example through monitoring and publication of company performance (such as through our quarterly Network Rail monitor) and/or benchmarking (for example through our annual efficiency benchmarking reports); and
- **licence and other legal obligations** create incentives through the need to meet defined outputs in enforceable arrangements through the periodic review obligations. An example of this is Network Rail's requirement to achieve percentage of passenger trains arriving on time (as measured by the public performance measure, PPM) in England & Wales in CP4 to be at least 93% for London & South East services, at least 92% for other services.

What we want our incentives to achieve

- D.4 It is important that we understand how incentives can contribute to achieving our objective (the transmission mechanism). In particular we will need to understand better how companies react to our incentives in the context of other incentives such as those to maximise financial gain or shareholder value.
- D.5 We believe that our PR13 objective can be best achieved if:
- Network Rail and its partners face strong, consistent and continuous incentives that are aligned with the needs of users of the railway, and the objectives and priorities of government and other funders;
 - the incentive framework is as simple as possible, so that it is readily understood by those that are intended to respond;
 - wherever possible and practical decision-making is decentralised so that decisions reflect local needs;
 - industry participants face appropriate price/cost signals at each point in the value chain so that requirements of industry partners are aligned;

- market mechanisms and competition are fostered as these are likely to best reflect the changing demands of users and can create better outcomes than purely administrative mechanisms; and
- the industry takes an active role in developing the incentive framework.

High-level overview of the financial incentive framework and potential changes for CP5

D.6 This annex provides a high-level overview of the incentive framework and examines in more detail potential changes to the financial incentive regime:

- it first sets out the key considerations for developing the incentive framework, with particular reference to the constraints imposed by the current regulatory and contractual framework;
- it then reviews the incentive framework in the following areas:
 - financial incentives on Network Rail to improve efficiency, including menu regulation;
 - financial incentives to improve reliability: the schedule 8 performance regime;
 - financial incentives to reduce planned disruption from engineering work: the schedule 4 possessions regime;
 - financial incentives to make best use of and grow the network: the volume incentive;
 - aligning Network Rail and train operators' incentives and promoting industry-wide efficiency; and
 - other incentives to improve industry outcomes.

D.7 Incentives will also be affected by the wider regulatory and financial framework. In particular there will be close links between incentives and:

- the outputs that we set, as achieving these outputs will provide in itself an important incentive to Network Rail and other industry parties (see annex C on outputs);
- the allocation of risk and reward as parties need something to gain from achieving the desired outcomes and something to lose if they are not achieved (see annex E on the financial framework);

- the form of the price control and duration of the control period, where our approach provides Network Rail with an incentive to outperform as it can keep the rewards for the duration of the price control. Changing the length of the price control can therefore have a significant impact on incentives and risks (see annex E on the financial framework); and
- the structure of charges sets the amount that train operators have to pay to use the network. This therefore creates important incentives for train operators to use the network and Network Rail to accommodate additional demand (see annex F on the structure of charges).

Key issues related to incentives in the rail sector

Importance of market mechanisms

- D.8 We consider that, as far as practical, the incentive framework should be market based. Market mechanisms and competition are more likely to be responsive to the changing needs of rail users and more likely to lead to better outcomes than purely administrative mechanisms.
- D.9 Market mechanisms or financial incentives work by financially rewarding a company (or individual) if it achieves or outperforms its target and – potentially – financially penalising it if it does not. This system of rewards and penalties is frequently referred to as carrot (rewards) and stick (penalties). The schedule 8 operational performance regime is a good example of this type of incentive. If Network Rail outperforms the performance benchmark it receives a financial reward. If however it fails to reach the benchmark it pays a financial penalty. Such mechanisms encourage Network Rail to deliver the performance benchmark efficiently and to outperform only when it is economic to do so.
- D.10 But market mechanisms will not be sufficient in themselves, particularly given the financial structure of Network Rail - reputational incentives and defined outputs have been particularly important in encouraging improved outcomes.

Constraints on market mechanisms

- D.11 In focusing on market based incentives, there are two key barriers which limit the effectiveness of financial incentives:

- (a) **Network Rail has weak corporate financial incentives.** Network Rail is a company limited by guarantee (CLG) and has members instead of shareholders. As members do not have any equity capital at risk they are not as strongly incentivised to drive Network Rail's financial performance. In addition Network Rail currently benefits from the financial indemnity mechanism (FIM) where its debt is government guaranteed. This transfers risk from Network Rail to government and means that Network Rail does not face a hard budget constraint. Both the CLG status and FIM weaken the transmission mechanism for corporate financial incentives;
- (b) **Franchised train operators are held harmless from changes resulting from a periodic review through protections in the franchise agreements.** This means that franchised operators are not exposed to changes in Network Rail's costs or the structure of charges during the life of a franchise. This limits train operators' interest in Network Rail's costs.

D.12 Our PR08 determination assumed that Network Rail would start to raise unsupported debt (debt without the benefit of the FIM guarantee) during CP4. This would introduce a hard budget constraint on Network Rail (by limiting the extent of the debt that could be covered by the FIM) and increase external scrutiny (as unsupported debt holders would want to assure themselves that Network Rail could deliver). The cost savings from the extra financial discipline generated would outweigh the additional cost it would impose on the cost of borrowing. However, the financial crisis made conditions in the financial markets more difficult and so far no unsupported debt has been raised. We continue to support Network Rail raising unsupported debt⁷ and this issue is discussed in more detail in annex E.

D.13 Through PR08 we established the 'efficiency benefit sharing mechanism' so that passenger and freight train operators could share in the savings if Network Rail could deliver its CP4 outputs at lower cost than we had assumed in our determination, therefore providing train operators with a greater interest and incentive in reducing Network Rail's costs. However DfT and Transport Scotland have not yet enabled the mechanism in existing

⁷ See our letter to Network Rail of 16 December 2010. This can be accessed at: <http://www.rail-reg.gov.uk/upload/pdf/unsupported-debt-letter-161210.pdf>.

franchises. This would require the franchise provisions which protect train operators from changes that result from a periodic review to be relaxed. This has significantly limited the scope and impact of the efficiency benefit sharing mechanism since it is only operational for new franchised operators and open access passenger and freight operators with any savings for franchised operators passed through to government. We continue to see benefits in efficiency benefit sharing and this is discussed in more detail below.

Impact of industry structure

D.14 The vfm study has recommended a number of changes to industry structure which could have a significant impact on industry incentives:

- devolution and decentralisation within Network Rail, with strong support for Network Rail's devolution proposals, which are seen to bring delivery closer to operators, and will enable comparative regulation of route performance;
- diverse ownership of route infrastructure management concessions, which would provide greater management independence and the ability to benchmark the efficiency of domestic comparators which would further strengthen efficiency incentives;
- alignment of route infrastructure management and TOCs. As discussed above there is poor alignment of incentives of train operators and Network Rail, in part due to the protections in franchise agreements. Devolution and diversity of ownership is likely to improve the alignment of incentives as infrastructure managers will be a similar size and geographically closer to many train operators. The vfm study proposes a number of measures to further improve alignment:
 - cost and revenue sharing between Network Rail and train operators, which the study envisages taking place across the network;
 - joint ventures/alliances between Network Rail and train operators, with the study recommending at least two joint ventures by 2013-14;
 - vertical integration through a concession of infrastructure management and train operations combined, where the study envisages at least one pilot in place by around the same time.

- D.15 We support developing the recommendations on cost and revenue sharing and are taking forward work in this area as part of the periodic review, and set out our proposals later in this annex. The other changes are beyond the scope of the periodic review and will require Network Rail, train operators, government and ourselves to work together to deliver. There are a number of ways that we can help to facilitate these changes for example through the publication of disaggregated Network Rail accounts and ensuring adequate protection is given to minor operators, and we will be taking this work forward in conjunction with the periodic review.
- D.16 Structural changes in the industry could have implications for key parts of the incentive regimes. For example joint ventures or vertical integration could impact on the need and/or the design of the performance and possessions compensation regimes, or cost and revenue sharing, as the impacts between the infrastructure areas and train operators involved will already be internalised.

Importance of competition

- D.17 Competition, or the threat of competition, is likely to provide strong incentives to improve efficiency. The rail industry is subject to varying degrees of competition. There is relatively strong competition:
- for rail franchises, with a number of bidders for each rail franchise;
 - in the rail freight market, with freight operators competing for contracts;
 - in the supply industry, for example to supply new rolling stock; and
 - for infrastructure renewals and enhancement projects, although this tends to be to a specification largely driven by Network Rail.
- D.18 There is less competition in other areas:
- on rail competition between franchised operators or between franchised and open access operators;
 - for infrastructure operations and maintenance expenditure (indeed maintenance was brought in house by Network Rail);
 - at the early stages of infrastructure renewals and enhancement projects.
- D.19 There may be good reasons why certain expenditure is not put out to competition, but there may be scope to increase competition in some areas, for

example by increasing the extent of open access entry, which is discussed in annex F.

Incentives used in rail and other regulated industries

D.20 Incentives are a key component of the regulatory framework for all regulators and it is therefore important to understand where rail can learn from best practice elsewhere. Ofwat recently commissioned work from Europe Economics which provides an overview of financial incentive schemes used across regulators⁸. The main regulatory tools are summarised in table D.1, together with a discussion on the extent to which they are used in rail. In addition to these tools there are a number of tools which we use that focus on the reputation of the regulated company including monitoring and reporting on the achievement of outputs and benchmarking against comparators.

Table D.1: Incentive tools used in regulation

Name	Description	Used in rail
Periodic review control	Incentives to improve efficiency is provided by the retention of outperformance during the control period	Yes
Rolling efficiency incentives	This is where efficiency incentives are equalised over time so that the company makes the same saving irrespective of when the saving occurred	Yes for capex
Management incentives	The regulated company's management incentive plan can be adapted to include various objectives such as performance	Yes
Comparative competition	This is where the comparative performance of different, generally domestic comparators, is used to set efficiency trajectories. This could involve yardstick regulation, where efficiency trajectories are explicitly related to the average performance of the sector.	No although Network Rail devolution will provide opportunities in this area

⁸ *Future price limits – risks and incentives: options appraisal*, Europe economics, June 2010. This document can be accessed at: http://www.ofwat.gov.uk/publications/commissioned/rpt_com_1010fplrisk.pdf.

Name	Description	Used in rail
Menu regulation	Where the regulated company receives a financial reward for disclosing accurate expenditure forecasts, reducing information asymmetry and the regulatory burden	No
Capex trigger	This is where the regulated company receives financial rewards only on the completion of specific infrastructure enhancements.	No
Cost of capital	Provides the regulated company with an incentive for efficient long-term investment by providing a set return on investments	Yes
Market based investment incentives	This can involve setting the return on investments equal to market rates. This can be done by for example auctioning off capacity. In a rail context this could encompass the use of scarcity charges.	No
Long-run marginal cost pricing	Setting charges equal to long run marginal costs (i.e. including costs of expanding capacity) provides efficient price signals to consumers and the regulated company about investment decisions.	No
Incentives to make better use of existing capacity	This is where financial incentives are provided for greater use of the network and encompasses incentives such as the volume incentive.	Yes
Quality of service incentives	This can encompass direct financial incentives for achievement of quality of service objectives. This can encompass the current possessions and performance compensation regimes	Yes
Discretionary awards	This can encourage best practice in areas where it cannot easily be measured or where it is difficult to set specific targets	No
Environmental incentives	Financial incentives provided to the regulated company for achieving environmental objectives	No

Name	Description	Used in rail
Carbon pricing in investment plans	An obligation on a company to include carbon pricing in its investment plans provides an incentive to ensure that carbon emissions are properly taken into account	No
Innovation zones	Provide the regulated company and third party with a test bed where innovative solutions might be used	No
Innovation funds	Provide subsidies towards innovation and or research and development spending	No
Increasing contestability	Increasing competition for infrastructure expenditure, particularly at early stages of development. This is to some extent achieved through existing mechanisms such as funds defined during HLOS where either train operators or Network Rail can be allocated funding for enhancement projects	Yes to some extent

Financial incentives on Network Rail to improve efficiency

Overview

D.21 There are a number of ways in which Network Rail is incentivised to improve efficiency:

- it can retain benefits from outperformance (to reduce its borrowings, to invest in the network or to rebate to customers and funders);
- rolling capex incentives which attempt to equalise incentives over the control period;
- management incentives through Network Rail's management incentive plan;
- benchmarking of Network Rail's costs against comparators; and
- our annual finance and efficiency assessment of Network Rail reporting on the achievement of efficiency targets.

- D.22 Greater devolution and the disaggregation of financial information will provide an opportunity to introduce comparative competition between routes. Independent ownership of route infrastructure managers may increase the scope for innovation, potentially increasing incentives to improve efficiency.
- D.23 There may also be opportunities to improve Network Rail's incentives through the introduction of new techniques such as menu regulation, increasing contestability or improvements to the rolling incentive mechanism and Network Rail's management incentives.

Rolling incentive mechanisms

- D.24 The price control framework can impact on Network Rail's incentives to reduce costs in two important ways:
- (a) **whether incentives are balanced over time**, i.e. to avoid Network Rail only having incentives to reduce costs at the start of a control period as it can keep the savings for longer; and
 - (b) **whether the incentives on different types of expenditure are balanced** to avoid Network Rail unduly favouring savings in capital over operating expenditure.

Balancing incentives over time

- D.25 Generally, economic regulators have recognised that normally the incentives on a regulated company decline over the course of a control period unless a specific mechanism is introduced to address this. In simple terms this is because if a company makes a saving in year one of a five-year control period they keep it for five years but if they make the saving in year five they only keep it for one year.
- D.26 We recognised this problem in PR08 for Network Rail's capital expenditure (capex) and introduced a rolling capex incentive scheme for renewals and enhancements that has the effect of equalising the incentives over the control period, so that irrespective of when expenditure is incurred Network Rail's incentives are the same.
- D.27 At present we plan to retain this, but we are reviewing how well this incentive is working.

Equalising incentives across different types of expenditure

- D.28 The other major issue that we need to consider in PR13 is whether incentives are equal across different types of expenditure (and potentially income). In particular we will need to consider whether there is any bias towards capital expenditure and to what extent this is a reflection of our incentive framework and other factors such as company culture, incentives on other stakeholders including government.
- D.29 In PR08 we reduced the incentive rate on capex from 100% to 25% in response to concerns that Network Rail was overly exposed to overspend. This means that for every pound of overspend Network Rail is exposed to 25% of the cost increase. The mechanism operates by increasing/reducing the value of Network Rail's RAB at the start of the next control period by the amount of capitalised over or under-spend, plus capitalised financing costs, less 25% of the over or under-spend. This means that Network Rail always bears a financial cost/benefit of 25% of the over or under-spend, which is equivalent to Network Rail bearing the capitalised financing costs associated from over or under-spending for five years.
- D.30 As a consequence, the incentives for one-off savings are different across different types of expenditure, see table D.2 below. For example, if Network Rail underspends on maintenance by a pound it keeps a pound and if it overspends by a pound it loses a pound (i.e. a 100% incentive rate). However, other incentives for capital expenditure are lower than this, i.e. the incentive rate for renewals is effectively 25%. The proportion of recurring savings will depend on when during the control period the saving is made. For example if a recurring saving is made in year one of a control period then the company will keep making this saving in the remaining years of the control period. While the company will continue to benefit from the efficiency improvement in future control periods, the savings will be captured by funders/customers when setting future access charges and funding. The company will therefore only retain a proportion of the overall benefit that accrues from a recurring efficiency improvement.
- D.31 The differences between the incentive rates across different types of expenditure is mitigated to some extent as savings in capital expenditure tend to be one-off and savings in operating expenditure tend to be recurring and are therefore captured by funders and customers at the time of the next

periodic review. As illustrated in table D.2 the incentive rate on one-off capital expenditure can be similar to that for recurring operating expenditure.

D.32 One way to address the potential bias between different types of expenditure is to base incentives on total expenditure, rather than set separate rates for capex and opex. This approach has recently been suggested by Ofgem as part of its RPI-X@20 review. While intuitively simple, basing incentives on total expenditure could be complex for the regulated company to respond to as the company would need to trade off opex savings which tend to be recurring and capex savings which tend to be one-off. It can also encourage the lease of assets when purchasing may be more efficient long-term option.

Table D.2: Summary of financial incentives on expenditure and income on Network Rail

Category	% of out/under performance retained by Network Rail	
	One-off	Recurring
Controllable opex (support functions and operations)	100	6 – 28
British Transport Police and Railway Safety and Standards Board costs	100	6 – 28
Maintenance	100	6 – 28
Renewals	25	2 – 9
Enhancements	25	2 – 9
Other single till income	100	6 – 28
<p>Notes:</p> <p>1. Recurring or permanent savings/costs assumes savings continue 30 years and use a 4.75% discount rate. A 28% saving reflects that Network Rail will retain 28% of the total savings assuming that these would continue over 30 years (after allowing for discounting)</p> <p>2. Certain enhancement projects have their own specific incentive rates.</p> <p>3. The ranges reflect the timing of the saving/cost, e.g. higher figure represents a saving in year 1 and the lower figure represents a saving in year 5.</p>		

D.33 We consider that it is appropriate to equalise the incentives on capex and opex, such that the period of retention for opex is equalised both to ensure that the incentive to make opex savings is not weakened towards the end of the control period and to address any potential bias towards capex efficiency.

Menu regulation

D.34 Menu regulation is a method of incentivising the regulated company to accurately forecast costs as part of their business plan, without removing the incentive to outperform. It is a method of solving the problem of information asymmetry where the company knows more than the regulator about the level of actual costs. Menu regulation has been used by both Ofwat and Ofgem in previous price determinations and the Nelson review recommended that we should examine this as part of the next periodic review.

D.35 Menu regulation works by providing greater rewards to the regulated company the greater the accuracy of their business plan forecast. The regulator and the company both put forward forecasts of expenditure for the next control period. The regulator also presents a matrix of options or 'menus' which have varying levels of allowed expenditure and associated returns and efficiency incentives. The menu matrix is set so that the returns to the company are highest if it accurately discloses its actual expenditure than if a company "overbids".

D.36 The operation of menu regulation is illustrated in table D.3. In the example the company believe that their expenditure requirement for the next control period is £100m but they bid £200m. The regulator also believes the expenditure requirement is £100m (the 'base case'). The allowed expenditure is set using a pre-defined formula, for example both Ofwat and Ofgem have in the past set this as the base case plus 25% of the difference between the regulators and company's forecasts. The greater the difference between the regulators and company's forecasts the higher the proportion of pain/gain share. The menu also provides additional rewards or penalties with higher penalties the greater the company's forecast is above the regulators.

Table D.3: Example of menu regulation

Scenario (in £m)	Accurate plan	Overbid plan
Company forecast	100	200
Allowed expenditure (regulators base case plus 25% of the (company forecast minus basecase))	100	125
Additional income (preset)	5	-10
Efficiency incentive (preset)	50%	10%
Outcome		
Actual outturn expenditure	100	100
Underspend	0	50
Allowed expenditure	100	125
+ additional income	5	-10
- efficiency incentive adjustment	0	-22.5
Total allowance	105	92.5

D.37 Menu regulation could be useful in that it would:

- reveal how Network Rail is incentivised, for example is it choosing a low risk and financial reward combination or a higher risk and reward combination; and
- reduces the risk of overbidding as the total reward will be higher if Network Rail predicts actual expenditure than if it is higher than planned expenditure.

D.38 There are however difficulties in using menu regulation for rail at the current time:

- there are difficulties in implementing the mechanism for a single company in that other regulators have used comparative assessments of different companies to set their base case for allowed expenditure;

- it places great reliance on the accuracy of the regulator's assessment of base case expenditure and can penalise companies that have different views to the regulator;
- there may be concerns over how Network Rail as a company limited by guarantee would react to a mechanism which is so strongly based on financial incentives;
- while the concept is simple, the incentive matrix is complex and difficult to understand; and
- if the company puts in a high bid for expenditure this would result in a higher expenditure allowance than if the company was only provided with the regulator's assessment of base case expenditure.

D.39 On balance we are not minded to introduce menu regulation as part of PR13.

Network Rail's management incentives

D.40 Network Rail's management incentive plan (MIP) sets out the basis for the reward of senior Network Rail executives. As such the MIP can have an important impact on the priorities of Network Rail's management and staff. We would expect any future MIP for CP5 to reflect PR13 output requirements to ensure that the company's incentives are aligned to those of the periodic review.

Contestability

D.41 Increasing the contestability, or the level of competition, for infrastructure expenditure could improve incentives for efficiency. Contestability could be increased in three ways:

- by transferring some elements of infrastructure expenditure to train operators, who would competitively bid for the level of required expenditure as part of franchise bids. This would be the case if station maintenance and renewal expenditure is transferred to train operators, or if vertically integrated concessions were introduced;
- by putting a greater proportion of Network Rail's expenditure out to competitive tender. This would be the case if there was a competitively tendered infrastructure management concession for a Network Rail operating route; and

- by putting Network Rail expenditure out to competitive tender at an earlier stage of development, for example tendering work from the project development stage rather than the construction stage.

D.42 We are currently undertaking the following related work as part of our market studies programme:

- how Network Rail's approach to procurement and management of the supply chain affects the cost base of the supply chain;
- the factors which characterise a service as contestable or non-contestable; and
- the cost to third parties of Network Rail's asset protection activities, which is one of the factors affecting contestability for works on or near Network Rail's assets.

D.43 Based on the results of our market studies programme and the emerging changes to the industry structure we will do further work during PR13 to identify whether we can increase the contestability of expenditure to improve incentives for efficiency.

Financial incentives to improve reliability: the schedule 8 performance regime

D.44 The performance regime included in schedule 8 of track access contracts provides an incentive to train operators and Network Rail to improve continuously operational performance, where it is economic to do so, by paying bonus payments/financial compensation where performance is better than/worse than benchmark.

D.45 The performance regime needs to be considered within the overall package of incentives on train operators and Network Rail to improve performance, which also include:

- Network Rail has regulatory targets for operational performance in terms of PPM and significant lateness and cancellations;
- Network Rail and train operators have Joint Performance Improvement Plans;

- train operators have performance trajectories as part of their franchise agreements and are exposed to the revenue impact of customers' reactions to changes in performance; and
- there are strong reputational incentives to maintain or improve operational performance given the high public profile attached to measures of performance and delays.

D.46 The passenger and freight performance regimes are similar in that they are both benchmarked regimes, where payments are made when performance diverges from the benchmark. Both regimes also channel the impact of one train operator's performance on another through Network Rail in what is called the 'star model'.

D.47 The regimes differ in terms of payment rates. Passenger train operators' payment rates are based on the marginal revenue effect (MRE) the forecast loss (gain) of farebox revenue resulting from poor (good) performance. Freight operators' payment rates are based on forecast revenue losses, and additional costs where services are cancelled. In addition under the freight regime freight operators are given some protection against potentially large payments as performance better than benchmark is compensated at 50% of the rate for performance worse than benchmark. Additional compensation is provided for sustained poor performance (passenger regime) and cancellations beyond a threshold (freight regime). Train operator payment rates and benchmarks for both passenger and freight regimes were updated as part of the last periodic review.

D.48 We anticipate undertaking a full recalibration of as part of PR13. In addition, where sensible, we will seek to address anomalies in the regime. To assist this, as part of the development of this consultation we informally sought the views of stakeholders on the functioning of the current regime. This raised a number of specific issues which we will need to consider going forward. These include:

- (a) the possibility of a kinked payment curve in the passenger regime so that there is a lower compensation rate for improvements at high levels of performance, which may better reflect passenger perceptions;

- (b) whether there should be greater differentiation in the structure of the regime for long distance and other passenger services to reflect the different perceptions of passengers;
- (c) whether changes are required to the capping regime to make it function more effectively;
- (d) a review of the level of the threshold for sustained poor performance;
- (e) the possibility of a lag on compensation payments, making payments every three periods or as an moving annual average for example, to mitigate cash flow uncertainty associated with monthly performance variations;
- (f) reviewing the relationship between schedule 8 and other incentive mechanisms (such as joint performance improvement plan/long-term performance plan and trajectories in franchise agreements) and the extent to which the various mechanisms reinforce or offset each other; and
- (g) relaxing the financial protections in new franchise agreements to permit TOCs to benefit from changes in the performance regime (this is considered in the alignment section below).

D.49 There are however two broader issues which we are considering in relation to the regime:

- (a) whether the Schedule 8 regime should be 'turned off' for train operations and infrastructure where there is vertical integration or where joint ventures or alliances which make it less relevant as performance impacts may be internalised; and
- (b) whether we should reduce bonus payment rates in the passenger regime so that Network Rail and train operators both benefit from continuous improvements in industry performance (under the present regime train operators do not financially benefit from Network Rail improvements and vice versa).

Financial incentives to minimise planned disruption: the schedule 4 possessions regime

- D.50 Train operators' normal access to the network can be affected by planned disruption, where Network Rail takes possession of parts of the network, mainly to undertake engineering works.
- D.51 The schedule 4 possessions regime provides compensation for train operators where Network Rail takes possessions. It therefore provides a financial incentive for Network Rail to reduce disruption to train operators, where it is economic to do so. As with operational performance, the possessions regime needs to be considered within the context of the overall package of incentives to minimise disruption:
- the possession disruption index, for which we set regulated targets to reduce planned disruption to passenger services and for no increase in disruption for freight services over the course of CP4; and
 - joint network availability plans (JNAPs) which set out the approach of Network Rail and train operators to reducing the impact of possessions on services.
- D.52 The possessions regimes for passenger and freight operators are different. Both regimes were restructured significantly as part of PR08. The key features of the passenger regime are:
- (a) operators should receive compensation for all disruptive possessions;
 - (b) to minimise transaction costs, formulaic compensation is available for less disruptive possessions, with the ability to claim actual revenue and cost compensation where possessions are long or disruption is sustained;
 - (c) formulaic revenue compensation is based on operator specific schedule 8 payment rates, with discounts available depending on the notification provided by Network Rail to the train operator which reflect the likely impact on operators and revenue; and
 - (d) in return for this compensation, franchised operators pay an access charge supplement based on the estimated cost of the regime.

- D.53 Where open access operators do not pay an access charge supplement they only receive compensation for very long possessions or sustained disruption. This is currently the case for passenger open access operators.
- D.54 The freight regime is structured so that there are three levels of compensation depending on the degree of disruption (with the possibility of compensation for actual losses for very severe disruption) and higher payments made for late notice possessions. Freight operators only receive compensation for significant disruption and so do not pay an access charges supplement.
- D.55 While the new schedule 4 regime has only been operating for two years, we consider that it offers broadly the right incentives, although we have identified a number of potential issues, which are:
- (a) whether the regime places sufficient incentives on Network Rail to reduce the length of the possessions planning process;
 - (b) the effectiveness of the negotiation and enforcement process;
 - (c) the level of precision in computing access charge supplements so that they reflect specific conditions faced by operators;
 - (d) whether the compensation thresholds are appropriate; and
 - (e) relaxing the financial protections in franchise agreements to permit TOCs to benefit from changes in the possessions regime (this is considered in the alignment section below).
- D.56 Looking ahead to CP5, we anticipate the broad structure of the schedule 4 regime remaining in place, but as with the schedule 8 regime, there are some key issues that we will need to consider as part of PR13:
- (a) whether the Schedule 4 regime should be 'turned off' for train operations and infrastructure where there is vertical integration or where joint ventures or alliances which make it less relevant as possessions impacts may be internalised;
 - (b) whether the compensation rates should be reduced to increase incentives for operating companies to explore innovative timetabling

solutions as an alternative to for example simply offering replacement bus services; and

- (c) whether there should be a return to a free possessions allowance where compensation would only be payable for possessions taken outside this allowance. In return the access charge supplement could be reduced or removed.

Financial incentives to make best use of and grow the network: the volume incentive

Existing incentives to accommodate additional demand

- D.57 The existing structure of charges can mean that Network Rail has limited financial incentives to accommodate additional traffic. Through the charging structure in place Network Rail receives additional revenue for additional traffic equivalent to the long-term efficient variable cost, i.e. the variable costs taking into account long-term rather than current levels of efficiency. As Network Rail's variable costs are currently above long-term efficient levels, then the charging structure can disincentivise Network Rail to accommodate additional traffic.
- D.58 In PR08, we therefore retained the volume incentive following its introduction in CP3. The volume incentive provides a lump sum cash payment (subject to affordability constraints) at the start of CP5 for accommodating additional traffic over and above that envisaged in the HLOSs. Payment rates are set at 25% of the economic value of additional traffic are split between (a) passenger train miles (b) TOC revenue (c) freight train miles and (d) freight tonne miles. By way of illustration, if growth on the network was double that assumed in the baseline, Network Rail could receive a volume incentive payment for CP4 of around £200m. Network Rail receives a payment only if it can demonstrate that it has delivered its capacity related outputs.
- D.59 The mechanism is 'upside only' in the sense that Network Rail is not penalised through the volume incentive if it fails to deliver capacity. Rather, such a failure is dealt with through other aspects of the regulatory framework, notably through enforcement of Network Rail's licence.

Issues for PR13

D.60 Issues to consider in improving incentives to make best use of existing capacity include:

- whether greater prominence should be given to Network Rail's role as the network system operator by for, example, enhanced licence conditions or a separate licence;
- whether a single body should be responsible for whole system capacity utilisation, covering both train operations and rail network;
- whether incentives should be placed on train operators as well as Network Rail to improve capacity utilisation;
- increasing the power of the volume incentive, for example by exposing Network Rail to downside as well as upside risk;
- developing a new metric for capacity utilisation, as recommended by the vfm study. Existing measures (such as the capacity utilisation index) are good at identifying where there may be spare capacity in the timetable; however, they are less suitable where a new timetable is required. There may also be benefit in setting explicit targets for the new metric;
- exposing Network Rail to some form of revenue sharing as part of the cost and revenue sharing proposals, then Network Rail's incentives to accommodate additional traffic would be increased (see below); and
- amending the structure of charges so that Network Rail's incentives to grow or develop the network are improved. This could encompass: market-based investment incentives by auctioning off capacity, amending variable charges so that they reflect long-run marginal costs and the introduction of scarcity or reservation charges.

Aligning Network Rail and train operators' incentives and promoting industry-wide efficiency

Overview

D.61 One of the key themes emerging from the vfm study and the industry reform work is the need to better align incentives between train operators and Network Rail, in particular to drive cost savings. We consider that there are considerable benefits from closer alignment of train operators and Network Rail. These include:

- taking a whole system approach to identifying efficiencies, for example 'on train' infrastructure condition monitoring;
- a better, more commercial and whole system focus of asset management; and
- a more normal customer supplier relationship creating a more effective commercial tension at a periodic review.

D.62 The following section provides:

- (a) an overview of cost and revenue sharing proposals, where train operators and Network Rail can share out and under performance of agreed trajectories;
- (b) a description of the proposals for improved cost and revenue sharing in terms of:
 - (i) a regional efficiency benefit sharing mechanism;
 - (ii) exposing train operators to changes in Network Rail's costs at a periodic review;
 - (iii) exposing Network Rail to changes in train operators' revenues and costs.
- (c) aligning incentives for efficient enhancement expenditure; and
- (d) switching on TOC incentives: relaxing financial protections in train operators' franchise agreements.

Overview of cost and revenue sharing

D.63 As part of the work on industry reform Network Rail ATOC and ourselves, working jointly, commissioned LEK Consulting to develop and assess options to improve cost and revenue sharing (CARS) between train operators and Network Rail. LEK considered the following options:

- (a) **option 1: full scope.** Under this option Network Rail and train operators would, at a route level, share both outperformance and underperformance on cost and revenues each year against agreed baseline trajectories. LEK suggests that the share of out/underperformance should be around 15-25%.

- (b) **option 2: regional version of the PR08 efficiency benefit sharing mechanism (upside only).** This option covers sharing of outperformance by Network Rail with operators at a route level on a formulaic basis, i.e. Network Rail shares 25% of outperformance with operators apportioned according to their share of variable usage charges.
- (c) **option 3: regional version of the PR08 efficiency benefit sharing mechanism (upside and downside).** This option covers sharing of outperformance by Network Rail with operators at a route level on a formulaic basis, i.e. Network Rail shares 25% of under and outperformance with operators apportioned according to their share of variable usage charges.
- (d) **option 4: partial exposure to periodic review changes.** LEK looked at exposing franchised train operators to some of the variation in fixed track access charges (which reflect Network Rail's cost base) or Network Rail operating, maintenance and renewal cost at a periodic review. This would require the support of the franchise authority to remove current protections in franchise agreements and could be implemented for new franchises. LEK sees these options as creating a more normal customer-supplier relationship. We consider that there is a further option where franchised train operators are exposed to changes in variable track access charges, which would put them in a similar position to open access freight and passenger operators.
- (e) **option 5: higher variable track access charges.** Higher variable track access charges could be established – which would create incentives for Network Rail to accommodate additional traffic as the income from additional services would outweigh the additional costs.
- (f) **option 6: Network Rail shares TOC revenue.** Exposing Network Rail to a share in train operator revenue (in exchange for a reduction in fixed track access charges) would increase Network Rail's exposure to the end-user market and incentivise Network Rail to help train operators to maintain and grow their revenue. It would align incentives more directly than the approach based on increased variable track access charges. LEK suggests a revenue share of 5-

20%. The treatment of open access passenger and freight is clearly important in this option, as it is in all of them, and it would be necessary to ensure that any option does not discriminate against them and that incentives on Network Rail are equalised.

- (g) **option 7: bespoke, 'line-of-sight' deals.** At LEK's workshops 'bespoke deals' were identified by some participants as an appropriate basis for CARS. This would involve train operators and Network Rail agreeing cost and revenue sharing on specific items of expenditure, where benefit sharing would be based on negotiation rather than pre-defined rates.

D.64 LEK recommended that, in the first instance, the best option for developing cost and revenue sharing would be through bespoke deals. LEK stated that these were likely to be most effective if there was a degree of horizontal separation within Network Rail, for example through Network Rail's devolution proposals.

D.65 If there was appetite to go further then LEK recommended it would be better to start with a more limited scope option and widen this as parties became more comfortable. We understand that a number of train operators are discussing bespoke deals with Network Rail and we support the principle of this. However we consider, as do many in the industry, that Network Rail and train operators need further and stronger incentives to work together to reduce costs and increase revenue. Our views on potential measures are considered in more detail below. Going forwards we will need to consider how these more formal arrangements could work with bespoke deals.

Regional efficiency benefit sharing mechanism

D.66 We consider that there would be significant benefits from introducing an efficiency benefit sharing mechanism operating at the route level. Moving to a route level from the existing national level implementation would improve train operators incentives to work with Network Rail to reduce costs as the impact of any measures would be more transparent and attributable (due to the smaller cost base and the more limited number of train operators using individual Network Rail routes).

D.67 Based on LEK's work there appear to be two issues with a regional efficiency benefit sharing mechanism that need to be addressed:

- the ability of train operators to influence Network Rail's costs, and
- the incentives that it would place on some train operators to 'side with' Network Rail as part of a periodic review.

D.68 On the first point, train operators' ability to influence Network Rail's costs will be enhanced by Network Rail's current devolution proposals, where many more decisions are devolved to route level, closer to the interface with train operators. Tackling the second issue would largely fall to us – through our analysis of Network Rail in a periodic review and potentially exposing train operators directly to changes at a periodic review. It is important to note that open access passenger and freight operators are exposed to changes in charges at a periodic review and would not benefit from the concept of a 'soft' determination.

D.69 In contrast with the existing efficiency benefit sharing mechanism there are good arguments that the mechanism for PR13 should be both upside and downside, although - recognising risk and the possible impact on franchise value - there may be merit in an asymmetric design of the mechanism (e.g. the downside exposure is less than upside through capping). While this mechanism may increase risk to train operators it will also provide them with a greater interest in how Network Rail performs.

D.70 At present our view is that we should retain the other properties of the current regime, namely:

- the level of aggregate TOC sharing at 25% of outperformance as this provides reasonably strong financial incentives and that a non-trivial proportion of cost saving initiatives should originate from train operators;
- it should cover operating, maintenance and renewal costs (we discuss the treatment of enhancement costs below);
- efficiency impacts should be distributed across train operators in proportion to the level of track access charges paid in the operating route; and
- the regime should be paid in cash by Network Rail, after audit, in the following year in which efficiency impacts are realised.

D.71 To help inform consultation responses tables D4 and D5 provide an illustration of how the regional efficiency benefit sharing mechanism might

work for Network Rail's London North Eastern (LNE) route if Network Rail outperforms the efficiency trajectory by 2% (using 2011-12 as the baseline). This illustration shows the impacts for a single year but the full effect would be over the whole control period, depending on the timing and extent of outperformance (freight is excluded from the table but would be included in a mechanism).

Table D.4: Illustration of the impact of efficiency benefit sharing – overall outperformance

	£m
Network Rail operating maintenance and renewal costs	736
2% outperformance	14.7
TOC share of 25%	3.7

Table D.5: Illustration of the impact of efficiency benefit sharing – payments to train operators

Train operating company	% share within LNE	Out-performance share (£m)	Profit increase
East Coast	51%	1.9	8%
First Capital Connect	14%	0.5	3%
Northern	13%	0.5	2%
Arriva Cross Country	10%	0.4	2%
Transpennine Express	8%	0.3	3%
East Midlands Trains	3%	0.1	2%
Total	100%	3.7	

Note: Profits assumed to be 4% of forecast revenues. Totals may not sum due to rounding

Exposing train operators to changes in Network Rail's costs at a periodic review

D.72 There may be benefits from exposing train operators to changes in Network Rail's costs at a periodic review. Such an approach could be applied in conjunction with the regional efficiency benefit sharing mechanism explained above. This will help to equalise train operators' incentives at a periodic

review and will align further the incentives of Network Rail and train operators. We recognise that exposing franchised train operators to changes in Network Rail's costs at a periodic review is a matter for franchise authorities as this would require changes to franchise agreements. It may only be possible for new franchise agreements.

D.73 We consider the pros and cons of the various options as follows:

- **Exposure to changes in variable usage charges.** This would put franchised train operators in a similar position to freight and open access operators and might therefore be easy for operators to understand and implement (although some of the changes below may make this more complex). However the changes in variable usage charges may not be sufficient to encourage train operators to engage (variable usage charges are typically 1-3% of total franchised train operators' costs), could encourage a focus on track costs (as these dominate variable costs) and could be impacted by methodological changes which are beyond the control of train operators. In addition unless variable usage charges are calculated at a route level, operators may feel that they could have a limited impact on charges.
- **Exposure to changes in a proportion of the fixed charge.** Fixed charges reflect all of Network Rail's costs and so train operators would therefore be interested in trying to reduce all costs. The proportion of fixed charge that train operators are exposed to could be set to ensure that train operators have an interest in Network Rail's costs but that risks are not increased unduly, for example 40% of the fixed charge represents between 4 and 7% of train operators' costs. The level of the fixed charge is affected by the level of the network grant and to ensure consistency over time it may be necessary to adjust the proportion of the fixed charge that train operators are exposed to so that this reflects changes in the network grant over time. However there are some elements of a fixed charge that operators may find it difficult to influence, for example the level of debt interest cost or amortisation and the potentially significant impact of methodological changes.
- **Exposure to changes in a proportion of Network Rail's operating, maintenance and renewal costs.** This would limit train operators exposure to areas of costs where they could potentially have an impact. The proportion of cost exposure could be set so that train operators have

an interest in Network Rail's costs, for example 10% of Network Rail's costs would represent between 5-10% of train operators' costs. There is much less exposure to changes in methodology than the other options.

Exposing Network Rail to changes in train operators' costs

D.74 Network Rail could be exposed to changes in train operators' costs. This could have benefits, for example the timetable, which is produced by Network Rail, is a key driver of some elements of train operators costs such as staff and rolling stock utilisation. Network Rail can also impact on train operating costs in other ways such as delays and engineering possessions.

D.75 There are however potential problems with exposing Network Rail to these risks:

- definitional issues of group costs versus franchise accounts;
- an open book approach would be needed to make cost sharing fully effective, however train operators are likely to be sensitive to sharing their commercial information;
- some areas where Network Rail affects train operators costs such as performance and possessions are covered by the existing schedule 8 and 4 compensation regimes; and
- train operating costs are affected by a variety of other factors such as staff wage costs which may be difficult for Network Rail to influence.

Exposing Network Rail to changes in train operators' revenues

D.76 Exposing Network Rail to changes in train operators' revenues would help to incentivise Network Rail to help to grow industry revenue. It would also reduce train operators exposure to fluctuations in revenue, helping them cope with recessions or other unexpected events. We are however mindful that there are existing incentives on Network Rail to maximise train operators revenues in certain areas, namely:

- (a) Network Rail is exposed to changes in revenues that result from its own operational performance through the schedule 8 performance regime;

- (b) Network Rail is exposed to changes in revenues that result from its own planned disruptions through the schedule 4 possessions regime; and
- (c) Network Rail already has an incentive to accommodate additional traffic through the volume incentive, where Network Rail receives a cash payment for additional traffic over a baseline.

D.77 Such mechanisms may need to be reformed if Network Rail is exposed directly to train operators' revenues.

D.78 We are also mindful that there may be particular difficulties in Network Rail sharing train operators' revenues:

- (a) any mechanism could dampen train operators existing incentives to maximise revenue (as illustrated by the cap and collar regime);
- (b) any mechanism would need to align with protections in the franchise agreement, in particular DfT's proposals to protect train operators from changes in GDP risk in some franchises;
- (c) given protections in franchise agreements and the change to the risk profile it may only be possible to introduce a mechanism for new franchises. This could mean that Network Rail may need to operate a dual system of revenue sharing with some operators and schedule 4/8 and volume incentive for other operators;
- (d) setting a baseline for revenue growth may be difficult, for example should this be the train operators bid line or should this be adjusted for risk and uncertainty;
- (e) any mechanism could increase Network Rail's risk exposure which may need to be reflected in its revenue requirement or in other regulatory protection mechanisms;
- (f) changes discussed under the structure of charges could increase variable track access charges and so increase Network Rail's incentives to accommodate additional traffic; and
- (g) Network Rail can only impact on train operators revenues in certain ways, the most important of these are likely to be operational

performance and planned disruptions, although timetabling impacts such as service frequency and journey times, and other aspects of customer satisfaction are also important such as station ambience.

Aligning incentives for efficient enhancement expenditure

- D.79 One of the issues raised by the vfm study and the industry reform work is the need to review incentives around enhancement expenditure to ensure that contestability is maximised (contestability has also been considered earlier in this annex). While we have discussed potential improvements to Network Rail's financial incentives earlier in this chapter, train operators can play an important role in increasing the contestability of enhancement expenditure and improving efficiency. In particular Nichols noted that the delivery efficiency of train operators for station projects was higher than Network Rail, although they noted that further data would be required to establish this as a trend. There have also been problems with some projects delivered by operators.
- D.80 The regulatory framework already provides mechanisms for train operators to deliver enhancements on their own behalf. Through our investment framework train operators can promote schemes, where the costs can be added to the RAB and paid back through a facility charge until the scheme has been fully amortised. This allows schemes to be financed that may not otherwise be possible due to payback periods extending beyond the end of franchise agreements. These mechanisms have been used by train operators on a number of occasions for stations and other schemes.
- D.81 As part of PR08 we introduced the HLOS 'fine tuning' mechanism, whereby Network Rail could transfer expenditure to train operators to allow the delivery of HLOS outputs. A series of funds was also established through PR08, particularly notable amongst these was the national stations improvement programme (NSIP), where both train operators and Network Rail could bid for the use of funds which met output requirements. NSIP has appeared to be successful in that numerous train operators have bid for work. Given that train operators can sometimes be more efficient than Network Rail, the HLOS fine tuning mechanism appears to be little, if ever, used. While this could reflect train operators lack of knowledge of the

mechanism, it is also likely to reflect the lack of financial incentive for train operators to deliver outputs on behalf of Network Rail.

- D.82 There may be a case for extending the scope for efficiency benefit sharing to cover enhancements so that train operators benefit if Network Rail reduces the costs of enhancement expenditure. Given the potential scale of some enhancements and the potential distribution of liabilities we do not consider that a formulaic approach should be used for enhancement benefit sharing. However we do support the development of bespoke arrangements where Network Rail can share efficiency gains with train operators. Furthermore there may also be a case for exposing train operators to an element of Network Rail's enhancement costs at a periodic review.

Switching on TOC incentives: relaxing financial protections in train operators franchise agreements

- D.83 The design of franchise agreements has developed over time specifically to reduce the risks to operators that are outside of their control, increasing the value of franchise bids. The financial protections within franchise agreements mean that any changes made under a periodic review are effectively negated from the perspective of train operators.
- D.84 In the sections above we have discussed mechanisms to expose train operators to some of the changes in Network Rail's costs or track access charges. Franchise agreements also protect train operators from changes in the schedule 4 possessions regime and the schedule 8 performance regime. Again, this is an issue for franchise authorities and might only be introduced for new franchises. We consider that there may be a case for relaxing franchised train operators protections from changes at a periodic review to schedules 4 and 8. The potential costs and benefits of doing this will need to be weighed carefully. The change would:
- (a) put franchised operators on a similar basis to open access passenger and freight operators;
 - (b) ensure that franchised train operators engage actively in this part of the periodic review;
 - (c) ensure that train operators are not held neutral to changes which simply represent the evolution of train operators revenues and costs

over time, for example the rebasing of schedule 8 payment rates which tends to happen at a periodic review;

- (d) ensure that train operators benefit from improvements which increase the accuracy of the mechanisms over time, for example where anomalies are removed; and
- (e) avoid the complex negotiations that take place between train operators and franchise authorities after a periodic review, reducing the risk of gaming.

D.85 Removing franchise protections would increase risks to train operators. We consider that there are three options, which are incremental in nature:

- (a) removing protections from payment rates which simply reflect changes in underlying demand, revenue and cost data. This would be potentially the simplest option and would minimise the change in risk to train operators. An important issue will be whether this covers both schedule 4 as well as schedule 8 and whether it also covers access charge supplements where the allocations across train operators are subject to some uncertainty;
- (b) removing protection from changes which simply remove anomalies or reflect improvements to the regime. This would improve train operators incentives, although there risks to train operators could increase particularly where there is uncertainty whether changes remove anomalies or are fundamental changes to the regime; and
- (c) removing all protections from changes to schedules 4 and 8. This would align fully train operators and Network Rail's incentives but could increase train operators risks, perhaps significantly. In particular if the access charge supplement is included, given its accuracy. To reduce these risks we could provide assurance that we would not make fundamental changes to the regime over the course of a franchise although this could constrain significantly our ability to make improvements in the future. Alternatively we could limit fundamental changes to new franchises only. However this could have significant implications for the functioning of mechanisms such as the star model, which Network Rail would need to be compensated for. Given

these problems we consider that existing franchise protections provide a better approach to protecting train operators in this area.

Other incentives to improve industry outcomes

Incentives to encourage innovation and the adoption of best practice

- D.86 There are concerns that the rail industry lags behind other sectors in terms of its ability to develop and deliver innovation.
- D.87 Network Rail has incentives to innovate to respond to the CP4 efficiency challenge. Further scope for innovation will be created by Network Rail's proposals for greater devolution and vfm study proposals for an independently owned route infrastructure management concession.
- D.88 The vfm study has suggested that, building on the experience of other sectors and railways, there should be a rail innovation and growth team (RGIT) to encourage industry parties to innovate through identifying technological opportunities, and showing where and how those parties could obtain returns for their investment. It should be for the industry to decide whether to take forward the proposals for the RGIT.
- D.89 Other regulated sectors are introducing specific measures to encourage innovation. For example Ofgem has a low carbon fund to provide funding for innovative projects. Ofgem's 'RPI-X@20' project seeks to build on this and recommends the introduction of an innovation stimulus package. This package would be time limited and would provide partial funding to help develop innovative projects and significant rewards or 'prizes' for companies that implement new commercial arrangements that help to deliver a sustainable energy sector. Funding would be available to regulated companies and third parties.
- D.90 Innovation zones have been used by other regulators, for example Ofgem has introduced registered power zones (RPZs) where distribution networks are encouraged to develop and demonstrate new more cost-effective ways of connecting to the network, but they may not be particularly relevant to railways.

Incentives for greater energy efficiency

- D.91 Rail transport produces less carbon emissions than most alternative forms of transport. But this does not mean that rail should not do more to improve its energy efficiency and it is important that improved energy efficiency is encouraged, where it is economic to do so.
- D.92 Train operators pay for traction electricity through a system of metered consumption or modelled consumption rates with a wash-up to allow Network Rail to recover its full costs (with the recent start of moves away from this method to payment on the basis of metered consumption). The system of modelled consumption rates has not provided an incentive to train operators and Network Rail to improve energy efficiency. Incentives however should be improved greatly by the proposed changes to traction electricity charges set out in Annex G.
- D.93 Diesel fuel is paid for directly by train operators. Consequently we would expect train operators' normal incentives towards efficiency should encourage improved energy efficiency.
- D.94 We also provide further incentives towards energy efficiency by publishing measures of energy efficiency and carbon emissions in our National Rail Trends. This allows us to monitor emissions, although we do not set specific targets.
- D.95 Furthermore, the industry is developing a carbon management framework as part of the initial industry plan. This should help the industry to reduce its environmental impact by setting out:
- a 30-year trajectory for greenhouse gas emissions from rail;
 - a set of interventions to improve carbon/energy efficiency during CP5 (for example driver training to improve energy efficiency);
 - a longer term set of aspirations that delivers the trajectory, some of which is outside industry's control (for example further electrification and de-carbonisation of grid electricity generation); and
 - a recommendation in terms of changes to the incentive and regulatory framework.

D.96 Other regulators have introduced environmental incentives such as discounts for the use of more environmentally efficient energy. We consider that it is important that the polluter pays principle should apply, in that less environmentally friendly forms of transport should pay a surcharge. Given that road transport does not cover its full marginal social costs, we are not minded to introduce environmental charges on rail as this could lead to a transfer of traffic to less environmentally forms of transport.

E. Financial framework

Introduction

- E.1 The purpose of this chapter is to:
- (a) provide an overview of the RAB as it forms a key part of the financial framework;
 - (b) review fundamental parts of the regulatory framework, for example the high-level approach to risk and uncertainty;
 - (c) discuss issues on which DfT/Transport Scotland want us to conclude early in order to inform the February 2012 advice to ministers and where an early conclusion also fits in with our approach, for example on inflation risk and the approach to amortisation;
 - (d) discuss issues that are useful to resolve early in PR13, for example the duration of CP5 and whether we should adopt a single or dual till approach; and
 - (e) provide an update on unsupported debt and network grant.
- E.2 Other financial framework issues that are either not appropriate to raise at this stage of the periodic review or are closely connected to industry reform, for example the approach to the allowed return, will be consulted on in parallel to the advice to ministers in February 2012. These issues include our approach to:
- (a) allowed return;
 - (b) financeability;
 - (c) corporation tax;
 - (d) the specification and treatment of costs that Network Rail incurs which are not at all, or only partially, controllable by the company (so called non-controllable costs); and
 - (e) the RAB roll forward policy.

Regulatory asset base

- E.3 Although we are not consulting on our approach to the regulatory asset base (RAB) as part of this consultation, given the importance of the RAB we felt some background information would be useful.
- E.4 There has been some recent debate about the role of the RAB in regulated industries such as airports, but, unless the industry reform process leads to a significantly different approach to Network Rail's corporate structure, we will continue to use the RAB as a central part of our price control methodology. This is especially the case given the role of government in financing Network Rail's revenue requirement. There have also been associated debates about using a split cost of capital, i.e. providing a different cost of capital for different parts of a regulated business. If appropriate, we will consider these issues in our advice to ministers.

Methodology

- E.5 The RAB is a key building block in our methodology for determining access charges since it forms the basis for calculating the level of the allowed return and is a key factor when we consider Network Rail's financeability.
- E.6 When regulated utilities were initially privatised the RAB represented the value of the shareholders' investment in the company. Amortisation of the RAB would return the initial investment to the shareholder and the shareholder earned a return on the investment that compensated them for providing the capital to the regulated business.
- E.7 Most economic regulators use a RAB as part of their price control methodology. In essence, the RAB provides the function of a store of value that allows a regulated utility to be compensated for its expenditure over time rather than in the year the capital expenditure is made. This helps charges for customers to be set fairly – in particular the balance between customers over time is fairer - as capital expenditure on assets is recovered over time. This compares to a pay-as-you-go methodology where customers and funders pay for the capital expenditure when it is incurred.
- E.8 Once the initial value of the RAB is established, generally the following adjustments take place to regulatory RABs:

- (a) capital expenditure is added to the RAB, so that the expenditure can be charged to customers over time;
- (b) amortisation is deducted from the RAB, so capital can be returned to the investor over time; and
- (c) inflation is added to the RAB to maintain its real value.

E.9 In addition for Network Rail, principally due to the significant increase in costs following the Hatfield accident and the transfer of responsibilities from Railtrack to Network Rail, the following adjustments were also made to the RAB:

- (a) overspends were added following the transfer of responsibilities from Railtrack to Network Rail;
- (b) revenue deferral – network grant due to be paid was deferred, which Network Rail compensated for by increasing its borrowing, and this resulted in a RAB increase;
- (c) non-delivery of outputs – this represented a deduction for Network Rail not delivering the outputs it had been funded to deliver;
- (d) incentives – the financial benefit that Network Rail earned as a result of outperforming some of its CP3 output assumptions was added to the RAB (the volume incentive and asset stewardship incentive);

since the start of CP4:

- (e) input price adjustment – the RAB is adjusted according to the value of the infrastructure output price index (IOPI) to hold Network Rail harmless from renewals input price movements; and
- (f) a deduction for renewals that are paid for on a pay-as-you-go basis, so do not need adding to the RAB.⁹

⁹ This is explained in more detail in Network Rail's regulatory accounting guidelines and in our PR08 determination.

History

E.10 Whilst the value of Network Rail's RAB (which has a value of around £39bn at 31 March 2011) has grown over time it is still below the depreciated replacement cost of Network Rail's network (estimated at around £75bn at 31 March 2011).

E.11 Table E.1 summarises the movements in the RAB since 1 April 2001 up to 31 March 2011.¹⁰

Table E.1: Movements in Network Rail's RAB since 1 April 2001

	£m (2010-11 prices)
Opening RAB at 1 April 2001	5,801
Inflation	6,097
Renewals expenditure (since 2004-05 – see note 1)	17,626
Enhancements expenditure	8,805
Non-delivery of outputs	-1,018
Ring-fenced fund	-961
Amortisation	-11,048
Overspending	6,384
Revenue deferral	5,772
Incentives rewards	1,099
Other	333
Closing RAB at 31 March 2011	38,890

Note:

1. In the period from 2001-02 to 2003-04, Network Rail's renewals expenditure was not routinely added to the RAB as it was funded on a pay-as-you-go basis. During those years Network Rail spent £7,352m on renewals (including overspend on renewals).

¹⁰ The value of the RAB at 31 March 2011 is currently provisional as the audit of Network Rail's regulatory accounts is not yet complete.

Risk and uncertainty

Principles

- E.12 All businesses face risk and uncertainty from the effect of exogenous events on their costs and revenues. Regulated businesses such as Network Rail are no exception. In developing the regulatory framework for PR13 we need to decide how these risks are allocated between the company, customers and funders.
- E.13 The way in which risk and uncertainty are treated affects a number of issues, including the:
- (a) incentives on Network Rail to behave efficiently and innovate;
 - (b) rate of return that the company requires to accommodate fluctuations in cash flow;
 - (c) balance sheet buffer, i.e. the difference between the regulatory asset base and net debt; and
 - (d) (if appropriate), the price at which Network Rail is able to raise risk capital as creditors will require a premium to accept greater risk.
- E.14 Our objectives in designing our approach to risk and uncertainty include the need to:
- (a) allocate risks to Network Rail where it is best placed to manage them and provide appropriate compensation and, where relevant, have regard to any cash flow implications;
 - (b) incentivise Network Rail to secure continuous improvements in cost efficiency and value for money;
 - (c) enable Network Rail to accommodate fluctuations in cash flow; and
 - (d) if appropriate, enable Network Rail to raise risk capital at an appropriate cost.
- E.15 In deciding how to allocate risk, the main principle to be used is that, as far as possible, risk should be borne by the party best able to manage it. Exposing Network Rail to risks it is unable to manage efficiently is unlikely to

provide value for money because it will increase the company's cost of capital.

- E.16 Network Rail faces relatively little revenue risk. Of the revenues Network Rail presently receives from track access charges, station charges and direct network grant, some 90% is fixed, i.e. is independent of cost and volume changes during the control period. The remainder is variable, e.g. varies with respect to the volume of traffic. All income from grants and charges is protected from general inflation by the indexation of access charges.
- E.17 The relative certainty of revenues and the way in which the variable charge is calculated mean that Network Rail's financial position is relatively unaffected by changes in either the number of:
- (a) vehicles running over the network; or
 - (b) passengers/volume of freight transported.
- E.18 The majority of exogenous risks faced by Network Rail are on the cost side. Much of the exogenous risk is, at least to some extent, controllable by the company, for example through good planning and procurement or the use of hedging or insurance. However, there is likely always to be an element of risk that is truly uncontrollable, such as inflation (before any protections provided by the regulatory regime).
- E.19 Network Rail also faces a variety of management risks and uncertainties, such as the risk that it makes poor investment decisions or fails to improve efficiency as rapidly as expected. However, these are endogenous to Network Rail, being a function of management effectiveness. We therefore think that it is appropriate for Network Rail to bear such risks.
- E.20 We currently set a hybrid price/revenue cap for Network Rail for a period of five years. The company's allowed price/revenue trajectory is largely fixed in advance for the control period based on a number of assumptions and expectations and in line with regulatory best practice, we include a number of mechanisms specifically aimed at sharing risks and uncertainties appropriately between the parties. In particular:
- (a) allowed revenues are indexed to a general level of inflation in the UK economy as measured by the all items retail price index (RPI);

- (b) a volume driver is included so that total access charges rise with the volume of traffic (i.e. through the variable charges);
- (c) the allowance provided for items of expenditure deemed to be non-controllable by Network Rail is not subject to an efficiency adjustment;
- (d) general re-opener provisions exist to enable an interim review to be triggered;
- (e) Network Rail is also provided with a rate of return that allows for a surplus over and above its expected financing costs to compensate it for the risks we have allocated to it and to enable it to accommodate and manage fluctuations in cash flow (a provision of some £200m per annum is assumed as a 'risk buffer'); and
- (f) ability to increase borrowings up to the limit of the balance sheet buffer (the net debt:/RAB limit).

Treatment of inflation and indexation

- E.21 For CP4 we continued to protect Network Rail from general inflation risk, by establishing the determination in real terms and indexing the access charges each year based on the November value of RPI. This means that each of the individual elements of revenue are first calculated in a real price base (e.g. 2006/07 prices) and then indexed to reflect actual inflation.
- E.22 This approach allows the company to pass general inflationary risk to customers and funders. Most regulators across the utility sector in the UK have adopted this approach because it leads to an efficient allocation of risk between companies and their customers¹¹ which reduces the company's cost of capital.
- E.23 We recognised that indexing Network Rail's revenues in this way leaves government with budgetary uncertainty with regard to the funding it provides each year (given that departmental budgets within a spending review period are established in nominal terms), but said government was better placed to manage this risk rather than Network Rail.

¹¹ Note that in the context of Network Rail, at the moment it is both customers and public sector funders who bear inflation risk.

- E.24 However, our decision on the indexation of access charges is taken as part of a package. For example, if Network Rail does not raise unsupported debt and is still issuing debt under the FIM then it may be appropriate for Network Rail to take some additional risk. For example, we could assume a level of inflation and fix that for the control period and include a specific re-opener for inflation risk over certain levels.
- E.25 An alternative approach to establishing the price control in real terms that would protect Network Rail from inflation risk, whilst also providing some certainty to Government as to its funding for Network Rail over the control period, would be to include an ex-ante inflation assumption in allowed revenue and then log up/down any differences between this assumption and actual inflation to be adjusted for at the start of CP6.
- E.26 We currently use RPI as the measure of general inflation that we use to index charges and the RAB. The use of RPI is consistent with regulatory precedent and the financial instruments that are available in the markets. However, there are other general inflation indexes that could be used instead of RPI, for example the consumer price index (CPI) which may or may not provide a more accurate index for measuring the inflation faced by Network Rail.
- E.27 Using any general inflation index to adjust Network Rail's allowed revenues would leave the company exposed to any difference (positive or negative) between changes in the general level of prices and changes in prices specific to its cost base (i.e. input prices).
- E.28 Input price inflation is a normal business risk. However, Network Rail has less ability to respond to changes in these costs through price changes than an unregulated company.
- E.29 Although Network Rail is able to manage the impact of input price inflation on its cost base and is best placed to do so, we recognise that there will always be some element of input price inflation that is effectively beyond the company's control. It may therefore be appropriate to consider options for risk sharing, including:
- (a) indexing revenues to a price index that is believed to reflect more accurately Network Rail's input mix;

- (b) retaining RPI indexation but making an explicit adjustment to revenues for expected deviations in input price inflation;
- (c) keeping RPI indexation and logging up/down the variation between RPI and input prices for consideration at the next periodic review, subject to an efficiency test;
- (d) keeping RPI indexation and providing some protection through a specific input price re-opener; and
- (e) keeping RPI indexation and providing protection for input price inflation via a general re-opener, for example the present 15% re-opener for Scotland.

E.30 In PR08 we included Network Rail's estimates of input price inflation in our efficiency assumptions. We also recognised that at the time there was considerable volatility in input prices so we also allowed for the indexation of renewals input prices.

E.31 For PR13 we will consider if the PR08 approach is still appropriate and how input price movements should be reflected in the calculation of Network Rail's efficiency.

Re-openers

E.32 The revenue that we allow Network Rail in CP5 should be sufficient for it to deliver the required outputs on the basis it operates economically and efficiently, taking into account normal fluctuations in costs and revenues.

E.33 However, providing Network Rail with a surplus within allowed revenues that is sufficient to compensate it for all possible risk is unlikely to represent value for money. Consequently, in PR08 we thought it was appropriate to provide a mechanism that compensates Network Rail for exogenous events that result in exceptional changes (either up or down) in costs faced. These mechanisms to trigger an interim review are called re-openers.

E.34 Such changes in costs are most likely to result from:

- (a) significant external events which could not reasonably have been foreseen;

- (b) changes in law (which might qualify for an automatic pass through of costs to customers/funders); or
- (c) changes in the regulatory environment.

E.35 For PR08 we used the following re-openers:

- (a) if there is a material change in circumstances;
- (b) if Network Rail's AICR (adjusted interest cover ratio) is forecast to be below the value of 1.4 on average over a forward looking period of three years;
- (c) if Network Rail is forecasting that within the next 18 months it cannot finance itself efficiently; and
- (d) for Scotland, if Network Rail's expenditure is forecast to be more than 15% higher than our determination over a forward looking period of three years.

E.36 Also, in PR08 the automatic volume driver provided by the variable charge and the logging up mechanism for investment also meant that the company was largely protected from unanticipated shifts in demand.

E.37 When deciding on our approach to re-openers in PR13, we need to consider all the other aspects of the determination as they all impact risk and the potentially changed circumstances in PR13, i.e. potentially disaggregated price controls and the effects of industry reform.

E.38 The main issues we need to consider are:

- (a) should we retain re-openers and what should the re-openers be?;
- (b) do we need to retain the material change in circumstances re-opener?;
- (c) will we need a specific re-opener for changes that could arise from the industry structural reform review?;
- (d) do we need a re-opener based on the AICR or can we just rely on the material change in circumstances re-opener?;

- (e) do we need a separate re-opener based on Network Rail's ability to finance itself efficiently?;
- (f) how do we calibrate the re-opener provisions with other related regulatory policies, e.g. the licence condition on the level of financial indebtedness?; and
- (g) do we need a separate re-opener for each disaggregated price control?

Duration of the control period

- E.39 The duration of the control period is of critical importance, both to Network Rail itself, its customers and its funders. Therefore, when deciding on the length of the control period, we must balance the need to provide appropriate incentives on the company to operate and invest efficiently with the increased uncertainty involved in forecasting output requirements and costs further into the future.
- E.40 The current control period is five years mainly because it is an appropriate period of time that is short enough to reflect the difficulties in forecasting costs and revenues over long time horizons, which should give Network Rail an appropriate amount of time to plan and deliver its outputs. It should also provide effective incentives and not expose Network Rail to financial risk for a prolonged period and provide sufficient certainty for suppliers, customers and funders.
- E.41 Most other UK regulators also use five years as the time period for the length of the control period for similar reasons as we do. Although Ofgem has decided to move to a longer control period of eight years to better align the regulatory reviews with the longer term industry investment requirements (albeit with a mid-period review of outputs at four years).
- E.42 One argument for a longer control period, e.g. eight or ten years, is that it would better align with long term industry planning and capital investment, and provide greater certainty to Network Rail's suppliers, potentially reducing the possibility of peaks and troughs in work, that could otherwise lead to inefficient procurement. However, our investment framework already provides a mechanism for investments between control periods.

- E.43 In addition, while Network Rail is improving its knowledge of costs and cost drivers, we would still have concerns as to whether this knowledge is sufficiently robust to warrant a longer control period.
- E.44 Also, given our view that Network Rail has generally focused more on hitting targets than striving for outperformance it suggests that a longer control period may not be best suited to Network Rail at the current time. It would also expose the company to greater financial risk and make it more difficult for the government to set the HLOSs (in relation to governments' typically three or four year spending review periods). Network Rail has also not reached the stage where it is pushing the efficiency frontier, so there is less justification for extending the length of the control period compared to, say, what Ofgem has proposed for energy regulation.
- E.45 A shorter control period might be appropriate if there was considerable uncertainty around the key components of Network Rail's revenue requirement. Also shortening the length of the control period would allow us to place greater emphasis on Network Rail achieving specific short-term outputs, would align better with Network Rail's planning of renewals workbanks and make it easier for the governments to establish their HLOSs through closer alignment of the regulatory review to the government spending review. However, the greater frequency of periodic reviews could increase the regulatory risk and the level of uncertainty the industry faces and become obstructive to the longer term planning and incentives that the industry requires.
- E.46 Another reason for having a shorter control period would be that it may make it easier to implement change in the industry following the review of industry structure currently taking place.
- E.47 We recognise, however, that the long lead time for some types of investment means that the periodic review process may disrupt planning to the extent that there is uncertainty about the level of funding in the run up to the final determination. This has the potential to reduce the efficiency of investment. We could address this issue later in the review by possibly providing early conclusions for some types of expenditure, once we have a clearer idea of the capital investment that will be included in CP5 (as we did in PR08 under the 'early-start' policy).

- E.48 In addition, we are also considering how our regulatory framework can deal with the different lengths of Network Rail's price control and the length of franchises, particularly for cost and revenue sharing purposes.
- E.49 If we did decide to lengthen the duration of Network Rail's price control the most likely alternative would probably be a duration of 7-10 years. A duration of 6 years would have little impact but the longer the duration of the price control is extended for, the bigger an issue the uncertainty of cost reporting would be. If we decided to shorten the duration of Network Rail's price control, the most likely alternative would probably be a duration of 3 years, as moving to a duration of 4 years would have little impact and anything less than 3 years is unlikely to provide appropriate incentives.
- E.50 There is no objectively 'right' answer to the duration of the control period and the key issue is how we address the underlying issues such as supplier uncertainty. We are therefore seeking views on what consultees think the duration of Network Rail's control period should be and how the specific issues raised by the choice of duration can be mitigated.

Dual till versus single till

- E.51 Regulated utilities tend to be complex organisations, and may operate in a variety of different markets with different regulatory requirements. Where this is the case, a 'dual till' approach may be adopted so that the price control for each market the business operates in is set as if for a separate company.
- E.52 Under the single till approach that we currently use, income that Network Rail is likely to earn on activities such as commercial property income is netted off against network costs in our price control settlement. This allows us to arrive at an estimate of the income that Network Rail requires from access charges (and network grant in lieu of access charges) if it is to earn a normal level of return. As part of PR08 we reviewed whether or not the current single till model provides the most appropriate incentives on the company and whether, for instance, fully separate price controls should be established for different elements of Network Rail's activities.
- E.53 In PR08 we decided that there was no strong case for establishing separate 'railway' and 'commercial' tills given our statutory duties and this remains our view. There is a risk that such a dual till approach would increase Network Rail's short-term revenue requirement and hence increase the cost to

funders, without material benefit to the industry. The key issue for us to consider is that our focus should be on maximising the benefit that flows to the railway as a result of Network Rail's commercial activities. Moreover, we note that train operators are starting to take over responsibility for stations from Network Rail which removes the key driver for this change.

Amortisation

- E.54 Our current policy is that amortisation should be set equal to the long-run annual average capital expenditure required to maintain the network in steady state. (We may then make an adjustment to the amortisation allowance to ensure Network Rail is able to finance itself.) This 'steady state' approach means that the total allowance for amortisation in any year should be broadly equivalent to the level of investment expenditure that is required in order to maintain the overall capability, age, condition, and serviceability of the network in steady state before taking account of financial sustainability issues (i.e. the network would be neither getting better or worse if that level of capital expenditure is sustained over the long-run).
- E.55 This would ensure that access charges and network grants over time reflected appropriately the level of assets consumed by current and future users and funders of the railway.
- E.56 The other factor to be considered when deciding on the amortisation rules is the approach to the amortisation of additions to the RAB that are not related to capital expenditure, e.g. those that relate to incentive adjustments or re-profiled revenues. Following PR08, these are currently amortised over 30 years.
- E.57 We also need to consider what we mean by the capital expenditure that can be added to the RAB. The main issue is that Network Rail in the past used to account for certain reactive maintenance costs as capital expenditure. The calculation of the revenue requirement in PR08 reflected this treatment. Since 2002-03, Network Rail has accounted for these costs in its statutory accounts as an operating cost. One of the issues we will need to consider is whether in order to improve transparency should we remunerate these reactive maintenance costs in the year concerned (i.e. for the purpose of calculating the revenue requirement, treat them in the same way as operating and other maintenance costs).

- E.58 If we did change our policy to remunerate these reactive maintenance costs in the year concerned then everything else being equal, the increase in maintenance costs (and hence the revenue requirement) would largely be offset by a reduction in amortisation (and hence the revenue requirement), as we would expect the long-run steady state renewals to be lower by an equivalent amount. This means that a change in this policy should not have a material impact on the revenue requirement in CP4 as the main financial effect of the change could be that the maintenance allowance will be based on the efficiency level we expect Network Rail to achieve in CP5 whereas the amortisation allowance will be based on Network Rail's long-run efficiency level. Although the differences between the efficiency assumptions would make a difference.
- E.59 One issue with using an approach to amortise the RAB based on long-run average renewals is that the value of the RAB is not based on a comparable methodology. We will consider the role of the RAB in our advice to ministers.
- E.60 We will set out in our advice to ministers what our approach to amortisation will be and in our detailed consultation on the financial framework (in February 2012) we will discuss relevant technical issues about how we calculate the amortisation assumption, e.g. how we estimate long-run renewals, how we apply efficiency and how we take account of financeability.

Network grant

- E.61 Network Rail's income currently comes from a number of sources: access charges from passenger and freight train operating companies, other income (e.g. from property) and network grants paid by the governments to Network Rail. One of our tasks in PR13 is to determine the balance of Network Rail's income between access charges and network grants. For CP4 the network grant represents 63% of Network Rail's gross revenue requirement in England & Wales and 56% in Scotland.
- E.62 At the moment the majority of public financial support is paid directly to Network Rail. The payment of network grant to Network Rail, particularly at the current high levels raises two main concerns:

- (a) it fuels the perception that Network Rail is an inherently publicly funded and unprofitable business that requires subsidy, whereas the TOCs are more profitable;¹² and
- (b) it gives the impression that Network Rail's principal accountability is to government rather than train operating companies (although we recognise that the high level output specifications (HLOSs) give a clear role for the governments in respect of their relationship to Network Rail, and hence provide a justification for direct network grant payments).

E.63 In principle, the preferred method of funding Network Rail is for all of its income to come from train operating companies and other customers as this would solve the problems identified above.

E.64 The main issue for the governments is that the accounting rules that governments throughout the European Union must adhere to, do not allow grants to the private sector to be accounted for as capital formation even though the grant is ultimately paying for capital formation,¹³ unless they are paid directly to the private sector entity undertaking the capital formation. Therefore, the governments in PR08 preferred that the network grant was routed through Network Rail.

E.65 We will continue to discuss these issues with the governments and will discuss the issue further in our advice to ministers.

Unsupported debt

E.66 As we discuss in the incentives chapter, incentives are a key component of the regulatory framework for Network Rail as it is important that Network Rail has strong incentives to improve performance and efficiency.

E.67 Network Rail's current financial structure materially weakens the role of financial incentives facing Network Rail at the corporate level. As part of

¹² If there were no direct grants (i.e. TOCs were liable for the full fixed track access charges) at present all TOCs would be receiving government subsidy (there would be no premium paying TOCs).

¹³ The train operator then pays Network Rail for this work through access charges.

PR08, we therefore introduced changes to Network Rail's financial framework that would improve those financial incentives.

- E.68 A key part of those changes was our assumption that Network Rail would be able to raise unsupported debt during CP4. In relation to this, the ability to use the financial indemnity mechanism (FIM) would be restricted and we would also remove the financial indebtedness licence condition. However, due to conditions in the financial markets and rating agency concerns about deliverability of the PR08 determination, Network Rail has not yet raised unsupported debt.
- E.69 We are still supportive of Network Rail's plans to issue unsupported debt when the conditions are appropriate. However, our approach to improving Network Rail's corporate incentives took place at a time where there were limited options available to us. The industry reform discussions potentially open up new options.
- E.70 The options include:
- (a) transfer of the responsibility for managing stations to train operators;
 - (b) Network Rail letting one or more concessions for the management of infrastructure at a route/regional level;
 - (c) establishing a network wide 'system operator' role to retain system wide responsibilities, such as operations (signalling/train control) and longer term network wide planning;
 - (d) independent ownership of some route level infrastructure companies; and
 - (e) more joint working between train operators and Network Rail.
- E.71 Our work is also considering how the introduction of debt or equity could facilitate the improvement of rail industry performance and efficiency. This could be achieved by either:
- (a) issuing just unsupported debt (i.e. the PR08 approach);
 - (b) issuing unsupported debt as a first step on the way to the introduction of equity; and

- (c) move directly to an unsupported debt and equity financed model (i.e. a conventional regulatory model).
- E.72 To help inform this work we commissioned the Royal Bank of Canada (RBC) to consider some of the issues involved with risk capital in the context of the industry structure work.
- E.73 RBC's main conclusions in relation to the introduction of unsupported debt were that they:
- (a) did not see any major reason why Network Rail should not be able to successfully implement an unsupported debt programme; and
 - (b) thought that it should be feasible to design an unsupported debt programme, so that it is compatible with the longer term proposals that could be developed by the industry structure working group.
- E.74 The vfm review has identified that risk capital can play an important role in improving the incentives that Network Rail faces but states that it is more important that the structural reforms are resolved first.

F. Structure of charges

Introduction

- F.1 As part of the periodic review we determine access charges, which operators are required to pay to Network Rail to access the infrastructure. The charges are then published prior to the start of the control period, and the schedule of charges and price list applies for the entire control period¹⁴.
- F.2 As well as being an important component of Network Rail's revenue, charges can provide one of the principle mechanisms for aligning incentives of passenger and freight operators and of Network Rail, in particular with respect to whole industry costs and capacity allocation.
- F.3 We have responsibility for setting charging objectives and guidance to Network Rail. As we did for PR08, we are giving Network Rail the responsibility for developing its charge proposals in line with our charging objectives and guidance. We are retaining responsibility for developing new charge proposals, and we will also audit and approve final charges.
- F.4 This annex discusses aspects of the structure of charges that we are consulting on for PR13. Changes that we are considering are:
- (a) geographic disaggregation of the variable usage charge;
 - (b) improving incentives associated with charging for electricity for traction;
 - (c) strengthening the incentives relating to use of capacity; and
 - (d) open access passenger operators contributing to meeting infrastructure fixed costs.
- F.5 In reviewing the structure of charges and, in due course, implementing any significant changes to the structure we will have regard to how this fits with the overall package of changes established by PR13. We will also ensure

¹⁴ The price lists can be accessed via the CP4 Charges page of Network Rail's website, www.networkrail.co.uk. Supplementary prices may be added to individual operators' contracts, for example to reflect charges for new rolling stock

that we examine the possible impacts of any changes to the structure of charges, ensure that the structure remains as simple as possible and, if necessary, phase in changes to allow time for the industry to plan and prepare.

F.6 The rest of this annex is structured as follows:

- (a) charging purpose and objectives;
- (b) types of charges;
- (c) changes introduced in PR08;
- (d) developments since PR08;
- (e) issues to consider in PR13:
 - (i) franchise financial adjustment mechanism;
 - (ii) variable usage charge;
 - (iii) traction electricity charges;
 - (iv) charges for managing scarce capacity;
 - (v) charges for open access passenger operators;
 - (vi) station charges;
 - (vii) fixed track access charges;
 - (viii) other charges; and
 - (ix) allowing businesses to plan with a reasonable degree of assurance.

Charging purpose and objectives

F.7 Charges have the potential to serve various purposes. They provide:

- (a) a mechanism for Network Rail to recover the efficient costs it incurs in providing track and station infrastructure used by train operators;

- (b) a means to allocate costs to, and be recovered from, those that cause those costs to be incurred; and
- (c) signals to train operators, their suppliers and funders for the efficient use and development of vehicles and the infrastructure (subject to other policy objectives and constraints).

F.8 Our current charging objectives are to:

- (a) promote the objectives of our duties under section 4 of the Railways Act 1993 and be consistent with the wider objectives of funders;
- (b) incentivise Network Rail, train operators, train manufacturers, rolling stock companies (RoSCOs) and funders to ensure the efficient utilisation and development of the network and the optimisation of whole industry costs;
- (c) not discriminate between users of the network;
- (d) be practical, cost effective, comprehensible and objective in operation;
- (e) be consistent with relevant legislation, including the EU Directive 2001/14/EC;
- (f) reflect the efficient costs caused by use of the infrastructure (both to Network Rail or otherwise); and
- (g) ensure that charges enable Network Rail to recover but not to over recover, its allowed revenue requirement.

Types of charges

F.9 The current structure of track access charges reflects the short run marginal costs of using the network, which incentivises train operators to make the maximum use of it. It also reflects the costs caused by each individual vehicle operating on the network (on a network wide average basis).

F.10 Table F.1 lists the total track and station access charges and network grant income Network Rail has received in 2009-10.¹⁵

¹⁵ Network Rail receives income from other sources, such as property, that are not listed here.

Table F.1: Access charges income in 2009-10

Charge	Purpose of charge	Actual income in 2009-10 (£ million)
Variable usage charge Of which:	Recovers maintenance and renewal costs that vary with traffic	137
- <i>passenger</i>		87
- <i>freight</i>		46
- <i>open access</i>		4
Traction electricity charge (passenger and freight)	Recovers the costs of providing electricity for traction purposes	227
Capacity charge (passenger and freight)	Reflects the incremental schedule 8 costs incurred by Network Rail as a result of incremental changes in traffic on the network	156
Fixed track access charge (franchised passenger only)	Determined on basis of Network Rail's total revenue requirement	782
Other (electrification asset usage charge; coal spillage charge; freight only line charge)	Recovers associated costs	10
Station long term charge	Recovers station maintenance, repair and renewal	160
Network grant	Paid direct by government in lieu of fixed charges	3,730
Total		5,202

Changes introduced in PR08

F.11 Changes we introduced in PR08 included:

- (a) introduction of freight only lines charges, levied on freight traffic transporting electricity supply industry coal and spent nuclear fuel;
- (b) a separate charge levied on all coal traffic for establishment of an 'industry investment fund' for investment in equipment to reduce coal spillage;
- (c) recalibration of modelled rates of consumption of electricity for traction (EC4T) including refining the basis on which charges for regenerative braking were levied;
- (d) enabling operators to opt to be charged for EC4T on the basis of metered consumption, rather than modelled rates; and
- (e) station long term charges that were set per train operator for its entire portfolio of stations for which it is a stations facility owner, rather than on a network-wide basis.

Developments since PR08

F.12 In early 2010, we commissioned Cambridge Economic Policy Associates (CEPA) to undertake a high-level review of possible options for future track access charges – based on options that would lead to better use and development of the network.¹⁶ The report identified and focused on six short-listed options:

- (a) **a regional 'long run incremental cost' (LRIC) approach**, where the variable usage charges would reflect the forward looking costs of providing capacity, including the costs of enhancements, and would be disaggregated across the network.
- (b) **an 'average cost' approach**, where charges are simplified. In this case, variable usage charges would translate to an average charge which would be equivalent for all users across the network;

¹⁶ http://www.rail-reg.gov.uk/upload/pdf/charges_review_cepa_report_june2010.pdf

- (c) **a regional 'short run incremental cost' (SRIC) approach**, this would be similar to the current approach, however it could mean disaggregating variable usage charges on a regional basis to reflect the differentiated costs across regions;
- (d) **scarcity charge**, where charges reflect the opportunity cost associated with the use of a path, which prevents another operator from using that path. Such an approach would typically mean higher charges for use of more capacity constrained areas of the network;
- (e) **a track occupancy charge**, where the focus is on charging for network capacity as opposed to track damage. For example, it could be charged per minute rather than per vehicle or train km. Such an approach would result (all other things being equal) in higher charges for those services which consume capacity on the network for long periods of time; and
- (f) **revenue sharing**, where Network Rail shares fares revenue. This could incentivise Network Rail to target investment towards projects that would result in higher operator revenue, could result in a better allocation of fare revenue risk and would foster collaborative working; it could also permit open access operators to make a contribution to fixed infrastructure costs.

F.13 CEPA recommended that all the above, except the average cost and track occupancy approaches, had the potential to improve the structure of charges and better achieve our aim of enhanced use and development of the network compared to the existing structure of charges.

F.14 We held an industry workshop in April 2010, where CEPA presented its report to the stakeholders, and we subsequently consulted on the report and the existing structure of charges. Responses to this consultation are discussed in the appendix to Annex F.

F.15 Although we have previously consulted on some of these issues, we think that it is important to investigate further an option for geographic disaggregation of the variable usage charge in the light of subsequent developments. In particular, recommendations from the Value for Money study relating to devolution, including incentivising operators to act to reduce Network Rail's costs, are relevant to this option.

- F.16 We agree with the consultees who argued that, as many of the franchises are currently highly specified, the influence of charges on service patterns has inevitably been constrained. As the Department for Transport has now stated its plans to simplify train service specification for future franchises, this constraint is likely to weaken over the coming years. In this context in particular, we consider it important to investigate further charging options, such as a scarcity charge, that reflect the economic value of capacity. Such charges have the potential to complement administrative mechanisms and reduce the need for service specification in the franchise.
- F.17 In carrying out this further work we will take into account the strong views expressed by many consultees about ensuring the benefits of introducing changes and possibly more complexity outweigh the benefits.
- F.18 We are also:
- (a) working closely with the industry to allow operators to opt in for on-train metering;
 - (b) liaising with Network Rail, operators and the wider industry to facilitate the agreement of discounted charges for vehicles that have been modified to reduce infrastructure wear and tear;¹⁷ and
 - (c) engaging on the recast of the first railway package. The recast is likely to contain a number of policies relating to track access charging.

Issues to consider in PR13

- F.19 The remainder of this chapter discusses the issues we will consider in PR13.

Variable usage charge

- F.20 The variable usage charge is designed to recover Network Rail's operating, maintenance and renewals costs that vary with traffic; in economic terms this reflects the short run incremental cost. This means that the charge does not reflect the costs of providing or changing the capability or capacity of the network.

¹⁷ See consultation: <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10375>

- F.21 The variable usage charge is currently highly disaggregated by vehicle class and, in the case of freight, commodity type. This differentiation reflects the significant variation in infrastructure wear and tear costs associated with different vehicle classes. The disaggregation provides economic signals to freight operators, train operators and their funders, and rolling stock manufacturers, so that decisions regarding vehicle specification and deployment can be made broadly on the basis of minimising whole-industry costs. Since PR08, the industry has worked together to develop cost-reflective charges for modified vehicles, so that operators can benefit from adapting their vehicles to be more track-friendly.
- F.22 We consider that the high level of disaggregation by vehicle provides important signals to manufacturers, operators and funders. Any proposals to simplify the charges, thereby reducing the number of charging categories, may have some advantages but should seek to avoid blunting such incentives.
- F.23 At the same time, the variable usage charge is based on national average usage costs, and leads to the charge for a certain class of vehicle being the same regardless of whether, for example, it runs on the West Coast Main Line, a branch line in Scotland or a freight only line.
- F.24 CEPA examined the option of disaggregating the variable usage charge by region in its 2010 report. In our subsequent consultation, certain freight operators and ATOC expressed opposition to such a disaggregation, whereas others supported it.
- F.25 Variable usage charges that vary according to track characteristics may be merited if there are material differences in the variable usage costs associated with parts of the network with different capacities and capabilities. It is well understood, both anecdotally and empirically, that different vehicles are suited to different track characteristics. For example, a vehicle with a high level of unsprung mass may be appropriate for low speeds on a branch line but – running at a higher line speed – would do significant damage to a primary route; whereas other vehicles may be appropriate for relatively straight high speed primary routes, but the suspension yaw stiffness is such that they would cause disproportionate damage on more curved routes.

- F.26 Applying differential charges to such vehicles would provide direct financial incentives to operators to deploy rolling stock that complemented the routes on which it is used. There are a number of practical and technical considerations, however. Vehicle and route choice is subject to a number of constraints so that the incentives may not always work effectively (and, for various reasons, vehicles may already be well suited to the routes on which they are deployed). The costs associated with the increased complexity of the charge need to be taken into account.
- F.27 When assessing the extent to which geographic disaggregation is appropriate, it is important to consider track access charges in the round. For example, usage costs are thought to be relatively low for primary routes, but scarcity costs are relatively high, so that refinement of charges for the former may not be appropriate without charges for the latter. We also note that such a charge would interact with any mechanism to share Network Rail efficiencies with operators.

Traction electricity charges

- F.28 Electricity for traction has historically been treated as an uncontrollable cost that Network Rail can pass on in full to train operators. Train operators have been charged on the basis of modelled rates, with a year-end reconciliation within each electricity supply traction area (ESTA). This regime has provided little or no incentive for Network Rail or operators to manage electricity effectively, resulting in higher environmental impacts and whole industry costs. Since April 2010, operators have, as an alternative, been able to opt in to on-train metering (OTM), greatly strengthening their incentives.
- F.29 The incentive effects under the current regime are:
- (a) operators have strong incentives to reduce electricity consumption for those vehicles that are metered;
 - (b) in several of the ESTAs, more than 90% of electricity is consumed by a single operator. Such operators have strong incentives to reduce their electricity consumption, even if it is un-metered, because they will benefit through reductions in the year-end 'wash-up';

- (c) un-metered operators in ESTAs where they consume a relatively small proportion of the electricity, have little or no incentive to reduce their electricity consumption; and
 - (d) Network Rail has no financial incentive to reduce electricity losses.
- F.30 Operators can influence electricity consumption over and above that dictated by the timetable, for example through changing driver techniques. Network Rail can influence the extent of electricity transmission losses, for example through keeping ballast clear from the third rail or through its investment decisions.
- F.31 Since PR08, the industry, led by Network Rail, has undertaken extensive work to enable on-train metering within the framework set out by us in our final determination. For PR13 there is a major opportunity to build on this work and the knowledge gained to strengthen both operators' and Network Rail's incentives to reduce electricity consumption, where there is an economic case to do so.
- F.32 Our proposed framework for achieving this is as follows:
- (a) charge metered vehicles on the basis of metered consumption plus a mark-up to reflect system losses attributed to that vehicle;
 - (b) calibrate modelled rates on the basis of metered trials, where it is possible to do so;
 - (c) strengthen incentives for operators to meter through applying an uplift to modelled rates (levied on unmetered operators);¹⁸
 - (d) allocate volume risk (the volume wash-up) in each ESTA between unmetered services and Network Rail, so that the allocation reflects their respective ability to manage the risk (taking account of Network Rail's and operators' relative ability to manage transmission losses); and
 - (e) allow Network Rail to recover costs – calculated using ex-ante assumptions – for an efficient level of system losses.

¹⁸ This uplift would reflect internal and external cost differences such as the lower expected efficiency associated with vehicles that are unmetered.

- F.33 Certain operators have argued that a more effective approach may be to meter a sample of vehicles, and extrapolate the metered consumption to determine charges across the fleet for each billing period. Under this approach, all fleet consumption would be treated as metered and hence exempt from the volume wash-up. It would deliver more accurate billing while reduce the costs of metering. They also argue that it gives operators incentives to manage electricity more efficiently.

Charges for managing scarce capacity

- F.34 The existing structure of charges is based on the principles of 'engineering' cost causation rather than 'economic' value. This means that train operators may not pay the true economic cost of use of the network (particularly in congested parts). And Network Rail faces weak signals about the value of developing the network and accommodating additional demand (whether through capex or opex interventions) – although there are other processes which determine – for example – decisions on enhancement projects.
- F.35 The capacity charge is an exception to the above. This charge reflects Network Rail's incremental schedule 8 (performance regime) costs of additional traffic on the network. These costs arise because as the network becomes more crowded it becomes more difficult for Network Rail to recover from incidents of lateness. These costs differ across the network and at different times as the capacity utilisation and the proximity of train services differ.
- F.36 The capacity charge, if applied at an appropriate degree of disaggregation and assuming other cost-based charges work effectively, means that Network Rail is not financially penalised for allowing additional traffic on the network. It also gives operators price signals regarding the congestion they are causing other vehicles. To date, however, the capacity charge has been applied in a relatively aggregate manner, thus blunting these incentives.
- F.37 In PR08 we consulted on, but ultimately did not implement, the scarcity charge and the reservation charge. Both charges are directed at promoting better management of capacity. Then in 2010 CEPA, as described above, investigated the scarcity charge further, as well as a charge based on a 'long run incremental cost' (LRIC) approach, where the variable usage charges would reflect the forward looking costs of providing capacity, including the costs of enhancements. Both of these options would typically mean higher

charges for use of more capacity constrained areas of the network. They share the following properties:

- (a) they contribute to an efficient allocation of capacity on the network, where there is a potential trade-off between different operators (acknowledging that the timetabling process and other administrative mechanisms already seek to achieve this, for example by minimising freight operators' use of certain routes at peak commuting times); and
- (b) they provide Network Rail with signals about the value of developing the network and accommodating additional demand (balanced against performance incentives), for example through it identifying refinements to the timetable.

F.38 The responses to our 2010 consultation on high level options for charges showed that operators tend to be wary of complexity and unnecessary changes, but that there was some support among TOCs for higher variable charges offset by lower fixed charges.

F.39 In PR08 we consulted on the introduction of a reservation charge. The charge would be reimbursed if a path were used, and therefore would mainly be of relevance to freight services. As well as potentially improving capacity allocation, it would free up access to certain freight customers' sites, thus facilitating competition for these customers. Following our work and consultation with the industry we said that we would not introduce a reservation charge in CP4, but that we would review the potential for these charges again for CP5.

F.40 The rationale for a reservation charge is complementary to, and potentially a substitute for, certain provisions in Part J of the Network Code (changes to access rights). We are currently conducting a review of Part J,¹⁹ and will consider whether to proceed with the development of possible arrangements for a reservation charge, in part on the basis of our conclusions of the Part J review.

¹⁹ See <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10282>. The consultation closed on 16 March 2011.

Charges for open access passenger operators

- F.41 Competition between passenger train operators can provide benefits through reduced fares and improved services and the opening of new rail markets.²⁰ However competition can also lead to revenue abstraction from incumbents and through the effect on franchised operations can impact on the taxpayer. These considerations reflect certain statutory duties which, together with our other statutory duties, we must balance when exercising our functions. Hence we have a long standing policy of not approving rights to new competing services, including open access services, which are primarily abstractive of incumbents' revenue without compensating economic benefits. We apply our "not primarily abstractive" test (NPA) to implement this policy.
- F.42 We developed the NPA test to be complementary to the structure of track access charges. Currently, franchise passenger operators pay the fixed charge but open access passenger operators do not. All operators pay variable charges, which in turn reflects the variable cost to Network Rail associated with traffic. Hence, revenue abstracted from a franchise by an open access operator might be expected to reduce the value of the franchise without any compensatory revenue received from the open access operator.
- F.43 A consequence of the current charging regime is that, in order to satisfy the NPA test, open access services can be prevented from serving stations with the potential for high levels of demand (which in turn may mean that they have a limited ability to bear a mark-up on the variable charge if one were to be applied). If charges were reformed, such that payments for open access services were able, at least to some extent, to off-set the associated reduction in the value of affected franchises, this would address this issue.
- F.44 We are therefore considering reform to the basis by which open access passenger operators pay for track access, and have commissioned MVA Consultancy and the Institute for Transport Studies to explore how greater on-rail competition may work in practice. This work, which is ongoing, consists of modelling the demand, revenue and economic impacts of open

²⁰ This has been demonstrated on a number of occasions, for example on-rail competition analysis: key findings, Ove Arup and partners, December 2009. This document can be accessed at: http://www.rail-reg.gov.uk/upload/pdf/access-policy-review-open-access-report_jan10.pdf.

access passenger services under various scenarios. As part of this, the study is investigating the impact of the following charging options:

- (a) **status quo**;
- (b) **average cost pricing**: total fixed charges allocated proportionately between passenger operators depending on the number of paths operated;
- (c) **peak surcharge**: as above, but with a greater charge for operating peak paths;
- (d) **“auction” value**: charge set at the amount by which open access operator values the path; and
- (e) **opportunity cost to the franchise**: this value is determined by assessing the impact on the cost to Government of the franchise giving up the path(s). This lost value in the franchise becomes the amount payable by the open access operator.

F.45 A form of average cost pricing would mean that open access operators would only be willing to operate services on the more profitable paths, whereas an “auction” value path would mean that they would be indifferent as to the path they operated, provided that it had a business case under the status quo charging regime. These charging options may significantly reduce the cost to government and so could allow us to remove or reform the NPA test.

F.46 We intend to publish the MVA/ITS consultancy study in July.

Station charges

F.47 Network Rail is currently responsible for the maintenance, repair and renewal of all its stations. However, it is the Station Facility Owner (SFO) for only a small number of its larger stations (known as the managed stations). The SFO is responsible for the day to day management and operation of the station. For the vast majority of stations, the SFO is a franchised train operator. A station long term charge (covering Network Rail's maintenance, repair and renewal costs) and a qualifying expenditure (Qx) charge (covering the costs of the SFO) is levied on each station.

- F.48 For CP4, we determined the total long term charges for each train operator's portfolio of stations to reflect the efficient cost of maintenance, repair, and renewals at its stations. Charges for individual stations within the portfolio were calculated using modelled information relating to characteristics (such as number of platforms and asset condition) at each station. A similar approach was used for the Network Rail managed stations. However the costs in this instance were assessed over a longer time horizon.
- F.49 DfT has set out that the new Greater Anglia franchise will have full repair responsibilities for its stations²¹, and will not pay the long term charge to Network Rail. This change in responsibilities may also apply for other new franchises, and is something that we will take into account in the periodic review.
- F.50 Qx charges cover the cost of the SFO's day-to-day running and operation of its stations. It also covers the reasonable costs incurred by the SFO for procuring or providing the services and amenities, which all users share²². We modified the Independent Station Access Conditions (ISACs) so that Qx at Network Rail's managed stations was fixed for the whole of CP4.
- F.51 At present we do not specifically approve the Qx charge for Network Rail managed stations (and do not regulate Qx for other stations). However, we do approve the management fee that Network Rail charges the train operators that access its managed stations. The management fee recovers the overhead costs that Network Rail incurs in administering the Qx charge and for the first time in CP4 we approved the management fee for 5 years.
- F.52 In PR13, we will be reviewing and setting the long term charges for stations and at the same time we expect that a revised Qx management fee for the managed stations for CP5 will be submitted to us for our approval under the Station Access Conditions.

²¹ Greater Anglia Franchise Invitation to Tender, 21 April 2011, www.dft.gov.uk.

²² In addition, the station facility owner may incur costs for the provision of exclusive services for a particular train operator, which are charged to the train operator in question.

Fixed track access charges

- F.53 Fixed track access charges are allocated to franchise operators using a series of allocation metrics, so that costs are allocated to those that use the railway and where the costs are incurred.
- F.54 The total fixed track access charges were calculated separately for Scotland and for England / Wales. The total for Scotland was allocated to the ScotRail franchise. The totals for England / Wales were allocated to the other franchises.
- F.55 Where possible, costs and revenues for England / Wales were allocated first to around 300 strategic route sections (SRS), though some costs, such as controllable overheads, were not allocated to geographic areas. The costs were then mapped to individual franchise TOCs on the basis of allocation metrics, for example certain signalling for each SRS were allocated to TOCs on the basis of train km within the SRS, whereas net costs associated with electrification assets in each SRS were allocated on the basis of electric vehicle km.
- F.56 The methodology for allocating fixed track access charges will need to be reviewed and refined for PR13 in the light of developments in industry reform, notably with respect to accounting separation and charging for open access passenger operators.

Freight specific charges

- F.57 Freight operators pay variable usage charges and electricity charges on a consistent basis to passenger operators.
- F.58 In addition, there are freight-specific charges:
- (a) the freight only line charge is a mark-up on the variable charge that contributes to the fixed costs of freight only lines. It is set at a rate that we determined operators were able to pay (zero for all commodities except electricity supply industry coal and spent nuclear fuel);
 - (b) coal services are required to pay the coal spillage charge.
- F.59 We do not propose changes to the scope or broad methodology used to determine the freight only line charge, but we will review the ability of

different market segments to pay a mark up. We will review and recalibrate the charges as part of PR13.

Allowing businesses to plan with a reasonable degree of assurance

- F.60 Freight operators and open access passenger operators are fully exposed to changes in variable track access charges made at a periodic review. (They do not pay the fixed track access charges.)²³ In addition, freight operators may have long term agreements with certain customers, which they must price on the basis of their understanding of how their incremental costs may change over the period of the contract.
- F.61 In PR08, we took account of the particular circumstances faced by freight operators by placing a cap on the level of certain freight charges well in advance of our determination.²⁴ In doing this, we had regard to our statutory duty to allow operators to plan the future of their businesses with a reasonable degree of assurance.
- F.62 This provided greater certainty to freight operators, while at the same time potentially constraining our and Network Rail's ability to set charges at an appropriate level in the light of emerging evidence. Such a benefit could be linked in to commitments to reducing whole-industry costs.

²³ Currently franchise passenger operators are largely protected against the financial effects of any changes through a mechanism in their franchise agreement, though this mechanism may be relaxed for new franchises as part of industry reform.

²⁴ The cap covered charges including, notably, the variable usage charge and the charge for freight only lines. It did not include the capacity charge.

Appendix to Annex F: responses to initial consultation on structure of charges

Background and purpose

1. In November 2009 we started a review of arrangements for establishing track access charges for CP4 by writing to the industry consulting on these changes.²⁵
2. Separately, in June 2010 we published a report on a high level review of track access charges and options for CP5, which we commissioned from CEPA (Cambridge Economic Policy Associates). We consulted on the charging options set out in the report, and on the current structure of track access charges more generally.²⁶
3. We are grateful for the many considered and detailed responses we received to both of these consultations. As some of the issues raised in the responses overlap, we are reporting on these consultations in this single appendix, and set out our conclusions.
4. It is worth noting that the responses to the consultations were made prior to various workshops, meetings and publications relating to industry reform, including publication of the vfm study. Therefore, just as our thinking has developed as this work has progressed, it is possible that some consultees' views have evolved and changed in some respects subsequent to making the submissions summarised here.
5. This appendix is structured as follows:
 - we first report on the consultation regarding arrangements for establishing charges, summarising the responses we received and concluding on the consultation;

²⁵ The letter can be found at: <http://www.rail-reg.gov.uk/upload/pdf/cp4-access-charges-review-consultation-251109.pdf>

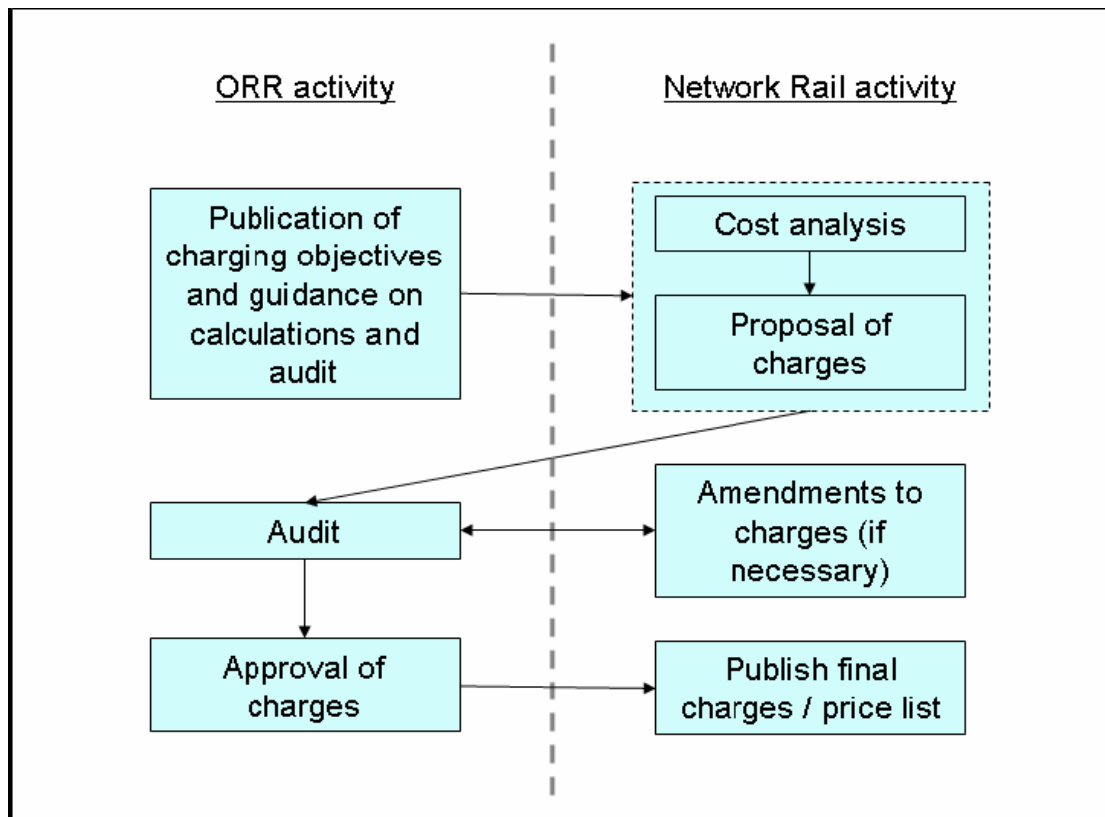
²⁶ The consultation letter can be found at: http://www.rail-reg.gov.uk/upload/pdf/charges_review_industry_letter_010710.pdf

- we then provide a brief overview of the CEPA report, including the high level charging options it examined; and we report on consultees' responses, consisting of overarching observations and comments on each of the options;
- we report on consultees' responses, from both of the consultations, that relate to the current (CP4) structure of charges; and
- we conclude on these consultations.

Arrangements for establishing charges

The consultation

6. For the 2008 periodic review (PR08) we gave Network Rail responsibility for the first time for leading the work to develop proposals for the majority of access charges for CP4. We wanted Network Rail to take responsibility for all the core technical work to understand cost variability and to propose charges to us that were consistent with our charging objectives. The broad division of responsibilities is set out in the figure below.



7. As stated above, in November 2009, following PR08, we issued a consultation to review the arrangements that were established for governance of access charges in

CP4. We said that we were broadly satisfied that the arrangements had worked well for CP4, and that Network Rail generally consulted well with the industry and had engaged positively with us. However, we recognised that there had been some specific instances where the company did not provide us with the information we required in a timely way, and that in some cases the management of consultations on charges proposals with the industry were less than ideal.

8. On balance, we proposed that for PR13 Network Rail retain its current responsibility for developing proposals for existing charges and general technical implementation of charges. We considered it important for us to lead the work on new charges as part of the development of the overall regulatory framework. We intended to work more closely with Network Rail in the development of any new charges. And we expected Network Rail to improve its engagement with the industry as it undertakes its work and consults on its proposals.

Consultees' views²⁷

9. A number of consultees responded on the specific issue of arrangements for establishing charges. (Consultees also commented on related charging matters, and these responses are summarised below, from paragraph 51.
10. There was considerable agreement (for example from Freightliner, First Group, Transport Scotland, National Express and East Coast) that in broad terms the allocation of responsibilities for charges in PR08 had worked well. First Group thought that the direct contact between Network Rail and its customers was a successful process, and it led to a “no surprises” result. Transport Scotland argued that continuity and improvement in the charging arrangements was of much less risk than radical change. Network Rail confirmed that it was keen to undertake this role, provided that it gets the support required from ORR and others.
11. Both Transport for London and Southeastern echoed our concern that information was not always provided in a timely way, and that some consultations allowed only a short timescale for responses. Freightliner stated that the consultation on vehicle characteristics could have been conducted at an earlier stage, and National Express also argued for earlier and more thorough involvement of operators.

²⁷ Responses to the consultation can be found at <http://www.rail-reg.gov.uk/server/show/ConWebDoc.9951>.

12. Transport Scotland emphasised the importance of involving the industry parties and funders at all stages in the development of charges. Freightliner, Transport for London and National Express argued, variously, that there was a lack of transparency on the development of charges, that Network Rail had insufficient resources to liaise with consultees, and that operators were given insufficient opportunity to check their data. As a counterbalance, Southeastern stated that there were a large number of consultations, which used up significant operator resources, and that stakeholder engagement should be coordinated so that operators had sufficient time to review each area.

Our conclusions on charging arrangements for PR13

13. We are grateful to respondents for explaining how the charging arrangements had worked in practice from their perspective during PR08. This feedback gives important insights that both we and Network Rail need to learn from during PR13.
14. We recognise the considerable agreement that in broad terms the allocation of responsibilities for charges in PR08 had worked well. We now confirm our proposal that Network Rail will retain its current responsibility for developing existing charges and general technical implementation of charges. In this work Network Rail will be guided by our charging objectives and our guidance. We will continue to lead work on new charges as part of the development of the overall regulatory framework.
15. We also note the wide spread concerns expressed in this consultation regarding some of the management aspects of the development of charging, including allowing sufficient time for consultation, transparency and engagement with industry.
16. In seeking to address these concerns, we will work closely with Network Rail to gain progressive assurance that it is appropriately planning and resourcing the charging workstreams. We will require Network Rail to set detailed milestones for each charging activity, which we will monitor. As PR13 develops, where we gain assurance that Network Rail's work on individual charges is proceeding well, our monitoring of Network Rail management with respect to those charges will become less detailed and more high level.
17. We will expect Network Rail to improve its engagement with the industry and other stakeholders as it undertakes its work and consults on charging proposals. We recognise there is a difficult balance to be struck between achieving high levels of

engagement and transparency, and not overburdening the industry with requests to engage. We will seek to achieve that balance, and encourage Network Rail to do likewise, for example through the appropriate involvement of the Association of Train Operating Companies (ATOC), rail freight representatives, and working groups in the development of certain policies.

High level options for charges

CEPA report

18. In 2010 we asked the economic consultancy CEPA to undertake a high level review of track access charges.²⁸ The purpose of this study was to identify the key issues and options for track access charges in CP5, so that Network Rail is more responsive to the needs of train (passenger and freight) operators, and that it, train operators and others are incentivised to make the best use of existing capacity and develop the network efficiently.
19. The CEPA report discusses the options for changing the existing structure of charges, and assesses these options against a set of criteria, including:
 - optimising network use;
 - cost reflectivity;
 - practicality;
 - simplicity; and
 - promotion of competition.
20. CEPA assessed the options relative to the existing regime, using a number of sometimes conflicting criteria. The report identified and focused on six short listed options which were:
 - an 'average cost' approach, simplifying charges. In this case, variable usage charges would be replaced by an average charge which would be equivalent for all users across the network. This type of approach could be implemented with or without fixed charges, and may reduce or increase individual charges;

²⁸ The study can be accessed at:
http://www.rail-reg.gov.uk/upload/pdf/charges_review_cep_a_report_june2010.pdf

- a regional 'short run incremental cost' (SRIC) approach, this would be similar to the current approach, however it could mean disaggregating variable usage charges on a regional basis to reflect the differentiated costs across regions;
- scarcity charge, where charges reflect the opportunity cost associated with the use of a path, incurred because another operator is prevented from using that path. Such an approach would typically mean higher charges for use of more capacity constrained areas of the network;
- a regional 'long run incremental cost' (LRIC) approach, where the variable usage charges would reflect the forward looking costs of providing capacity, including the costs of enhancements, and would be disaggregated across the network. Such an approach would typically mean higher variable usage charges (where there are capacity constraints), but with lower fixed charges;
- a track occupancy charge, where the focus is on charging for network capacity as opposed to track damage. For example, it could be charged per minute rather than per vehicle or train km. Such an approach may result in higher charges for those services which consume capacity on the network for long periods of time; and
- cost benefit sharing (or revenue sharing), this type of mechanism could allow Network Rail to share a fixed proportion of train operator revenues. Such an approach could incentivise Network Rail to target investment towards projects that would result in higher operator revenue. It could be implemented alongside other changes to charges.

21. Of these six options, CEPA recommended that four could offer improvements for the industry. They were: LRIC based charges, regional SRIC based charges; scarcity charges; and cost benefit sharing. CEPA did not consider that the average cost or the track occupancy charge option would provide benefits or improve the current charging structure. This was largely because of the poor signals that each of these options would send to customers for optimal use and development of the network, because they do not reflect the variation in economic value of different parts of the network at different times of day, or the extent of track damage associated with different types of vehicle. CEPA recommended that further detailed work should be carried out to evaluate the net benefits of any of the options more thoroughly.

22. When we consulted on the findings of the CEPA report,²⁹ we explained that we did not have a preferred view on any of the options at that stage, or indeed, whether any changes to track access charges are justified, but wanted to take account of stakeholders' views.
23. Consultees' specific comments on each of the short list of options considered by CEPA are given below. It is worth noting, however, that these responses were made in summer 2010. Subsequent to the consultation, certain representatives of the industry have participated in workshops associated with the LEK study on cost and revenue sharing (where higher variable track access charges and revenue sharing were investigated in some detail), in debates associated with the vfm study, and in work on rail industry reform more generally. *Therefore, it is possible that some consultees' views have evolved and changed in some respects subsequent to making these comments.*

*Consultees' views: overarching comments*³⁰

24. Several of the respondents noted that as the current franchise model is very proscriptive, it is difficult for operators to respond to charges by changing the train plan. Certain operators also stated that as variable charges were small, relative to other costs and the fixed charge, the associated incentives were also small.
25. ATOC advocated an increase in variable track access charges because it would increase the financial stability of the rail industry. Reform of franchising, initiated by DfT, is likely to give franchised train operators a bigger opportunity to vary output in line with actual demand. By increasing variable track access charges (and hence reducing fixed charges), the shock of a demand downturn can be shared with Network Rail, reducing the risk borne by the tax payer.
26. National Express similarly advocated a mechanism to allow charges to be reduced in the event of an economic downturn, but that the reduction could reflect an agreed reduction in local outputs. TOCs may for instance be prepared to take a risk on additional speed restrictions through renewal deferments.

²⁹ The consultation letter can be found at: http://www.rail-reg.gov.uk/upload/pdf/charges_review_industry_letter_010710.pdf.

³⁰ Responds to the high level options consultation can be found at: <http://www.rail-reg.gov.uk/server/show/ConWebDoc.10140>.

27. Certain respondents said that any proposed changes should be designed to address specific identified problems, or meet specified objectives. And that it was important that the benefits of the change outweighed the cost. First Group advocated a bias towards the status quo (because changes would involve costs, particularly those associated with the franchise financial adjustment mechanism), with changes only made where there is a significant proven benefit.
28. DB Schenker argued that freight operators needed stability and certainty, and asked that ORR send a strong early message that freight charges would be effectively unchanged in PR13. The more there is uncertainty, the greater there is risk that existing rail freight customers will become concerned and potential new customers will be put off. It and Freightliner noted that typically their main competitors were road hauliers, and that they did not pay comparable charges.
29. Rail Freight Group (RFG) pointed out that in PR08 extensive analysis was undertaken to determine whether freight operators could afford to pay higher charges. As there has not been a step change in circumstances since then, the conclusion should hold that rail freight operators cannot afford to pay a greater contribution in access charges than at present without a resultant increase in government subsidy.
30. Network Rail said that it is important that the structure of charges is consistent with the incentive framework for the industry as a whole. It would have major concerns if the charges inhibited development of stronger and deeper partnerships with operators at a local level.

“Average cost” approach

31. DB Schenker, the Public Transport Executives (PTEs, represented by PTEG) and Transport for London (TfL) agreed with CEPA’s conclusion not to support average cost charging, noting that it had poor incentive properties. DB Schenker was concerned that the approach would increase the variable charge. RFG noted that the benefits that have been delivered through vehicle type charging (to encourage more track friendly vehicles) would be lost.

Regional ‘short run incremental cost’ (SRIC) approach

32. ATOC was concerned that regionalised SRIC charges may reduce the variable charge on highly used routes, whereas it advocated higher variable charges on the basis that they would improve the industry’s financial stability. Freightliner, DB

Schenker and RFG would not support regionalised SRIC charges, at least in part because of the additional complexity they would entail. Southern (representing Southern, Southeastern and London Midland) was also concerned that the complexity of the charge would mean that the incentives were less effective.

33. TfL argued that the option would represent a more efficient allocation of costs than the current structure. Network Rail noted that the greater complexity may be balanced by better information and industry decision-making. PTEG did not disagree with the principle of this charge, but was not sure whether it would be practical given current data limitations.

Scarcity charge

34. DB Schenker did not support a scarcity charge, and considered that existing non financial mechanisms are sufficient to ensure that operators hold appropriate access rights whilst at the same time recognising that freight operators require some flexibility in their use of the network if they are to be competitive with other transport modes. RFG similarly did not support the charge.
35. First Group (representing its train operations: First ScotRail, First TransPennine Express, First Capital Connect, First Great Western, and Hull Trains) argued that it was unlikely that charges as a method of determining the allocation of scarce paths will have a significant or beneficial effect. The Department for Transport was also concerned that a pricing mechanism would add complexity, without necessarily resolving the problems of localised network congestion. PTEG argued that track access charges are not a replacement for good network planning, and that it was important to consider the performance impacts of the policy, which would be highly location-specific.
36. Freightliner pointed out that many trains use short sections of intercity routes, and the impact of a charge on these journeys would need to be considered.
37. Southern would not support the introduction of scarcity charges. It was concerned that, by increasing the marginal cost, such a charge would reduce the incentive to run services.
38. Network Rail said that a sophisticated methodology would be required if it were to have meaningful incentives that improved whole-industry outcomes.

39. Freightliner would only consider supporting a scarcity charge or reservation charge if overall freight charges did not increase. It considered that only a flat fee would be practical to implement. It provided some details on how a reservation charge might work in different markets. TfL also supported further investigation of a reservation charge.

“Long run incremental cost” (LRIC) approach

40. DB Schenker, Freightliner, Network Rail, RFG, and TfL either did not support, or were unlikely support, the introduction of LRIC based charges. PTEG would wish to see more details regarding how it might work.
41. RFG stated that the option appeared to assume that enhancements are always financially viable. First Group said that the economics of the industry were such that infrastructure enhancements generally required government funding, and that no change to the structure of charges would overcome that restriction.
42. Freightliner noted that it would be difficult to link each enhancement scheme directly with an increase in capacity, and it was not clear what benefits this complexity would bring. Network Rail argued that this option required a very high degree of data analysis, and the considerable expense may only have limited benefit as compared to the current, largely administrative, approach for allocating capacity. TfL also thought it would be costly and difficult to implement.
43. Southern was concerned that, by increasing the marginal cost, such a charge would reduce the incentive to run services.

Track occupancy charge

44. DB Schenker, PTEG and RFG would not support the introduction of a track occupancy charge. RFG said that freight services are often allocated capacity that results in longer journey times than they would wish, and under this option they would pay more for the slower journey times, which would be perverse. PTEG and TfL expressed similar concerns.
45. Network Rail considered that this option is best suited to situations where the primary focus is on managing scarce capacity, rather than track damage.

“Cost benefit sharing” (revenue sharing)

46. As mentioned above, subsequent to this consultation we, Network Rail and ATOC jointly commissioned LEK to conduct a study investigating the practical implementation of cost and revenue sharing options. For this option in particular, therefore, it is quite possible that some consultees’ views have changed in some respects subsequent to making these comments.
47. Freightliner said that they would not support revenue sharing for freight. Their margins were too small to be able to afford this, and it was unclear that it would have any effect on Network Rail’s incentives.
48. RFG was concerned that this option may incentivise Network Rail to prioritise passenger services over freight. DB Schenker had similar concerns. It cited benefit share arrangements that Network Rail’s predecessor, Railtrack, put in place with West Coast Trains, which it said gave rise to long term problems.
49. TfL would also not support this option on the basis that Network Rail had little influence over TOCs’ revenue. ATOC considered that higher variable charges would be superior to this option.
50. PTEG thought that the proposal could work in the context of greater devolution of powers and responsibilities to PTEs, but was concerned that it could lead to investment in favour of the most profitable services to the detriment of more heavily subsidised routes regardless of wider socio-economic benefits. Network Rail thought there may be merit in the option if it did not introduce excessive complexity or cost to the industry.

Consultees’ views on current track access charges

51. We are grateful to consultees, in both consultations, for providing us with their views on the current structure of charges. This input supplements the thorough discussion we listened to in our charging workshop of April 2010. In our July 2010 consultation, we stated the following:

“We consider that it is important to ensure that track access charges continue to be fit for purpose, that they take account of improved cost knowledge and a ‘changing world’. Specific issues to consider are:

- can track access charges be used to incentivise train operators, Network Rail and others to make decisions for the better use and development of capacity?
- are track access charges too complex, and / or too uniform?
- can track access charges be structured to promote competition better?
- should open access passenger and freight operators be dealt with differently?”

52. Our consultations primarily concerned charging arrangements and the high level options assessed by CEPA. Nonetheless, certain consultees made other important observations about charges that we summarise here.

Variable usage charge

53. Freightliner stated that the PR08 consultation on vehicle characteristics could have been conducted at an earlier stage, that more time was needed to remove spurious records and correct characteristics. It sought more clarity about the relationship between the surface damage calculation and bogie type, and argued that it is unhelpful to keep changing the incentives in this charge as this will undermine future purchasing decisions.

Electricity charge

54. Freightliner thought that the modelled consumption rates could have been determined much earlier during PR08, thus giving operators greater certainty. It was also unhappy with the electricity price variation mechanism. East Coast was concerned that the CP4 consumption rates were insufficiently accurate, particularly with respect to regenerative braking. London TravelWatch asked if electricity usage during stabling could be assessed. First Group highlighted that Network Rail has no incentive to make changes to the network to reduce the losses in the electricity supply system.

55. National Express questioned whether the electrification usage charge had any practical use in management decision, arguing that, if it did not, it represented an unnecessary complexity.
56. On-train metering has been subject to separate industry consultation, not discussed here.³¹

Capacity charge

57. Freightliner said that the basis of the CP4 capacity charge lacked transparency, and that there was no process for revisiting the charge if traffic levels fell. It would like to see an early review of the capacity charge which properly lays out the assumed base level of traffic with an assumed level of performance and then how a marginal calculation is made on top of these assumed baselines.
58. London TravelWatch supported the principle of the capacity charge, and thought that pricing signals could be considered to complement path allocation criteria.

Fixed charge

59. East Coast argued that the allocation of costs across users was insufficiently transparent to demonstrate that costs are borne by those giving rise to them. National Express thought that further disaggregation of costs should be required for PR13, and designed by customer requirements (as opposed to what is convenient for Network Rail).
60. London TravelWatch thought that this charge should be more closely tied to usage, though did not elaborate on why this should be.
61. PTEG argued that fixed charges essentially play no role in TOCs' decision making, and advocated their abolition (substituted by direct government funding of Network Rail) to improve transparency and simplify the charging structure.

Financial adjustment by franchise funders ("schedule 9" or "clause 18.1")

62. First Group, Stagecoach South Western Trains (SSWT) and East Midlands Trains said that the franchise adjustment required a huge resource at senior level. First said that during the long period while the adjustment was being calculated, it

³¹ See for example the track access consultation on London Midland 23rd SA, 17 December 2010, <http://www.networkrail.co.uk/browseDirectory.aspx?dir=\Track Access&pageid=4593&root=>

inhibited planning by both the operator and the funder. They proposed the possible introduction of conditional changes to the access agreements which only apply on franchise termination.

63. Southern said that CEPA had misinterpreted the franchise financial adjustment mechanisms (in schedule 9 of the franchise). The mechanism in all but the oldest franchises did not affect charging incentives, but just reduces the financial risk of the periodic review.

Certainty regarding charging

64. Freightliner said that their foremost concern was to have as much certainty about any revision to charges at an early stage as possible before charges commence. This was important for fixing prices with customers, and for making investments. They argued that as the charges are set at the predicted long run variable cost, there was no obvious case for change.
65. Network Rail observed that there appeared to be considerable industry agreement on the merits of an early review of freight charges, but argued that such a review could only be based on a continuation, in broad terms, of current charging arrangements.

Coal spillage charge and rebate

66. Freightliner noted the lack of evidence to support the calculation of the coal spillage charge for CP4. It wanted to see more evidence on this for CP5.

Open access operators

67. London TravelWatch thought that open access operators should be more effectively integrated within the access charging structure. DfT argued that the approach for open access passenger operators should be more aligned to that of the franchised operators with whom they compete for passengers.
68. Network Rail said that there were opportunities to investigate charging options to support greater competition in well-targeted areas such as long-distance inter-city services.

Station charges

69. Southeastern made a number of detailed comments on station charges including qualifying expenditure (which ORR does not regulate) in its response to the consultation on charging arrangements.

Conclusions

70. In these conclusions, we are confirming that for PR13 Network Rail will retain its current responsibility for developing proposals for existing charges and general technical implementation of charges. In this, they will be directed by our charging objectives and our guidance. We will continue to lead work on new charges as part of the development of the overall regulatory framework.
71. Noting the concerns expressed in our consultation, we will work closely with Network Rail to gain progressive assurance that it is appropriately planning and resourcing these activities. We will expect Network Rail to improve its engagement with the industry and other stakeholders as it undertakes its work and consults on its proposals. We will require Network Rail to set detailed milestones for each charging activity, which we will monitor. As PR13 develops, where we gain assurance that Network Rail's work on individual charges is proceeding well, our monitoring of Network Rail workstream management will become less detailed and more high level.
72. We are grateful for the many considered and detailed responses we received to these consultations. We and Network Rail will draw on these insights as we develop charging policy.
73. There have been important policy developments in the industry subsequent to the consultation, not least with respect to the Department for Transport's franchise policy, and the publication of the vfm study. These policies and recommendations add impetus to the need to revisit charging options subsequent to the 2010 charging consultation, and require us to challenge our assumptions as to whether the role of charges should change to support the evolving industry more effectively.
74. With these policy developments in mind, we accept CEPA's recommendation, generally supported by consultees, not to pursue the track occupancy option and the average cost pricing option further for the national rail network (with the possible exception of some form of average charge for open access passenger services). We also note the concerns expressed with regards to the potential complexity of a

LRIC approach, and the challenge to its relevance in the context where enhancements are not self financing.

75. Going forwards we will take full account of the strong concerns expressed about ensuring the benefits of any changes outweigh any costs.
76. We agree with the consultees that argued that, as many of the franchises are currently highly specified, the influence of charges on service patterns has inevitably been constrained. As the Department for Transport has now stated its intention to simplify train service specification for future franchises, this constraint is likely to weaken over the coming years. In this context in particular, we consider it important to investigate charging options, such as a scarcity charge, that reflect the economic value of capacity. Such charges have the potential to complement administrative mechanisms and reduce the need for service specification in the franchise.
77. We also think that it is important to investigate further an option for geographical disaggregate of the variable usage charge route (similar to the CEPA option for regional SRIC charging) in the light of subsequent policy developments. In particular, recommendations from the vfm study relating to devolution and incentivising operators to reduce whole industry costs. Such an option could incentivise operators to reduce costs in their area of operation, because this would result in lower charges.
78. The revenue sharing option investigated by CEPA was subsequently assessed and supported by LEK. We discuss this option in this consultation.
79. We accept that there is frustration regarding the way changes to the structure of charges interact with the financial adjustment mechanism ("schedule 9") in the franchise. We are at early stages of investigating with DfT how the schedule might be reformed for new franchises, and any complementary measures we at ORR might take so that the net result delivers value for money.

G. Franchise timetable

Franchisee name	Franchise agreement expiry date*
First/Keolis TransPennine	January 2012
London Eastern Railway (National Express East Anglia)	February 2012
West Coast Trains (Virgin Rail)	December 2012
East Coast Main Line (East Coast Trains)	End 2012
First Greater Western	March 2013
c2c Rail	May 2013
Northern Rail	September 2013
London Overground	March 2014
London & South Eastern Railway (Southeastern)	May 2014
First ScotRail	November 2014
East Midlands Trains	April 2015
First Capital Connect	April 2015
London & Birmingham Railway (London Midland)	September 2015
XC Trains (Arriva CrossCountry)	April 2016
Stagecoach South West Trains	February 2017
Southern Railway	July 2017
Arriva Trains Wales	October 2018
The Chiltern Railway Company	December 2021
Merseyrail Electrics 2002	July 2028

*Source: Department for Transport

Notes: Most franchises have a 7 period mandatory extension period beyond the contractual end date which can be called at the discretion of the franchise authority. Some franchises have discretionary breakpoints before the contract end date

For simplicity we have termed Merseyrail Electrics and London Overground Rail Operations as franchisees, whereas they hold concession agreements with, respectively, Merseyrail PTE and Transport for London.