



OFFICE OF RAIL AND ROAD



**Network Charges**  
A consultation on how charges  
can improve efficiency  
10 December 2015

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# Summary



The way in which Network Rail charges train operators for their use of its network matters. It affects decisions made by operators, Network Rail and funders. But the understanding of what drives Network Rail's costs and the link between these costs and charges is weak. A minority of Network Rail's costs are reflected in charges with governments directly paying Network Rail for the majority. Many train operators have little incentive to respond to these charges. At times and places where the network is congested, this represents a missed opportunity to help operators and funders to improve how the network is used.

Charges can play an important role in improving outcomes for passengers, freight and taxpayers. Building on recent announcements that Government will channel more funding through train operators, improved charges could support a range of improvements, including:

## Reduce network costs



Supports whole industry efforts to reduce network costs.

## Improve network use



Improves operator and funder incentives to use the network efficiently.

## Improve network provision



Supports Network Rail handling of cost, capacity and performance trade-offs.

## Improve wider decision making



Supports informed decisions e.g. around enhancements, franchising and subsidy.

## Support competition



Creates a more level playing field for different types of passenger train operators.

## Facilitates understanding and response



Supports a stable business environment, reduces complexity and improves transparency.

We have considered different options for changing the structure of charges. We propose focusing our future work on understanding what drives Network Rail's costs, considering if this information should be reflected in charges, and improving the existing set of charges.

This is our first consultation on the structure of charges for CP6 (2019-2024) and beyond. It forms part of our wider work to prepare for the next periodic review of Network Rail in early 2016.

This review has already benefitted from engagement and contributions from stakeholders, including the Rail Delivery Group, and we would like your views in response to this consultation (by 4 March 2016) and by attending the workshops we will be hosting.



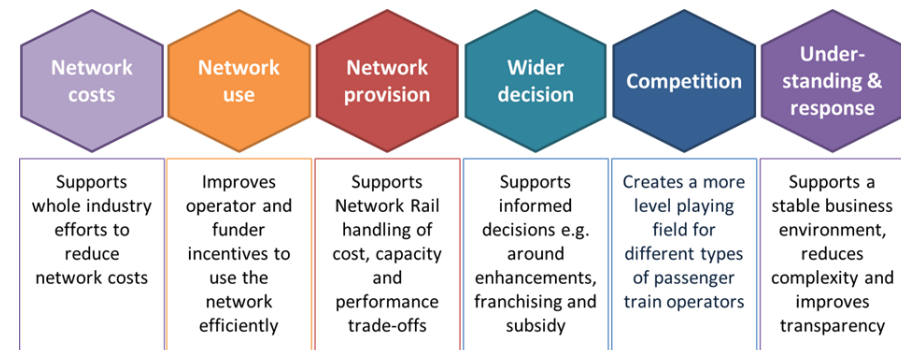
# 1. Introduction

## Why review the charging structure?

1. Access charges are the mechanism through which Network Rail recovers some of its costs from users of its network. ORR is responsible for setting the charging framework, which Network Rail then implements.
2. Charges influence the choices made by those using and funding the network by:
  - a) determining the costs faced by franchised, freight and open access train operators for accessing the network;
  - b) helping to align the incentives faced by all parties in the rail sector, encouraging train operators and Network Rail to work together; and
  - c) affecting the prospects for, and impacts of, open access and freight entry and growth.
3. Well-designed charges can improve outcomes. If costs are allocated to the operator that causes them, that operator is more likely to find ways to reduce them.
4. For example, well-designed charges could encourage train operators to work more closely with Network Rail in the scoping and specification of projects. They could ensure that projects are not more expensive than they need to be while reflecting the needs of their own customers in the planning and delivery of projects.

5. Charges could also help make better use of the network. If intensity of use causes costs to be incurred, charges linked to these costs could encourage train operators to work with Network Rail to reduce these costs, perhaps by re-routing or re-timing services. Continued strong demand to use these parts of the network (or to use it in a particular way) also provides Network Rail with information about which parts of the network should be expanded.
6. Charges are not the only way to improve outcomes. There may also be benefits from improving the information on what drives costs. Better information could improve decisions taken by funders and ORR, including decisions taken about franchise specification, access decisions and levels of subsidy. Figure 1 illustrates some of the potential outcomes from an improved charging structure.

**Figure 1: Benefits from an improved charging structure**



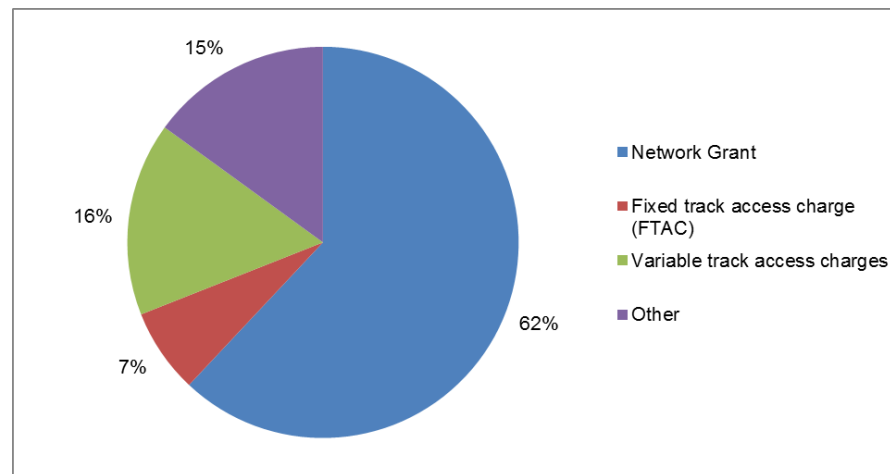
7. The structure of charges needs to be considered in the wider rail context. The current structure emphasises

charges to recover short-run variable costs, which are low relative to full network costs. Along with other regulatory measures, this structure was appropriate when the rail industry was expecting declining demand, and the principal concern was to encourage use during this decline.

8. This context has now changed to one with sustained growth in demand for freight and passenger services and significant congestion on certain parts of the network.
9. To understand how well the current framework performs, we commissioned a report by Credo in 2014, "Evidence gathering on the effectiveness of PR08's incentives regime" ([2014 Credo report](#)). This was a study of the effectiveness of the regime which ran from 2009-10 to 2013-14. The evidence is relevant for the current charges.
10. The 2014 Credo report found that the short-run variable charges encouraged some desirable behaviours, including:
  - a) operators and train manufacturers responded to the variable usage charge (VUC) by considering vehicle design and modifying their vehicles to reduce the impact of wear and tear on the network; and
  - b) operators invested in programmes (for eco-driving, optimal train temperatures and stopping patterns) to reduce electricity consumed in response to the electric current for traction (EC4T) charge. This charge may be particularly effective because franchised operators are exposed to it and the existence of on train metering meant the charge was more cost-reflective.
11. Despite these examples, the potential for the current structure of charges to improve outcomes is limited.

12. First, cost-reflective variable charges only account for a small proportion (16%) of Network Rail's income, as illustrated in Figure 2.
13. Second, a further 7% of Network Rail's income comes from the fixed track access charge (FTAC), which is not linked meaningfully to costs. The 2014 Credo report quotes a franchised operator as observing that, "*this is just a pass through that we [franchised operators] cannot influence so has no impact on decision making.*"

**Figure 2: Network Rail's income for CP5**



14. Third, more than 60% of Network Rail's income is forecast to come directly from a government subsidy (network grant) which is not linked to costs and provides no incentives on Network Rail or operators. The members of the Rail Delivery Group considered in its review of charges (discussed further below) that "*the network grant and the FTAC are both arbitrary balancing figures...and are not considered to be sufficiently cost reflective.*"

15. Fourth, train operators are not fully exposed to the current charges. Franchise agreements give most train operators significant protections from changes in charges at each periodic review, except at the margin. Open access operators do not pay fixed charges and only some freight services contribute to fixed charges. There are reasons for this, but outcomes could be improved by strengthening the link between network use and charges.
16. We commissioned consultants Steer Davies Gleave (SDG) to estimate the benefits of an improved understanding of Network Rail's costs and a closer link between costs and charges. SDG's report is published [here](#).
17. SDG's case study evidence suggests that rail decisions could be improved through a better understanding of costs (whether or not such improved information is transmitted through charges). A wide range of industry decisions are underpinned by the ability of decision makers to understand and forecast costs. These decisions include: ensuring enhancements are efficiently identified and scoped; enabling Network Rail to efficiently manage its network; and determining the appropriate levels for Network Rail's outputs and allowed revenues. SDG estimated that the value of these improved decisions could be more than £100m per control period. Even if information or charges only caused a small (say 1%) additional cost saving, this would be significant: a 1% reduction in operating expenditure would be equal to £134m over five years and a 1% renewals saving would be £121m.
18. Set against the above opportunities for improvement is the need to consider the costs associated with change. Changing charging structures (as opposed to levels of charges) can create 'winners' and 'losers' between users of

the network. The transitional costs associated with a change in structure are incurred upfront but the benefits may only arise over a number of years or even control periods. We have a preference for a stable charging structure over time. In Chapter 8, we discuss the issues we expect to consider in developing more detailed proposals.

## Wider context

19. There are a number of issues and projects that may affect our review of the structure of charges, as set out below.

## Legislation

20. In addition to developing charging proposals that reflect our statutory duties (available [here](#)), the framework also needs to comply with a number of European legislative requirements. These are described in more detail in section E of the draft impact assessments that accompany each of the main packages that we discuss in this consultation. At this stage, we are focussing on the general approach we should take. More detailed work, including on compliance with the legal framework, will be needed in developing detailed proposals.

## UK and Scottish Governments

21. In the Summer 2015 Budget, the chancellor announced that "The government will change the way it channels public money through the industry, directing it through the train operating companies so that Network Rail focuses firmly on the needs of train operators..."
22. This change opens up the potential for a greater proportion of Network Rail's income to come from charges and

therefore a more conventional relationship to develop between Network Rail and its customers.

23. DfT has also written to us to explain the UK government's thoughts on how financial incentives can improve outcomes for passengers, freight and taxpayers. We have published this letter [here](#). It suggests that, under certain conditions, and after further consideration and consultation with the industry, it would consider allowing some exposure for franchised operators to changes in charges. This could improve the alignment of incentives between franchised operators and Network Rail in England & Wales.
24. In Transport Scotland's recent publication ([Delivering the goods – Consultation towards Scotland's rail freight strategy](#)), we note references to our review of the structure of charges, specifically in terms of the freight industry. We plan to engage separately with the Scottish Government to understand its views and priorities.

### Shaw Report

25. In November 2015, Nicola Shaw published her scoping report, 'The future shape and financing of Network Rail'. This work may lead to recommendations that affect the merits of different charging approaches. We will reflect upon recommendations once the final report is published.

### Rail Delivery Group (RDG)

26. RDG has been carrying out its own review of charges, considering future reforms to Network Rail's current charging structure (see [here](#)). We have worked with RDG to understand the range of industry's views. RDG has been transparent and invited our engagement which has

enabled us to reflect on its thinking as we prepared this document. As part of this work, RDG has produced some detailed analysis that will contribute to our evidence base as we assess specific charging options. This analysis also covers options for the possessions and performance regimes (Schedules 4 and 8) and we intend to reflect this analysis in our reviews of these regimes.

### Network Rail's cost attribution project

27. Network Rail has commissioned a consultant to look at ways of identifying drivers of fixed costs and to conduct a pilot study on one of its routes. We are working with Network Rail on this. This work could inform the development of charging options (particularly under the infrastructure costs package discussed in Chapter 4).
28. The work is on-going and is due to produce disaggregated cost and traffic data and an assessment of the impact of service characteristics on costs by spring 2016. Early indications for the study appear to demonstrate the feasibility of this approach, and that the necessary data exists. Work is continuing to determine the level of accuracy with which costs can be attributed and how this might be translated into charges.

### Competition and Markets Authority (CMA)

29. CMA is considering the scope for increasing competition in passenger rail services. More information is available in Chapter 7 and on the CMA website.

### Freight Investment and Sustainability Group (FISG)

30. FISG was set up by its members, including the UK Government to ensure concerns such as the impact of

uncertainty on freight is addressed and to secure the economic benefits generated by rail freight. Its members are the DfT, Transport Scotland, RDG and freight companies and customers. ORR is an observer.

## Consultation questions

31. **For this section we welcome your views on the following:**

- a) **How much does Network Rail's structure of charges matter today?**
- b) **What issues could a new structure address?**
- c) **Can you provide examples of behaviours that would change within your organisation or elsewhere in the rail industry with an improved structure of charges?**

## Structure of the report

32. In this document, we discuss:

- a) the approach taken to carry out this structure of charges review including our objectives and options analysis (Chapter 2);
- b) the packages of options under consideration and our proposals in this consultation (Chapter 3);
- c) each of the main packages of options and supporting packages (Chapter 4-7); and

d) the implementation of the structure of charges, next steps and questions on your views (Chapter 8).

33. Annexes are referenced throughout the document. Annex F provides a glossary of terms for reference.

34. We are also publishing three draft impact assessments – one for each of the main packages of options. This enables us to be as transparent as possible, consistent with the request for transparency in [RDG's review of charges](#).

35. The following consultancy reports that have all contributed to this consultation (available [here](#)):

- a) The Credo report on evidence gathering on the effectiveness of PR08's incentive regime (April 2014).
- b) The SDG report on the practicalities of scarcity charging (March 2014).
- c) The SDG report on identifying the benefits of an improved understanding of Network Rail's costs and cost drivers (May 2015).

## Next steps

36. This consultation closes on Friday 4 March 2016, and responses will inform our work to prepare for the next periodic review of Network Rail (PR18).

37. We are hosting workshops to discuss the views on the questions posed in this consultation. Further details on these workshops and how to respond to this consultation are set out in Chapter 8.



## 2. Background and approach



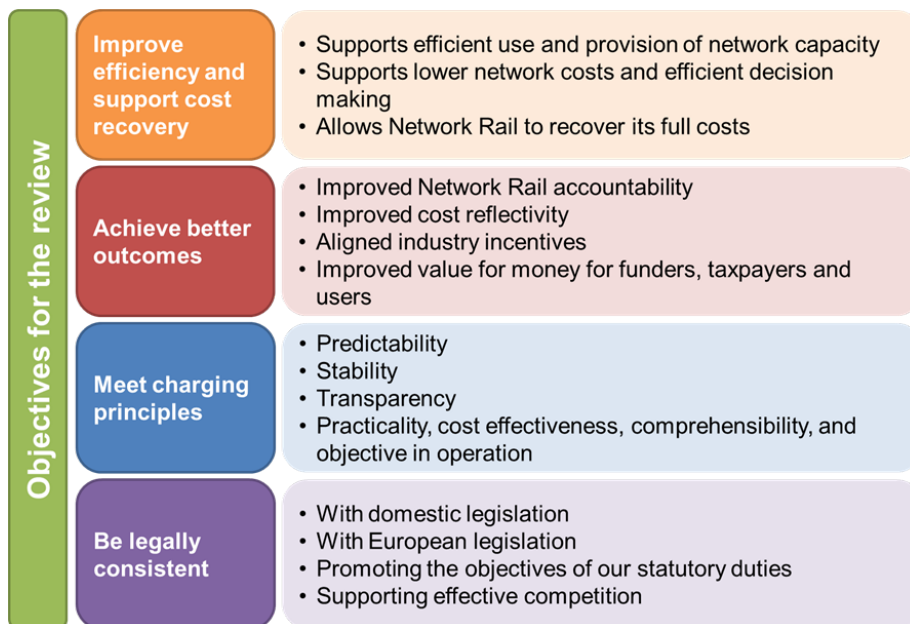
### Objectives

38. Our objectives for Network Rail's structure of charges are laid out in Figure 3. We explained how we arrived at our objectives for the structure of charges review in our December 2014 letter to the Rail Delivery Group (RDG), published [here](#).

### What are the gaps against the objectives?

39. Network Rail's current charges (which are summarised in [Annex A](#)) do not fully meet these objectives.

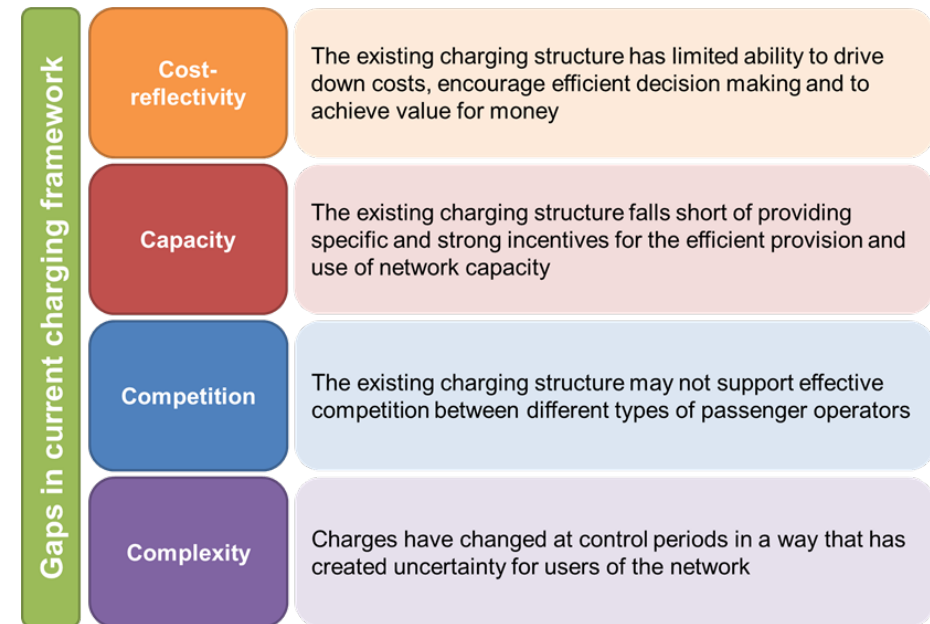
Figure 3: Our objectives for the structure of charges



The main gaps we found in the current regime are set out in Figure 4. More detail on these gaps can be found in [Annex B](#), where we discuss the process we followed, including considering [RDG's assessment](#) of the current charges and incentives regime.

40. These high-level gaps provide a useful tool for considering options. They provide a way to assess whether an option contributes significantly to addressing the shortcomings of the current charging framework.

Figure 4: Gaps in our current charging regime



## Criteria for assessing options

41. In addition to the above objectives and identified gaps, we have developed a broader set of criteria against which to assess options. The criteria help to consider the full range of impacts of each option, and are used in the supporting draft impact assessments. These criteria are drawn from a broad range of sources which are explained in detail in [Annex D](#). Figure 5 illustrates the five main headings for our criteria.

Figure 5: High-level assessment criteria



## States of the world

42. A new charging structure must be fit for purpose over time, including any industry changes. To do this, we are testing the merits of proposed options across a range of possible future scenarios or 'states of the world'.

43. We worked with RDG to define and develop a range of possible future states of the world for the period up to 2030. [Annex C](#) includes the full set of scenarios. Some examples of the scenarios developed under this work are:

- a) a reduction in franchise protection and increased franchise flexibility; and

- b) direct freight protection.

## Consultation questions

44. For this section we welcome your views on the following:

- a) Are the high-level gaps (in Figure 4) a good starting point for developing solutions? Would you have expected to see any other high-level gaps and, if so, what are they?
- b) Do the assessment criteria accurately reflect the main factors we should consider for assessing the impact of options?
- c) To what extent does the use of scenarios, in the form of the RDG 'states of the world', help to understand the likely effectiveness of future charging structures?

# 3. High-level options and proposal



## Options under consideration

45. We have identified three high-level options for changes to the existing charging structure. We refer to these as ‘packages’, as each would involve a number of new or modified charges, each of which would then need to be developed in detail. The three packages are:
- a) **Infrastructure costs package.** This would develop a better understanding of the drivers of the network’s fixed costs (all costs that are not short-run variable costs). If we pass this information into charges, this could result in a different allocation of fixed costs to users than we have today. This would lead to higher charges in more costly parts of the network and lower charges in less costly areas.
  - b) **Value-based capacity package.** This would introduce new charges linked to the relative value of different parts of the network (to users and society). Charges would be higher where the network is of higher value, such as where the capacity available does not meet demand. We are minded not to pursue this option for PR18 but invite your views on this proposal.
  - c) **The package of improvements to the current short-run variable charges.** This would address known weaknesses with existing short-run variable charges. An example in this package includes considering the disaggregation of some charges to improve cost-reflectivity.
46. The packages could be combined. The infrastructure costs package and the package of improvements to the current short-run variable charges could work well together as they are mostly recovering different costs. The value-based capacity package could be implemented alongside both of the other two packages or could be designed in a way that it replaces the infrastructure costs package.
47. We introduced these three options at an industry workshop in July 2015 (slides can be found [here](#)). Attendees emphasised the distinction between increasing understanding of costs and passing this improved information into charges. This was also one of the key findings in [RDG’s review of charges](#). We therefore decided to assess each of the infrastructure costs and value-based capacity packages with the following two sub-options:
- a) understanding more about the drivers of fixed costs of the network and the relative value of network capacity; and
  - b) passing this improved information through to charges.
48. This separation allows us to identify impacts that would arise from having better information alone, and the additional impacts of including the information in charges.
49. There are two further packages of options, relating to the complexity and competition gaps. We are treating these as supporting packages to be assessed alongside the above three main packages. These are discussed in more detail in Chapter 7.

50. At the July industry workshop, we received requests for further clarity around what we mean by the infrastructure costs and value-based capacity packages. We have provided this in [Annex E](#) through a stylised example of how charges might be calculated under these two options.

## Our proposal

### Focusing our work on the infrastructure costs package

51. We think the infrastructure costs package represents the biggest opportunity to improve outcomes, for a number of reasons:

- a) an improved understanding of costs is a useful end in itself whether or not that improved understanding is translated into charges. This should support better decision-making in areas such as franchise specification, enhancements, capacity allocation and the level and distribution of subsidy – i.e. where administrative decisions determine outcomes;
- b) reflecting fixed costs in charges has the potential to improve decision-making and to drive down network costs beyond that achievable through improved information alone; and
- c) there is potential for greater cost-reflectivity to also send useful signals about the value of capacity.

52. We propose focusing on exploring options within the infrastructure costs package, and developing an understanding of the impacts of these.

53. A number of important issues will need to be addressed as we work through the detail. In particular, we will need to consider:

- a) how to retain appropriate incentives for efficient use of parts of the network where there is spare capacity (and where short-run variable charges can be covered but where charges based on fixed costs could discourage additional use); and
- b) the treatment of freight and open access operators, including whether they should face similar charges to franchised operators and, if so, how we might protect the commercial viability of these market segments. It is relevant to note that European legislation requires that a charge that includes a ‘mark-up’ above ‘costs directly incurred’ is permissible only if the market can bear it.

54. The reforms to industry funding announced in the Summer Budget 2015, provide a potential opportunity to retain appropriate incentives without unduly impacting commercial viability. Redirection of network grant funding could be used to protect operators from large changes in levels of charges, while leaving them exposed to improved (‘marginal’) incentives on their use of the network.

### Role of the value-based package

55. We recognise the potential benefits from an improved understanding of the value of capacity, in particular its potential to support decisions taken by Network Rail, funders and ORR about the use and provision of network capacity.

56. But, we do not see the case for moving immediately to value-based charges, for a number of reasons:
- a) it would represent a significant shift in the approach to charges, particularly as current charges do not yet closely reflect costs; and
  - b) given the complexity of estimating ‘value’, charges would be based on a series of assumptions and new methodologies that would be refined over time, which suggests that users would be exposed to the risk of changing charges, thus reducing their incentive effect.
57. Instead, as explained in our example in [Annex E](#), improved cost information could take us some way to achieving the objectives of the value-based capacity package. This is because cost-reflective charges have the potential to also increase charges where capacity is scarce. Reflecting this, we will review the results of cost-based charging options to ensure that they send sensible signals about the value of capacity and do not, for example, lead to a reduction in charges where demand for capacity is high.
58. In addition, our work on system operation could provide an alternative way to improve the use of capacity. Earlier this year we consulted on how system operation should be defined, what activities are involved and what good system operation looks like (see [System operation – a consultation on making better use of the railway network](#)).

### Continuing with improvements to the current charges

59. Although we will focus on new charging options to improve the cost-reflectivity of fixed costs, we can also see a need for improvements to short-run variable charges.

60. We will continue work to identify improvements to the current short-run variable charges, but will start from the current structure as a base, rather than – for example – seeking to build a new approach to variable charging. This allows us to address known weaknesses in a proportionate way.
61. Relying on this package of options *alone* would have limited impact in improving cost-reflectivity as these charges currently only represent around 16% of Network Rail’s income.

### Our proposal for consultation

62. For the remainder of this review of Network Rail’s structure of charges we are proposing to:
- a) prioritise the development of the infrastructure costs package. At this stage, we are proposing to continue working with Network Rail to understand the drivers of costs that are fixed in the medium- to long-term and then separately to consider whether and how to pass any improved understanding of costs into charges;
  - b) ensure the cost-based options are consistent with sending sensible signals about the value of capacity, but not to develop specific options to implement value-based charges;
  - c) continue work on options within the package of improvements to Network Rail’s short-run variable charges; and
  - d) consider further the options within the supporting packages (discussed in more detail in Chapter 7).

## Consultation questions

63. We would like to hear your views on the above proposals. In particular:
- a) To what extent do the packages of options represent the key strategic choices available to improve the existing charging structure?
  - b) Would you expect the infrastructure costs package to deliver more (or fewer) benefits than the value-based capacity package at this stage and, if so, why?

## 4. Infrastructure costs package



64. The infrastructure costs package is based on understanding the drivers of Network Rail's costs. Improved information could lead to new charges to recover Network Rail's fixed costs. This package would target the cost-reflectivity gap and also has the potential to improve the capacity gap. The gaps are identified in Chapter 2.
65. **We are proposing to prioritise further development of this package for PR18.** A full draft impact assessment on the infrastructure costs package can be found [here](#).

### What do we have today?

66. Network Rail currently has a number of charges to recover its fixed costs:
- the **freight specific charge (FSC)** is designed to recover 'freight avoidable costs', i.e. the costs that would be avoided if freight services were to no longer use the network (a proxy for the network costs that freight cause);
  - the **freight only line charge (FOL)** recovers the fixed costs of freight only lines;
  - the **stations long term charge (SLTC)** covers the costs of long term maintenance, repairs and renewal costs at stations; and
  - the **fixed track access charge (FTAC)** covers all costs in the revenue requirement after accounting for all other charges and other single till income.

67. We will refer to these charges collectively as fixed charges. More detail on these charges is provided in [Annex A](#).
68. There is a low degree of understanding about the drivers of infrastructure costs. But this understanding is an important factor in a range of important decisions made in the industry, including franchising, investment, capacity allocation, operations and asset management.
69. In addition, the FTAC is not allocated in a way that strongly reflects what we know about cost, and instead is allocated to operators by simple metrics such as train miles. This approach assumes that much of Network Rail's cost base is fixed and does not vary much across the network. It does not capture the way that costs can vary, or how different services or use of capacity can impact costs. These issues are discussed in more detail in the next section.

### What are the options within this package?

70. We know that many costs occur at a local level and will be different across the network and within each route. For example, the costs of the Brighton-Eastbourne line are likely to differ significantly from those between Brighton and East Croydon, or from East Croydon to Victoria. At present, charges do not reflect how costs vary by location and could, in principle, be disaggregated to the geographic level where they arise.

71. Similarly, use of the network at different times of day or by different types of rolling stock might determine certain types of infrastructure costs (e.g. platform lengthening to accommodate greater passenger numbers in the morning peak). The illustrative example in [Annex E](#) explains these concepts and the potential impacts.
72. Developing a charge can be seen as a three-step process, deciding: the scope of costs to be included; how to attribute these costs; and how to allocate costs and/or reflect them in charges. We discuss each step in turn.

### Scope of cost attribution and allocation

73. First, we decide the scope of the costs to be recovered. The scope of costs for the infrastructure costs package is all of the costs in Network Rail's revenue requirement, minus the costs already captured by short-run variable charges. New charges under this package would replace some or all of the existing FTAC, and might capture other current fixed charges. This might reduce the number of charges.

### Attributing costs to activities

74. The second step in this process is to understand what is causing the costs to be incurred (i.e. the cost drivers). We refer to this as the attribution of costs.
75. Costs are attributable to an activity if changes in that activity lead (immediately or over time) to changes in the overall level of cost. For example, the cost of electricity infrastructure on a line could be attributed to electric rolling stock, but not to those that are diesel powered. Certain signalling infrastructure provides use for particular

geographic areas, and so could be attributed to those areas.

76. There are a number of ways to attribute infrastructure costs to use, including:
- a) 'avoidable costs'. This approach would aim to attribute Network Rail's costs to services in a way that reflects that the costs would not have been incurred in the absence of that service; and
  - b) 'long-run incremental costs' or long-run marginal costs (LRIC/LRMC). This approach would aim to attribute the costs relating to constrained capacity. That is, attributing the expected future investment costs which would be required to accommodate a specified increase in traffic on the network.
77. Sometimes it may not be possible to attribute costs using these approaches. This may be due to a lack of information, which prevents a reliable link between costs and activity from being established. In addition, some costs will not be linked to a specific activity. We refer to the latter as 'common costs'.
78. Choices can be made about how to allocate any unattributed costs.

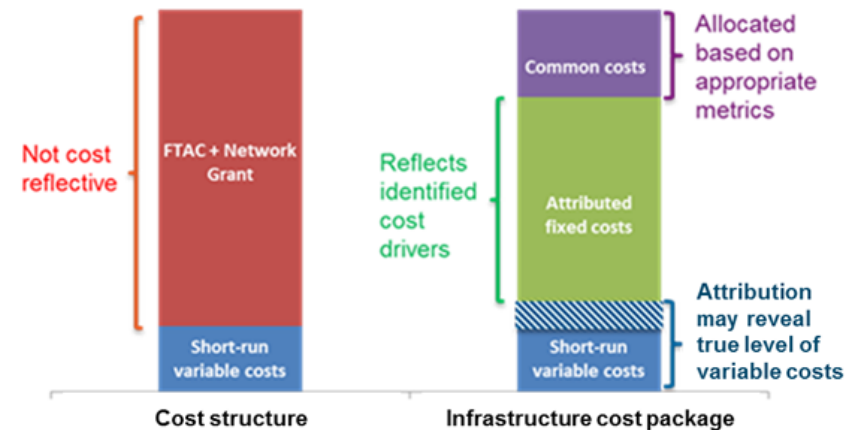
### Allocation of costs and charging

79. The third step is cost allocation. The appropriate way to allocate costs will depend upon our objectives and whether the cost allocation is to improve information or to flow through into charges.



80. In particular, cost allocation might seek to:
- increase cost-reflectivity of information and/or charges**, by using methods that are likely to result in better cost-reflectivity of charges, designing charges that correspond to the cost attribution or – where attribution approaches have been unable clearly to link costs with activity on the network – using suitable approximations, linked to likely cost causation;
  - improve incentives** faced by operators and/or Network Rail, by seeking to recover unattributed costs in ways that encourage desirable behaviours; and
  - recover costs** in ways that avoid sending perverse incentives about network use.
81. Even for costs that can be directly attributed to a train service, there are several factors to consider when deciding whether and how to allocate costs to charges. These include:
- the frequency of re-estimation of the charge; and
  - which metrics should be used to allocate the charge (e.g. a lump sum charge for each year of the control period regardless of operator behaviour or a charge based on a metric the operator can control to some extent, such as per train km).
82. The next phase of our work would focus on developing more detailed options for allocation and understanding their effects. The impacts of a more cost-reflective charging structure could look broadly like Figure 6.

**Figure 6: Comparison of current and potential charging structure**



83. In this section we discuss the impacts of the improved information that may flow from the infrastructure costs package and the potential additional impacts from reflecting this information in charges. Precise impacts will depend on what methodology we use to estimate cost drivers and how we implement any changes to charges. The draft supporting [impact assessment](#) provides more detail on the expected impacts of this package.

### Positive impacts

84. Developing the infrastructure costs package further will result in a step-change in our understanding of the drivers of Network Rail's costs. This information and added transparency will improve:

- a) ORR's and others' ability to monitor and challenge Network Rail;
- b) funders', Network Rail's and ORR's decisions on capacity provision and allocation. For example, franchising decisions would have better information about the cost implications of different service specifications, while enhancement decisions would have better information about the full cost impacts of particular options;
- c) the information available to inform long-term planning, option development and decisions about network enhancement, and government decisions on the specification and procurement of rolling stock; and
- d) the understanding of the location and drivers of costs, and the allocation of subsidy between regions, and to different operators. This could be an important enabler for devolution of Network Rail decisions, or funding decisions.

85. A more cost-reflective charging structure, where operators face the costs they impose on Network Rail, will provide them with improved incentives to reduce those costs through better operational and rolling stock decisions. This could provide a stimulus for cooperation and alternative ways of working to bring down system-wide costs (e.g. alliancing and/or benefit sharing).

## Challenges

86. A better understanding of the drivers of Network Rail's costs will require more granular data than is currently required under the existing structure of charges. The

potential size of the benefits described above is dependent on the quality of the underlying data. Early discussions with Network Rail indicate that the necessary underlying data exists. Work is continuing to determine the level of accuracy with which costs can be attributed and how this might be translated into charges.

- 87. Each stage of this process will incur cost from the early option development stages through to testing of a pilot area and ultimate rollout. Operators will also face one-off costs, which will go towards training industry professionals to familiarise themselves with the new charging framework.
- 88. For any of the benefits to be realised, the information will need to be understood and used by Network Rail, ORR and funders.
- 89. If Network Rail was to recover more costs through charges linked to activity and actual costs incurred, this could reduce the predictability of charges to operators and have impacts on the overall variability of Network Rail's income.
- 90. A more cost-reflective charging structure would necessarily see the charges levied on some services increase, while reducing the charges for others. This brings about the benefits described above but could potentially be damaging to operators that are exposed to these changes, particularly during any transitional period.
- 91. Passing on improved cost information to charges would only have additional benefits in terms of behaviours if operators are exposed to charges and have a degree of flexibility to respond.

92. As we develop our proposals, we will want to consider the following:
- a) transitional measures, to introduce any changes over time;
  - b) the potential to consider piloting changes in a specific area first;
  - c) consideration of how impacts might affect particular customer groups, such as those with a particularly high sensitivity to rail charges;
  - d) mechanisms to recognise the wider benefits of rail freight (e.g. environmental gains and cost savings to governments' road budgets); and
  - e) adjustments to reflect the differences in risks faced by open access and franchised passenger operators.

## Our current view

93. We think there is a strong case for improving the understanding of network costs. The costs of doing so, while significant, seem likely to be outweighed by the benefits in terms of improved decision-making.
94. We also think that improving the cost-reflectivity of charges has the potential to improve outcomes: reducing costs and improving the use of the network. These benefits depend upon the extent to which franchised operators are exposed to these charges, and on our ability to identify ways to implement changes while providing for freight and open access to adjust to a new charging approach.

95. With respect to franchised operators, we note DfT's letter to us on improving financial incentives to achieve better outcomes for passengers, freight and taxpayers (published [here](#)). This letter highlights the potential costs of any changes to franchise agreements but also acknowledges the potential benefits of greater exposure of franchised operators to charges in future.
96. Separately, the proposed changes to industry funding – including the reduction or removal of the network grant – might allow funding that reflects the benefits of rail freight and which would support a transition to more cost-reflective charges.
97. Our proposal is to prioritise the development of the infrastructure costs package. At this stage, we propose to continue work with Network Rail to understand the drivers of costs that are fixed in the medium- to long-term and then to consider separately whether and how to pass any improved understanding of costs into charges.

## Consultation questions

98. **We would welcome your comments on our views above and our proposals. We would particularly value your responses to the following:**
- a) **What costs and benefits do you see with the infrastructure costs package? Do you think our draft impact assessment is missing any significant impacts or has misrepresented any impacts?**
  - b) **To what extent do you think the benefits of this package can be realised through more information, rather than through the use of charges?**

## 5. Value-based capacity package



99. The growth in traffic over the last decade and the high costs of network expansion highlight the importance of improving the use of the existing network. The value-based capacity package seeks to address this issue (the capacity gap). It would result in new charges based on the relative value of capacity on different parts of the network.
100. Throughout this consultation, when referring to ‘value’, we are referring to both commercial and social value. Commercial value includes the revenue an operator can secure and social value is the overall value to society, which includes factors such as reduced pollution or crowding on other services.
101. For the reasons set out in Chapter 3 and in this chapter, **we are proposing to stop development of this package of charging options for PR18**. Nonetheless, we value your views on this proposal. A full draft impact assessment on the value-based capacity package can be found [here](#).

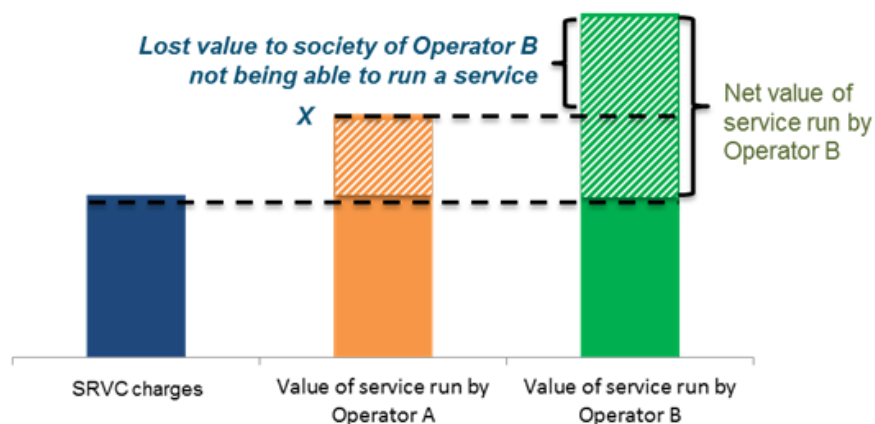
### What do we have today?

102. The existing charging structure does not provide specific or strong incentives for the efficient provision and use of network capacity.
103. The current structure of charges does not include any charges to reflect the relative value of train paths on different parts of the network, which means that capacity is priced the same on congested and uncongested parts of the network. The signals about relative value that are present in normal markets and in most regulated networks – where it plays a role in supporting the best use of scarce resources – are absent.
104. Although value is not included in the calculation of current charges, there are elements of the charging structure that pursue objectives linked to valuing the use of capacity:
- a) the **capacity charge** allows Network Rail to recover the additional costs of unplanned disruption (i.e. Schedule 8 performance regime costs) it incurs as additional traffic comes onto the network. As it becomes more difficult for Network Rail to recover from incidents as the network becomes more crowded, the capacity charge seeks to address the disincentive effect of allowing more trains onto the network; and
  - b) the **volume incentive** under which Network Rail receives additional income if actual traffic growth is above the forecast level.
105. Although the capacity charge and volume incentive provide some incentive for Network Rail to increase use of the network, they do not reflect the value of network provision. Where demand for capacity exceeds the capacity that Network Rail has made available, there are no charging mechanisms to ensure that the most valuable service (to society) operates.
106. Knock-on delay from incidents affects more services on heavily utilised parts of the network than on quieter parts. Performance regime costs to Network Rail resulting from

poor performance on these parts of the network are therefore likely to be higher. Network Rail’s incentives to accommodate additional services on these heavily utilised parts of the network are therefore weak.

107. To illustrate, Figure 7 sets out an example where our current structure of charges may not incentivise Network Rail to give operator B (e.g. a crowded train, carrying large numbers of commuters to work at peak time) priority for a slot over operator A (e.g. a train running with a small number of leisure travellers, that could travel an hour later). Provided both trains cover their current short-run variable cost (SRVC) charges (current charges are explained in [Annex A](#)), the current structure of charges provides no incentive – and little by way of information – for Network Rail to give the capacity to one of these train services over the other.

**Figure 7: Stylised illustration of value of train slots**



108. If Operator A is using all of the available capacity so that Operator B cannot access the network, a charge that reflected the value of the capacity e.g. set above X in Figure 7 – or information that prompted a reallocation of services – could result in a preferable outcome for society.

109. More generally, information and/or charges linked to value might encourage better decisions to be taken about trade-offs between services and locations, such as decisions on where to deploy the best performing rolling stock or provide an additional stimulus for contingency planning.

### What are the options within this package?

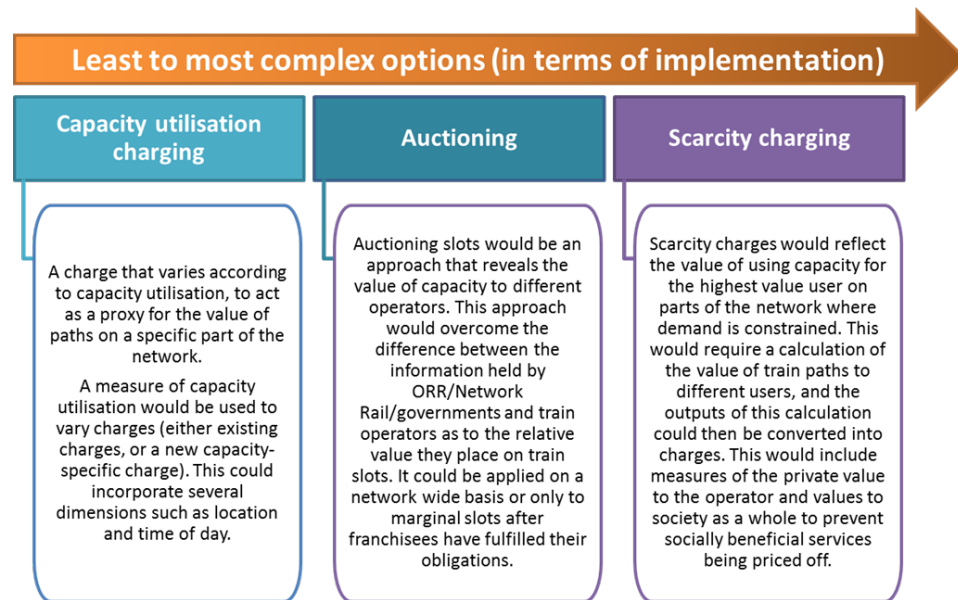
110. The value-based capacity package would result in a charging framework which reflects the value of capacity to society, which ensures that the operator delivering the most value would make use of it. A value-based charge would be lower when the demand for capacity is lower.

111. Given the mix of commercial and social benefits delivered by the railways, the value of capacity is not easy to calculate. It would need to reflect profits to the operator, the financial value of a service to the taxpayer and – importantly – the value of services to society. This third factor would include reduced road congestion, pollution and crowding on other services and factors such as improved employment or study opportunities to society from reduced journey times. Some of these factors are difficult to calculate (particularly at a service level).

112. There are a number of different charges or mechanisms that could be used to estimate this value and incorporate it into charges. Figure 8 outlines some of the illustrative

options in order of complexity of implementation. This ordering is illustrative as there are many factors to balance, including the extent to which the approach could be adapted to reflect social, as well as commercial, value.

**Figure 8: Stylised illustration of value of train slots**



### Impacts of the value-based capacity package

- 113. Reflecting the approach to the costs package, a distinction should be made between benefits from improved information about the value of capacity, and those that could arise from passing this improved information in to charges. This section covers impacts from both of these sub-options.
- 114. Currently, capacity is allocated via administrative processes. Information about the relative value of capacity on different parts of the network does not exist to inform

these processes in a systematic way. The existing charges do not reflect the value of capacity in a way that would incentivise less valuable train services to travel via a different route, at a different time, or not to use the network at all. This lack of information and incentives will limit any efforts to improve the mix of services, and means that where such decisions are made they are taken administratively rather than being largely based on incentives.

### Positive impacts from better information

- 115. Improved information about value could be used by operators in planning and running their services. This information could also be used by governments at re-franchising to improve allocation to the highest value use, or by ORR to inform access decisions. These responses to better information could lead to better utilisation, and an increase in the overall value of services using the network.
- 116. Better information about the value of network capacity could also highlight areas where this value is particularly high. This could allow Network Rail to make trade-offs and allocate its resources between different parts of the network. More specifically, information about value could inform business cases, which might support better timetabling or improved management of key assets, supporting increased traffic and realising more value from the rail network.
- 117. In addition, better information about value could improve decision-making by funders, Network Rail and ORR on options for enhancing the network.

118. This information might also provide a basis for improved regulation of Network Rail's management of network capacity. For example, by providing an additional 'metric' to measure performance and against which to hold Network Rail to account.

### Positive impacts from charging

119. Passing this improved information in to charges could further improve use of the network by providing an incentive for train paths to be used by those with the greatest commercial and social value. Value-based charges would in theory incentivise train operators to withdraw, re-route or re-time low value train services as a result of having to pay higher charges to access capacity constrained parts of the network. This relies on the charges accurately reflecting overall value, and on train operators being able to respond (as discussed below).

120. Value-based capacity charges could send price signals to Network Rail in terms of the most efficient way to allocate train paths to operators, as well as encouraging it to accommodate additional requests for train paths in general, on the back of updated regulatory incentives. It might also support efforts to improve the use of capacity on congested parts of the network, for example through better timetabling. Overall, there is potential under the value-based capacity package to increase overall use of the network, which would mean higher levels of passengers and goods being carried overall.

### Challenges

121. Despite these potential benefits there are considerable challenges with this package. Calculating and

implementing a value-based charge that reflects commercial and social value would be complex. Although it is difficult to obtain an accurate value of capacity to society, improving the information about the commercial value of capacity might still aid decision-making with funders, Network Rail and ORR incorporating this improved information alongside existing information about social benefits.

122. Implementing value-based capacity charging in the absence of a better understanding of network costs and their drivers could result in future volatility in charges and unintended incentive effects.

123. For options within this package to be effective other changes must take place. In particular, a degree of flexibility in franchising is needed to realise benefits from value-based charging, so that train operators and Network Rail are able to respond. Also, many of the benefits would only be realised if capacity rights were reallocated on a more frequent basis; something that would, in itself, have implications for our track access policy and the franchise process, freight users and passengers.

124. Implementing most of the options would also be complicated and costly. This is because of issues such as the potential redesign of the billing system to be able to accommodate different charge rates at different times of day (which it cannot currently do). This would likely result in a significant cost for Network Rail.

125. Further, if a new charge were underpinned by complex economic models, the industry would need to incur some costs to understand and be able to respond to these new

charges. This might reduce or delay the benefits from such a charge.

126. As discussed in Chapter 4, a better understanding of drivers of fixed costs is likely to be a useful first step in understanding the value of capacity. Moving immediately to value-based charges without first achieving this better understanding of costs is likely to increase the risk of perverse incentives and behaviours.

## Our current view

127. It is likely to be both complicated and costly to establish a methodology that directly links charges to the value of capacity. If such a model were established it is also not clear that it would have sufficient stability over time or buy-in among stakeholders to encourage participants to respond.

128. Reflecting this, we propose not to prioritise further development of charging options based on the value of capacity.

129. We do think that information about the value of capacity can play a significant role in a range of important decisions taken by funders, Network Rail and ORR. It is also important not to send signals in the charging framework that discourage use of under-used capacity or unduly encourage use of scarce capacity.

130. In light of this, we propose to review the cost-based options to ensure that they are consistent with sending sensible signals about the value of capacity.

## Consultation questions

131. **We would welcome your views on the above proposal. In particular, we invite comments on the following questions:**

- a) **What costs and benefits do you see with the value-based capacity package? Do you think our draft [impact assessment](#) is missing any significant impacts, or has misrepresented any impacts?**
- b) **Would you expect a better understanding of costs to be an essential precursor to value-based charges?**
- c) **To what extent do you think the benefits of this package can be realised through more information alone, without passing that into charges?**



## 6. Package of improvements to current short-run variable charges



132. This option would result in a charging structure which looks similar to the one we have today. It would involve assessing improvements to our current short-run variable charges to address known weaknesses.

133. Aspects of this package could be combined with the infrastructure costs package because it largely deals with the costs directly incurred as a result of operating the train service i.e. short-run variable costs. The infrastructure costs package is concerned with costs that vary over the longer term.

134. **We are proposing to develop this package of options further for PR18.** A draft impact assessment on this package can be found [here](#). The next step would be to draw up a full list of options within this package and to carry out an assessment of these in order to shortlist those options that provide a proportionate improvement to the current charging structure.

### What do we have today?

135. We currently have five charges and two incentive mechanisms that could come under scope for revision by this package. These are: variable usage charge (VUC); capacity charge; electrification asset usage charge (EAUC); electric current for traction charge (EC4T); coal spillage charge; volume incentive; and the route-level

benefit sharing mechanism (REBS). More information on each of these is provided in [Annex A](#).

136. There is a wide variation in how different charges perform against our objectives.

137. The evidence suggests these short-run variable charges provide incentives to reduce cost and to improve decision-making. For example, the [2014 Credo report](#) cites operators, rolling stock owners and train manufacturers stating that they respond to the VUC. Similarly for EC4T, the report provides evidence of operators investing in eco-driving programmes, considering train temperature strategies, stopping patterns and regenerative braking to reduce their EC4T charge.

138. We have evidence to suggest that some charges are not fully cost-reflective. For example, while the VUC varies by vehicle type, it does not reflect any variation in the cost of maintaining assets across different locations. The coal spillage charge is paid by every operator carrying coal, regardless of whether coal is spilt. Furthermore, to limit impacts to certain sectors, we did not fully pass through all costs to operators for CP5. This is the case for the capacity charge for freight, existing open access operators and the VUC for freight operators.

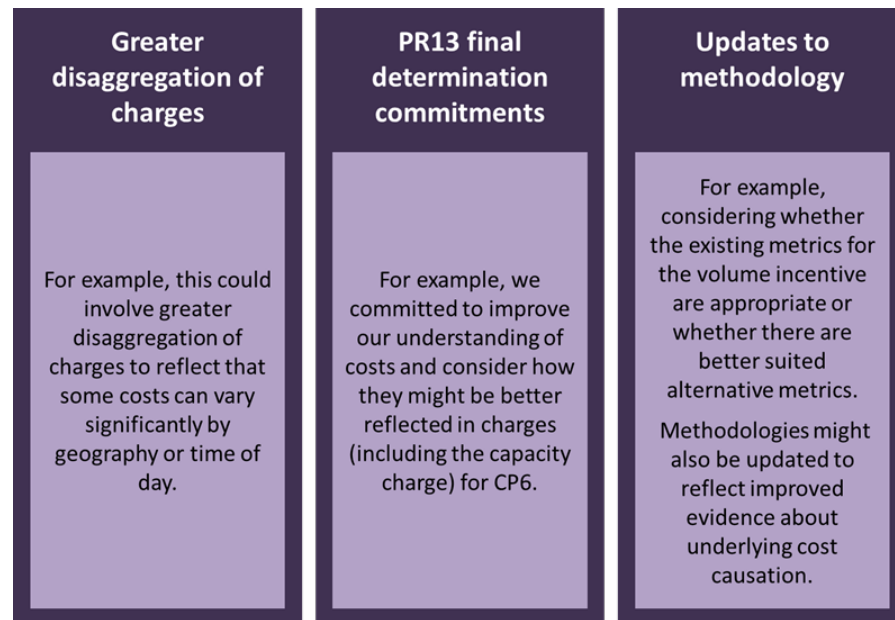
139. The existing short-run variable charges may be perceived as unstable and unpredictable. Freight operators, in particular, have raised concerns about the potential for

charges to vary between control periods, and the impact that this has on their ability to respond and attract investment to the freight industry.

## What are the options within this package?

140. Under this package, the main focus would be on developing and applying improvements to address weaknesses within the existing charging structure.

**Figure 9: Illustrative options under the improvements package**



141. This package would still include options that would imply a significant modification to some of the existing charges. In Figure 9, we have outlined some illustrative options that may be considered, grouped by relevance to the identified

weaknesses of the current short-run variable charges. These options are used in the draft [impact assessment](#) to identify the types of effects that might result from the improvements package.

## Positive impacts and challenges

142. The main benefits of this package relate to addressing known weaknesses. We also know many stakeholders place a lot of value on the stability of charges over time and over control periods. Addressing known concerns and largely retaining the overall structure of variable charges should limit uncertainty somewhat and may provide a proportionate improvement, mitigating any future instability.

143. The benefits from options within this package are mostly related to improved cost-reflectivity, so addressing the cost-reflectivity gap. For example, greater use of geographic disaggregation could provide better signals about the costs that train operators are causing on the network and influence decisions about where to deploy track-friendly rolling stock.

144. Depending on the options taken forward, this package could also send better signals about capacity in places where a more congested network is correlated with a more costly network, thus reducing the capacity gap.

145. As with the other two packages, improving the cost-reflectivity of charges would be likely to have significant additional benefits in terms of behaviours if operators face some exposure to charges and have a degree of flexibility to respond.

## Our current view

146. We are keen to pursue this package for the above reasons. It has the ability to address at least three of the identified gaps in the current charging regime, although the scale of impact is likely to be limited.
147. In particular, current short-run variable charges only represent around 16% of Network Rail's income. With this in mind, limiting improvements to this package would represent a missed opportunity. Charging reviews are resource-intensive and infrequent, and impose costs on industry stakeholders. **We propose to take forward this package alongside the infrastructure costs package**, where we consider the gains to be achieved could be much greater.

## Consultation questions

148. **We would welcome your views on the above proposal. In particular, we invite comments on the following questions:**
- a) **What options would you expect to see in a long list of improvements to Network Rail's short-run variable charges?**
  - b) **What options do you see as a priority for this package?**
  - c) **What costs and benefits do you see with this package?**

## 7. Supporting packages



149. In addition to the above three main packages, we also have two supporting packages for directly addressing the competition and complexity gaps. These packages are not separate and could be implemented alongside other packages. They relate principally to how charges work for open access operators and how we might address the complexity of the charging framework.
150. This consultation does not consider competition in the rail freight industry directly as the competition gap we identified was in the passenger market.

### Competition options

#### What do we have today?

151. Currently, we have a passenger rail market that is predominantly made up of franchised operators running services across the country (accounting for 99% of passenger miles) with the remainder supplied by open access operators.
152. At present, open access operators pay short-run variable charges, but do not face fixed track access charges, as summarised in [Annex A](#). As a result, franchised services contribute to both short-run variable costs and a proportion of fixed costs, those on open access operators only contribute towards short-run variable costs.

#### What problems have we identified?

153. The current framework for market entry by open access operators was designed for using spare capacity to serve new markets. Some recent open access applications for access have been large relative to franchised operations and have included requests to access relatively congested parts of the network.
154. Taxpayers face a risk that open access operators will enter a market and reduce the relevant governments' overall income from the franchise process (by 'abstracting' revenue from franchised operators), and face an increased funding requirement for Network Rail (as open access operators do not face the fixed charge).
155. These risks may be mitigated to some extent by the benefits from open access competition, including the potential for competition to improve the performance of franchised operators and/or highlighting opportunities for further market growth. However, it appears that the charging framework provides an incentive on funders to prefer franchised passenger operations over similar open access services.

#### The CMA's project on on-rail competition

156. The CMA has been undertaking a project to investigate the potential for greater on-rail competition. More information is available [here](#).

157. It identifies options for improving on-rail competition, that include ways of increasing competition between franchised operators and also an option that would allow open access operators to play a larger role, complementing the franchising system.
158. As indicated in our [letter](#) to CMA, we think that the diversity of the GB rail market means that there are circumstances where competition between franchisees is likely to be the most appropriate model, while in others open access competition could deliver additional benefits. We also acknowledge that implementation to provide an improved framework for open access will need to address a range of practical issues which we detail in our letter.
159. This indicates a need to consider whether some open access operators should make a greater contribution to network costs, particularly where capacity is scarce and most valuable. One of CMA's options (its 'option 1') would combine such changes to network charges with the introduction of a levy (i.e. a charge imposed by government) to make a contribution to the costs of loss-making services. To implement option 1, the UK Government would either need to make use of primary legislation or transpose Article 12 of the Recast Directive (Directive 2012/34/EU).
160. The scope of this document is only to consider the changes this might suggest for the charging framework.
- Issues associated with charges for open access**
161. When we consider the appropriate structure of charges for open access operators, this raises a number of issues.
162. First, we need to identify the appropriate level of charges that open access operators should face. Our starting point is that open access operators should continue to face charges that at least reflect the short-term variable costs that they cause to be incurred.
163. The arguments in respect of other network charges, and whether open access operators should face charges implemented under the infrastructure costs package, are more complicated.
164. In order to send appropriate signals to open access operators about where they might enter and expand services, in principle charges should reflect the short-run variable costs caused by their entry where capacity is available, but reflect the fixed as well as the short-run variable costs of the network where it is scarce.
165. We also need to establish an appropriate treatment for the existing/incumbent open access operator services, where a number of businesses have taken long-term decisions on the basis of the current charging approach. This might point to the need for transitional arrangements.
166. If designed appropriately, such changes might allow for a better allocation of capacity between open access operators and franchised operations. In particular, funders might be relatively neutral between open access operators and franchised services in terms of the revenue impacts on the taxpayer – so where open access operators can deliver more efficiency or higher revenues, governments might seek to promote their role.

## Implementation

167. We would need to ensure that any approach where open access and franchised operators are charged differently would be legally sound. The case whereby open access operators pay only short-term variable charges but franchised operators pay these along with a proportion of fixed costs was tested in the courts and found to be legal. The High Court<sup>1</sup> recognised that open access and franchised services are different, face different risks and may need to face different charges so that the overall effect is not discriminatory.

## Consultation questions

168. **At this stage, we would welcome stakeholders' comments on how charges might apply to open access in future.**

169. **In particular, we would welcome comments on:**

- a) whether open access operators should face charges implemented under the infrastructure costs package;**

- b) what forms of adjustments to charges might be appropriate for open access operators, relative to franchised operators; and**
- c) how current incumbent open access operators should be treated.**

## Complexity options

### What do we have today?

170. Complexity could be limiting the effectiveness of existing charges. It impedes understanding and therefore the potential impact of incentive properties. If industry participants do not understand how a charge works, it may not create the desired incentives.

171. During PR13, the complexity of the existing charging structure was mentioned by stakeholders as a common limitation. RDG also found in its [review of charges](#) that, *'The current regime is considered by many industry parties to be too complex, weakening some of its incentive properties'*. This was also picked up in the [2014 Credo report](#), both explicitly (as industry representatives talked about this issue) and implicitly (as there was evidence of industry misunderstanding the regime).

172. There is a perception that the current regime is not stable, with charges subject to significant changes that are not considered to be based on changes in underlying cost drivers. This was picked up as a key finding from the [RDG's review of charges](#).

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<sup>1</sup> See decision of the English High Court, (GNER) v Office of Rail Regulation, Hull Trains and Grand Central Railway [2006] EWHC 1942 (Admin)

173. As a result, we have considered the issues that have been raised and what proportionate changes we could make to try to reduce complexity.

### Proposed options

174. We consider there to be two general options within this package.

175. The first option could be to introduce a **charges calculator**. If operators are considering running an extra service, they could enter certain characteristics and find out what the charge for this service would be. This would be a faster method for understanding exactly what it costs to run an additional service. This could address the concern raised in [RDG's review of charges](#) that, *'The current regime is not seen to be sufficiently straightforward, especially by freight operators, meaning that it is challenging to provide an accurate estimate of the cost of running a service.'*

176. A potential challenge with such a calculator could be that users may still need to enter many metrics and an understanding of the underlying drivers of costs would still be needed to be able to reduce their charges.

177. The second option would be to rely on **introducing complexity as a test** when developing the other options. With every change, we would ensure the charges are not becoming more complicated and that we are reducing or limiting complexity where possible.

178. At this stage, we are not ruling out either of these options and will consider the potential design and impact of each following this consultation.

## Consultation questions

179. For this section we welcome your views on the following:

- a) **Would you like to see either of these options developed further?**
- b) **Are there other options you would like assessed to reduce complexity?**
- c) **What costs and benefits would you expect with these options?**

## 8. Implementation, next steps and consultation questions



### Implementation of changes to the structure of charges

180. We are committed to ensuring any changes made to the structure of charges are a proportionate improvement. We would like to have a charging structure that remains stable over time and we do not want to introduce unnecessary instability to the regime. In this light, we plan to consider the following implementation issues before proposing detailed changes:

- a) transitional measures to introduce any changes over time to allow businesses to adapt;
- b) the potential to consider roll-out of any changes to a pilot area first, potentially shadow-charging initially to ensure we understand potential impacts;
- c) whether the impacts of charging options are different when combined with other proposals and when considered against the rest of the regulatory regime;
- d) consideration of the impacts on particular customer groups, such as those with a particularly high sensitivity to rail charges;
- e) mechanisms to recognise the wider benefits of rail freight (e.g. environmental and cost savings to governments' road budgets);

- f) how to retain appropriate incentives for efficient use of parts of the network where there is spare capacity (and where short-run variable charges can be covered but charges based on fixed costs could discourage additional use); and
- g) the treatment of freight and open access operators; whether they should face similar charges to franchised operators and, if so, how we might protect the commercial viability of these market segments.

181. Any changes to the structure of charges for CP6 would need to be implemented through changes in operators' track access charges. Further information on the rest of PR18 process will be provided in our first PR18 consultation early next year.

### Consultation questions

**182. In this section we have started to highlight issues associated with implementation of a new charging structure and potential actions to alleviate negative impacts.**

**183. We would particularly welcome your views on the following:**

- a) Do you have any views on options for implementing a new structure and what would be the impacts of these options?**



- b) We understand the structure of charges has the potential to impact different groups in different ways. In developing the options in this consultation (particularly in the draft impact assessments), have we drawn out the implications for different groups? Please explain your response.**

## Workshop

184. We will be hosting two workshops, as follows:

- a) In Glasgow, on 5 February 2016.
- b) In London, on 12 February 2016, at our offices; and

185. The purpose of these workshops is to discuss and to hear your views on the questions raised in this consultation.

186. If you would like to attend, please register your interest [here](#). Further details about the workshop, including the agenda, will be provided in advance of the workshop.

## Responding to this consultation

187. This consultation closes on Friday 4 March 2016. Please submit your responses, in electronic form, to the ORR structure of charges inbox ([orr.structureofcharges@orr.gsi.gov.uk](mailto:orr.structureofcharges@orr.gsi.gov.uk)). You may find it useful to use this [pro forma](#).

188. Information provided in response to this consultation, including personal information, may be subject to publication or release to other parties or to disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA),

the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). If you want information, including personal data that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

189. In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on ORR.

190. Please note, when sending documents to us in electronic format that will be published on our website, we would prefer that you email us your correspondence in Microsoft Word format or the Open Document Format. This is so that we are able to apply web standards to content on our website. If you do email us a PDF document, where possible please:

- create it from an electronic word processed file rather than sending us a scanned copy of your response; and
- ensure that the PDF's security method is set to "no security" in the document properties.

## Summary of consultation questions

### Chapter 1 - Introduction

1. How much does Network Rail's structure of charges matter today?
2. What issues could a new structure address?
3. Can you provide examples of behaviours that would change within your organisation or elsewhere in the rail industry with an improved structure of charges?

### Chapter 2 – Background and approach

4. Are the high-level gaps (in Figure 4) a good starting point for developing solutions? Would you have expected to see any other high-level gaps and, if so, what are they?
5. Do the assessment criteria accurately reflect the main factors we should consider for assessing the impact of options?
6. To what extent does the use of scenarios, in the form of the RDG 'states of the world', help to understand the likely effectiveness of future charging structures?

### Chapter 3 – Options and proposal

7. To what extent do the packages of options represent the key strategic choices available to improve the existing charging structure?
8. Would you expect the infrastructure costs package to deliver more (or fewer) benefits than the value-based capacity package at this stage and, if so, why?

### Chapter 4 - Infrastructure costs package

9. We would welcome your views on our proposal to prioritise further development of the infrastructure costs package.
10. What costs and benefits do you see with the infrastructure costs package? Do you think our draft impact assessment is missing any significant impacts or has misrepresented any impacts?
11. To what extent do you think the benefits of this package can be realised through more information, rather than through the use of charges?

### Chapter 5 - Value-based capacity package

12. We would welcome your views on our proposal not to prioritise further development of charging options based on the value of capacity.
13. What costs and benefits do you see with the value-based capacity package? Do you think our draft impact assessment is missing any significant impacts, or has misrepresented any impacts?
14. Would you expect a better understanding of costs to be an essential precursor to value-based charges?
15. To what extent do you think the benefits of this package can be realised through more information alone, without passing that into charges?

## **Chapter 6 - Package of improvements to short-run variable charges**

16. What options would you expect to see in a long list of improvements to Network Rail's short-run variable charges?
17. What options do you see as a priority for this package?
18. What costs and benefits do you see with this package?

## **Chapter 7 - Supporting packages**

19. We would welcome comments on:
  - a) whether open access operators should face charges implemented under the infrastructure costs package;
  - b) what forms of adjustments to charges might be appropriate for open access operators, relative to franchised operators; and
  - c) how current incumbent open access operators should be treated.
20. Would you like to see either of the complexity options developed further?
21. Are there other options you would like assessed to reduce complexity?
22. What costs and benefits would you expect with these options?

## **Chapter 8 - Implementation of the structure of charges**

23. In chapter 8, we started to highlight issues associated with implementation of a new charging structure and potential actions to alleviate negative impacts. Do you have any views on options for implementing a new structure and what would be the impacts of these options?
24. We understand the structure of charges has the potential to impact different groups in different ways. In developing the options in this consultation (particularly in the draft impact assessments), have we drawn out the implications for different groups? Please explain your response.

# Annex A – Summary of current charges

1. This annex provides a high level description of the existing charges and incentives, which are in scope of the structure of charges review, together with a description of what costs each mechanism is designed to recover.
2. Table 1 sets out the current charges/incentives, their rationale and approximate scale (based on Network Rail's income received through each of the charges or incentives is also included for 2014-15 (1<sup>st</sup> year of CP5)).

**Table 1: CP5 charges and incentives**

	<b>Name of charge</b>	<b>Basis for charge</b>	<b>2014-15 Network Rail income (£m)</b>
<b>Charges</b>	<b>Variable usage charge (VUC)</b>	Recovers maintenance and renewal (M&R) costs that vary with traffic. Should incentivise action that reduces wear and tear caused by trains.	227
	<b>Electricity asset usage charge (EAUC)</b>	Recovers M&R costs of electrification assets that vary with traffic.	15
	<b>Traction electricity charge (EC4T)</b>	Recovers the costs of providing electricity for traction purposes. Should incentivise operators to make energy savings and Network Rail to manage transmission losses. The incentive is strongest when the operator is billed on the basis of metered consumption.	285
	<b>Capacity charge (CC)</b>	Recovers Network Rail's Schedule 8 compensation costs <sup>2</sup> that vary with traffic. By neutralising Schedule 8 costs to Network Rail for accepting additional traffic, it should remove the disincentive on Network Rail to allow additional traffic on the network (due to performance impacts).	412
	<b>Coal spillage</b>	Recovers the cost of coal spillage from freight	3

<sup>2</sup> Schedule 8 is designed to compensate train operators for lost revenue over time due to unplanned service disruption.

	<b>charge (CSC)</b>	operators transporting coal. Unlikely to incentivise reduction in coal spillage as this is charged based on transporting coal, rather than spilling coal.	
	<b>Station long term charge (SLTC)</b>	Recovers station building and civils maintenance, repair and renewal costs; and station information and security systems (SISS) costs.	159
	<b>Fixed track access charge (FTAC)</b>	Determined on the basis of Network Rail's revenue requirement after taking into account other charges income and other single till income.	440 <sup>3</sup>
	<b>Freight-only line (FOL) charge</b>	Recovers fixed costs of freight only lines (but levied uniformly across the network). In CP5 it was levied only on coal for the electricity supply industry (ESI), spent nuclear fuel, and iron ore freight market segments.	4
	<b>Freight specific charge (FSC)</b>	Recovers 'freight avoidable costs' - the costs that would be foregone if freight services were to no longer use the network. In CP5 it was levied only on the ESI coal, spent nuclear fuel and iron ore freight market segments.	0 for the first two years of CP5 then the charge rate increasing to 20%, 60% and 100% of the full charge rate over the last three years of CP5
<b>Incentive mechanisms</b>	<b>Volume incentive</b>	Encourages Network Rail to grow passengers and freight traffic over the control period beyond forecast levels. Should encourage Network Rail to accommodate more traffic on the network, and to help grow passenger revenue.	10

<sup>3</sup> This is the figure after accounting for the lump-sum Network Grant payment from the governments to Network Rail (£4,164m in the first year of CP5).

<b>Route-level efficiency benefit sharing mechanism (REBS)</b>	<p>Allows efficiency gains and losses in Network Rail's costs to be shared between Network Rail and train operators which opt into the scheme.</p> <p>Should encourage train operators to work with Network Rail to reduce infrastructure costs at the route level.</p>	<p>Network Rail's assessment of the amounts payable under the REBS mechanism for 2014-15 has not yet been finalised.</p>
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3. Table 2 sets out the current structure of charges and sets out which train operators are required to pay each charge. It also explains which charges recover fixed costs and are therefore in scope of the infrastructure costs package and which charges recover short-run variable costs and are therefore in scope of the package of improvements to short-run variable charges.

**Table 2: CP5 structure of charges and its application to train operators**

	Recovery of fixed costs			Recovery of short-run variable costs				
	FTAC	FOL charge	FSC	VUC	EAUC	EC4T	CSC	CC
Franchised Passenger Operators	Yes			Yes	Yes	Yes		Yes
Open Access Passenger Operators				Yes	Yes	Yes		Yes
Freight Operators		Yes (segments)	Yes (segments)	Yes	Yes	Yes	Yes (only those carrying coal)	Yes

# Annex B – Gap analysis

1. This annex provides an overview of the analysis undertaken as part of the structure of charges review to assess how far the existing charging structure is from meeting our charging objectives – we refer to this as gap analysis.
2. This annex sets out the key four themes identified through the gap analysis and summarises the evidence used.

## Purpose of the gap analysis

3. As part of the structure of charges review, we carried out a gap analysis to gain an understanding of the difference between the impact of the existing charging structure (more information on this can be found in Annex A of the consultation document) and our objectives (published in the [December 2014 letter to the Rail Delivery Group](#)) for the future charging structure. The purpose of the gap analysis was not to identify specific improvements to the existing charging structure but rather to establish the overall areas where the structure of charges falls short of our objectives.
4. The outcome of the gap analysis has been used to:
  - consider the extent to which the existing structure of charges needs to be reviewed; and
  - provide a helpful framework for developing our options analysis by assessing how well each option helps to reduce any of the identified gaps.

## Method and outcomes of our gap analysis

5. Our gap analysis was carried out in three steps:
  - **Step 1:** A detailed, desk based exercise to gather evidence about how our existing charges perform against our objectives.
  - **Step 2:** Building on step 1, we identified four themes that summarise the gaps between our current charges and our aims and objectives.
  - **Step 3:** Consideration of the relative importance of these different gaps under different states of the world<sup>4</sup> – and whether they become more or less important.

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<sup>4</sup> States of the world were developed by RDG as part of their own review of charges. A detailed overview of this work can be found on RDG's [website](#).

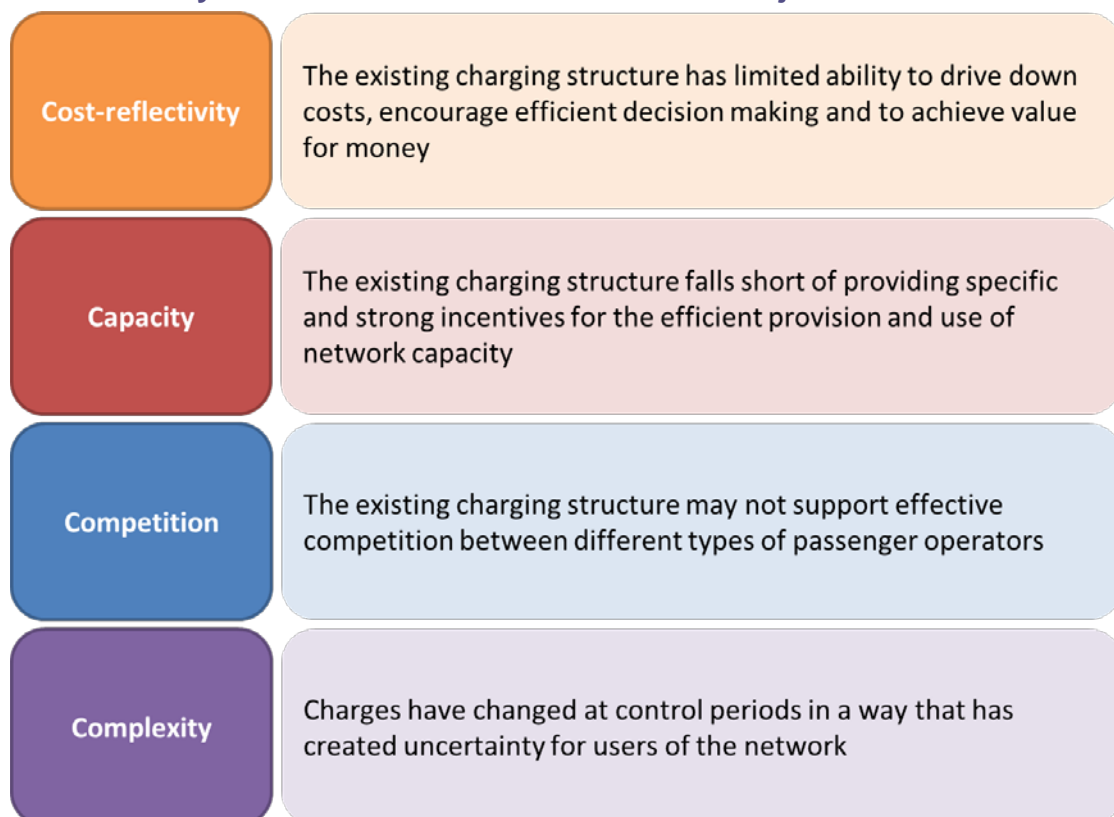
## Step 1

6. The evidence gathering exercise covered each of the existing charges, reflecting that the available evidence mostly relates to individual charges rather than the current charging structure as a whole.
7. We considered evidence from various sources, specifically:
  - Documentation feeding into the design of the existing charges such as PR13 final determination and previous consultations that sought stakeholder views on individual charges and related issues.
  - Evidence from 2014 report by Credo for ORR, "[Evidence gathering on the effectiveness of PR08's incentives regime](#)" (2014 Credo report).
  - RDG's assessment of the current charges and incentives regime, which is published [here](#).
  - Internal workshops within ORR.

## Step 2

8. We identified that much of the evidence gathered under step 1 could be grouped into four high-level themes.

**Figure 1: Summary of identified themes with relevant objectives**



9. We recognise that these themes might not necessarily represent discrete problems with distinct solutions. However, we have found them to be a useful approach in



summarising the main gaps between our current structure of charges and our objectives, and for identifying broad sets of options.

10. We consider each of the identified gaps and the relevant evidence identified within each of these below.

#### *Cost-reflectivity*

11. We found that individual charges and the structure of charges as a whole sometimes falls short on delivering the following sub-objectives:

- Supports lower network costs<sup>5</sup> and efficient decision making.
- Improved costs reflectivity.
- Improved value for money for funders, taxpayers and users.
- Improved Network Rail accountability.

12. These objectives, if achieved for the overall structure of charges, would likely be closely related. For example, if our future structure of charges was more cost-reflective, this would provide the right signals to operators and Network Rail to make better decisions. This may lead to a reduction in network costs, thus improving value for money for stakeholders.

13. We found evidence that some charges are effectively supporting **lower network costs and efficient decision making** on the network:

- 2014 report by Credo for ORR, [“Evidence gathering on the effectiveness of PR08’s incentives regime”](#) (2014 Credo report), cites evidence of operators, ROSCOs and train manufacturers responding to the variable usage charge.
- Similarly for the electricity for traction charge, 2014 Credo report provides evidence of operators investing in eco-driving programs, considering train temperature strategies, stopping patterns and regenerative breaking.

14. However, incentives to reduce costs are not as effective as they could be. This is because charges designed to recover a significant proportion of Network Rail’s costs, namely the fixed track access charge, provide little or no incentives for train operators to help Network Rail reduce its network costs.

#### *Capacity*

15. The evidence we collected suggested that there are two distinctive concepts that arise within the capacity theme:

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<sup>5</sup> Lower network costs refer to the cost per unit of output.

1. consideration of how charges support **efficient use of network capacity**; and
2. how charges support provision of appropriate **volume and quality of network capacity**.

16. Within the current charging framework only the capacity charge and the volume incentive have a designed mechanism to influence either of these two concepts. However, they do not directly incentivise Network Rail to consider efficient volume of capacity to provide, nor to ensuring that the capacity is allocated to those who value it the most.

#### *Complexity*

17. **Predictability, stability, simplicity and transparency** of charges are principles that our charging structure should aim for. These principles enable operators to respond accurately to the signals and incentives from charges, and so can affect the likelihood that the capacity or cost-reflectivity gaps will be addressed in practice. Complexity, or even the perception of it, can reduce the overall effectiveness of the charging framework.

18. The importance of complexity of charges (actual and perceived) was also noted in the December 2014 Transport Select Committee's 'investing in the railway' enquiry which concluded that: *"The Office of Rail Regulation must consult on the track access charging regime with a view to reducing the current complexity"*.<sup>6</sup>

19. We observe regularly, in a lot of our evidence and communications from across industry, that many stakeholders do not have a good understanding of charges. For some of the cost recovery charges, such as electrification asset usage charge, this may not be a critical issue. For other charges, such as the variable usage charge, it impacts on stakeholders' ability to respond correctly to the incentives set.

#### *Competition*

20. The competition theme reflects the potential for the current charging framework to be a relevant factor that limits the potential for greater on-rail competition and, in particular, competition in the provision of passenger services between franchised operators and open access operators. In particular, the differences in charges paid by franchise and open access operators mean that, for a given service, operation through a franchise would offset a greater proportion of the costs to taxpayers of funding the network.<sup>7</sup>

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<sup>6</sup> Investing in the railway, House of Commons Transport Committee, 19<sup>th</sup> January, paragraph 60. Full report is available [here](#).

<sup>7</sup> This ignores the potential wider and indirect effects, including any that might arise from differences in performance or efficiency between different operators.

21. We consulted on options for amending our structure of charges for open access operators to allow increased competition in June 2013. The consultation proposed various options that would allow a partial relaxation of the 'not primarily abstractive' test<sup>8</sup> in return for some level of mark-up paid by the open access operator. We received many responses with a lot of support for enabling more competition, although there were mixed views on the options we proposed. Most respondents thought that this should be considered as part of this structure of charges review.

### Step 3

22. As part of our analysis we also considered the importance of identified themes under various states of the world (i.e. possible future scenarios). More information on the different states of the world can be found in Annex C of the consultation document.

23. Some of the themes, namely the **cost-reflectivity and complexity themes**, are unambiguously important under any state of the world and their importance could grow, for example, if:

- franchise protections are reduced;
- a greater proportion of costs are attributed to operators through a different funding approach; or
- there is to be more regional decision making.

24. **Capacity and competition themes** are more ambiguous in their impacts in different states of the world. On the one hand, they could become less important under an alternative state of the world where relevant parts of franchises become more highly specified. On the other hand, capacity and competition become much more important under alternative states of the world, for example, where there is:

- more on-rail competition;
- more franchise flexibility; or
- a change in the approach to the allocation of capacity.

25. However, despite this potential ambiguity we consider that any changes in charges that focus on addressing capacity and competition could be important catalysts for longer-term change. For example, they could highlight the potential benefits of wider reforms and so contribute to changes that would move us towards future states of the world that could realise additional benefits to passengers, freight users and funders, including through greater on-rail competition.

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<sup>8</sup> This test is part of the overall assessment of track access decisions. It considers the extent to which new services generate new passenger revenue, relative to the levels of revenue that is 'abstracted' from existing services.

## Annex C – States of the world

1. This annex sets out the work that has been carried out by the Rail Delivery Group (RDG) with ORR's support to develop a set of alternative states of the world (or scenarios) to consider charging and incentives framework under<sup>9</sup>. RDG defines a state of the world as the environment within which the charges and incentives regime operates. It represents elements of the rail industry that are not part of the regime, e.g. the degree of franchise protection or the extent of regional decision making.
2. Following the implementation of the charging framework for PR18, we expect that the broad structure would continue to apply beyond CP6. If it is to maintain this stability over time it will need to be robust to changes in external factors and the environment in which the new regime would operate. It is important, therefore, that we assess our proposed set of broad options under different states of the world.
3. We think that it would be optimal for our review of charges to be based on the same or similar set of states of the world as the RDG review. We see no reason why they should differ, so long as they are based on what realistically might happen in the future, have an impact of the optimal structure of charges, and are not defined by the set of outcomes that RDG members regard as being desirable. We were, therefore, actively involved in supporting RDG's work to develop the set of alternative states of the world.

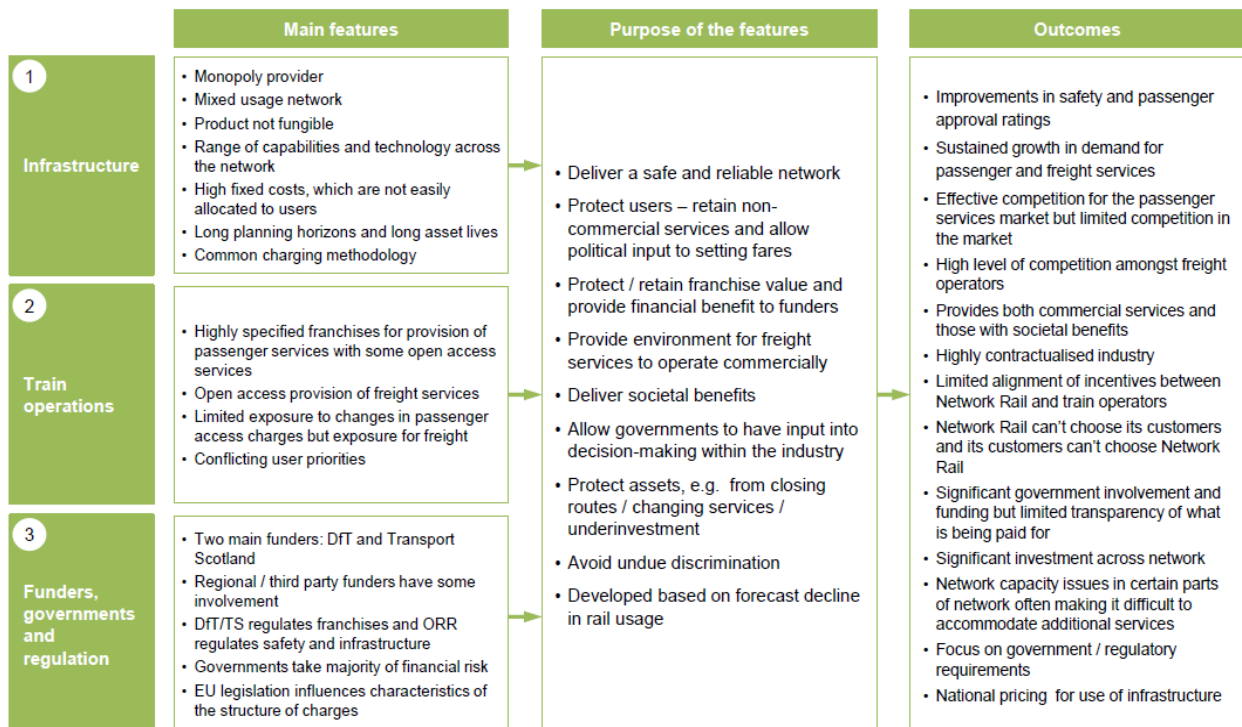
### RDG's view of the current state of the world

4. The starting point for RDG to develop alternative states of the world was to establish key characteristics of the current state of the world. This was informed by workshops run by RDG to articulate the features, purpose and outcomes of the current state of the world (these are summed up in Figure 1 below).

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<sup>9</sup> States of the World were developed by RDG as part of their own review of charges, available [here](#).

**Figure 1: RDG’s summary of the current state of the world**



**Source: RDG’s Review of Charges**

5. Elements of Figure 1 above were used to consider the range of factors that could drive changes to the current state of the world over the next 15 years. These were broadly categorised as political, economic, social, technological, legal/regulatory, and environmental. The list of factors was whittled down based on the likelihood and potential impact of each change on the structure of charges, and complementary changes were then grouped to form a set of alternative states of the world.

**Key features of RDG’s states of the world**

6. In selecting alternative states of the world, RDG followed these principles:
- more than one state of the world can co-exist on the network;
  - avoid ‘cluttering’ the alternative states of the world so that they are not overly specific; and
  - incorporate changes that are complementary, for example more regional decision making is likely to require a different approach to infrastructure funding.
7. Figure 2 below sets out the summary of RDG’s alternative states of the world. The first three are focused on different approaches to passenger service delivery, in particular the different degrees of on-rail competition, franchise protection and franchise specification. The remaining ones focus on specific changes to other parts of the GB rail industry which can be considered separately or in conjunction with other states of the world.

**Figure 2: RDG’s alternative states of the world**

Feature	Summary of current state	How will the current feature change?	Alternative states of the world						
			1. A more dynamic railway	2. On-rail comp. via flexible franchising	3. More highly specified franchises	4. Freight protection / subsidy	5. Beneficiary pays for capability	6. Change in approach to capacity allocation	7. More regional decision making
On-rail competition	Limited competition in the market for passenger rail services	Increase in on-rail competition	✓	✓					
Franchise protection	Significant protection from changes to access charges	More / less protection	✓ (less)		✓ (more)				
Franchise flexibility	Limited flexibility due to highly specified franchise requirements	More / less flexibility	✓ (more)	✓ (more)	✓ (less)				
Freight protection	Limited protection from changes in access charges but indirect subsidies	More protection and / or direct subsidy				✓			
Availability of network capacity	Some capacity issues across network but surplus capacity elsewhere	Increase in network capacity (HS2 or technology driven)						[✓]	
Approach to infrastructure funding	Funded by track access charges, 'lump sum' grants from governments and Network Rail's commercial income	Beneficiary pays for new network capability	✓				✓		✓
Approach to allocating network capacity	Administrative approach, reflecting historic rights, rather than overall benefits of use	More analytical approach to allocation, e.g. responsive to changes in demand	✓					✓	
Regional decision-making	Two main funders / specifiers (DfT and Transport Scotland), one infrastructure and safety regulator (ORR)	Greater regional decision making							✓

**Please note:** the symbol [✓] reflects that we will consider Alternative State of the World 6 with, and without, increased network capacity

**Source: RDG’s Review of Charges**

8. Below we set out the key features of RDG’s alternative states of the world.

9. State of the world 1 - *A more dynamic railway:*

- **More on-rail competition** between passenger operators.
- **Low franchise protection** from changes in access charges.
- **Increased franchise flexibility** as a result of less highly specified franchise agreements.
- **‘Beneficiary pays’** approach to fixed costs. For example, governments no longer provide funding of infrastructure via the lump sum Network Grant and instead direct funding to specific projects.
- Decisions on **allocation of network capacity** are no longer based largely around the rights reflected in the existing capacity and instead reflect other factors, such as the overall benefit of use.

10. State of the world 2 – *On-rail competition via more flexible franchising:*

- **More on-rail competition** between franchised passenger operators or from more open access as a result of fewer services being franchised on certain parts of the network.
- **Increased franchised flexibility** as a result of less highly specified franchise agreements.

11. State of the world 3 – *More highly specified franchises:*

- **Greater franchise protection** from changes in charges.

- **Reduced franchised flexibility** as a result of more highly specified franchise agreements.

12. State of the world 4 – *Freight protection/subsidy*:

- **More financial protection** from changes in charges or a **direct subsidy** for freight operators from governments to reflect the positive externalities/societal benefits of freight.

13. State of the world 5 – *Beneficiary pays for network capability*:

- Governments no longer provide funding of infrastructure via the lump sum Network Grant and instead **direct funding to specific projects** or to Network Rail but for **specific elements of existing capacity**.

14. State of the world 6 – *Change in approach to allocation of network capacity*:

- Decisions on **allocation of network capacity** are no longer based largely around the rights reflected in the existing capacity and instead reflect other factors, such as the overall benefit of use.
- This state of the world should be considered under **two scenarios** – a) current network capacity/capability remains; and b) a significant increase in capacity resulting from a major enhancements project such as HS2.

15. State of the world 7 – *Regional decision making*:

- More responsibility for **decision making (funding, policy, operational) at a regional level**.
- **‘Beneficiary pays’** approach to fixed costs. For example, governments no longer provide funding of infrastructure via the lump sum Network Grant and instead direct funding to specific projects.

### **Our view on RDG’s states of the world**

16. We consider the approach RDG has taken in developing the alternative states of the world to be a sensible one. Although RDG does not represent the whole of rail industry, we view RDG’s states of the world as a realistic reflection of the types of factors external to the charges framework that might change in the future.<sup>10</sup>

17. We have used these states of the world when carrying out our gap analysis (see Annex B – Gap analysis) and also referred to them in our assessment criteria used to carry out impact assessment of our proposed charging options. RDG’s states of the world do not

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<sup>10</sup> We have noted the comments made by the industry stakeholders during our July industry workshop about how the Shaw Review into the structure and funding of Network Rail may require a separate ‘state of the world’. At this stage of developing packages, we do not think this requires a separate assessment but we will consider further as we develop and assess specific options.

define the extent that each of their features change, e.g. the extent of franchise protection decrease is not specified. This gives us the flexibility to vary these features as we feel appropriate for our analysis.

18. When using alternative states of the world for our analysis, we adopted a few deviations from RDG's work:

- *Current state of the world* - we think that the outcomes column of the current state of the world is too subjective and is not necessary in order to assess our options within the current state of the world (see Figure 1 above). We therefore do not intend to use it in our assessment of the options.
- *Alternative states of the world* - under regional decision making, we also consider greater route level decision making within Network Rail. We also make a distinction between freight protection and freight subsidy because they could both have very different impacts on the appropriate structure of charges.



# Annex D – Assessment criteria

1. This annex focuses on the criteria we used to assess the main options we consider in this consultation, and as reflected in the draft impact assessments for each of the main options.
2. This paper is structured as follows:
  - the purpose of the criteria;
  - the sources used and how these map onto an assessment framework; and
  - the detailed assessment criteria.

## Purpose of the criteria

3. The purpose of developing assessment criteria is to support a consistent, objective approach for assessing the various future charging options. This approach has helped us to:
  - measure how successful each option is at meeting our objectives for the future structure of charges;
  - assess how well each option addresses any of the gaps we have identified (more information on the gap analysis can be found in Annex B of the consultation document); and
  - ensure we have not missed any impacts that we should have included in our analysis.
4. Any change to the existing structure of charges will have associated costs and benefits. The purpose of the impact assessment is to use these criteria to ensure we identify and understand relevant costs and benefits to ensure the adoption of proportionate changes to charges. In the absence of sound assessment criteria, it is easy to miss elements of costs and benefits that should have been included in the assessment. For example, when talking about costs it is easy to concentrate on direct costs of implementing a certain option (costs of collecting more granular data, for example) and not give enough consideration to the possible indirect costs (freight's reduced ability to compete with roads, for example).

## Sources of the criteria

5. When developing our assessment criteria we considered a wide range of legal and policy aspects.

6. From a policy perspective, we considered:

- **Structure of charges objectives**<sup>11</sup> - these were developed using our statutory duties, our view of the problems that charges might help to solve, and the Rail Delivery Group's (RDG's) published 'vision' for the future charging structure. We consider that these objectives form the backbone of our future structure of charges, and therefore each option should be assessed based on how successful each option is at meeting our objectives.
- **Gap analysis** - comparing our existing charging structure to the objectives for charges, we identified certain gaps which we have grouped into four main themes: cost-reflectivity; capacity; complexity; and competition. More information on this analysis can be found in Annex B of the consultation document. To ensure that the future structure of charges is an improvement, we think it is important to assess to what extent (if any) each option addresses the identified gaps.
- **States of the world** – the future structure of charges must be appropriate for a range of different future scenarios or states of the world.<sup>12</sup> As there remains uncertainty around what scenario we are mostly likely to be in, our assessment must consider how the assessment carried out would vary under the different states of the world and how important this variation is likely to be.
- **ORR's six strategic objectives** – any future regulation and policy should reflect ORR's six strategic objectives.<sup>13</sup>
- **The governments' principles of regulation** - the principles around ensuring that any regulation is proportionate and should not impose unnecessary burdens are very important for our policy making.<sup>14</sup>
- **Specific impact tests from government guidance** - any full assessment would pick up all impacts but to ensure we have not missed anything important, we considered the specific impact assessment groups that have been identified by central government.

7. From a legal perspective, we operate within the framework set by UK and European legislation. In order to ensure compliance with legislation that applies to ORR, we have taken the following considerations into account in establishing our criteria :

- **Statutory duties** - our functions are defined by statute, and we must exercise those in accordance with our statutory duties in Section 4 of the Railways Act

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<sup>11</sup> We published our proposed objectives for the structure of charges in a letter to RDG in December 2014 [here](#).

<sup>12</sup> States of the world were developed by RDG as part of its own review of charges and can be found on its [website](#).

<sup>13</sup> These can be found on ORR [website](#) and reflect our statutory remit and objectives.

<sup>14</sup> These principles are also incorporated into our 6<sup>th</sup> strategic objective – Be a high performing regulator.

1993. Our criteria for assessing our options must therefore use our statutory duties as a starting point.

- **Regulatory Enforcement and Sanctions Act 2008** - we are required to keep the carrying out of our functions under review to ensure that regulation does not involve: a) the imposition of burdens which are unnecessary; or b) the maintenance of burdens which have become unnecessary.
- **Equality Act 2010** - we have an equalities duty under Section 149 which requires us to have due regard, in the exercise of our functions, to the need to eliminate conduct that is prohibited by the Act. Such conduct includes discrimination, harassment and victimisation in relation to race, age, gender etc.
- **The Railways Infrastructure (Access and Management) Regulations 2005**<sup>15</sup> - we have a formal role in ensuring Network Rail's charges are compliant with these regulations (both as currently and prospectively apply), which provide various constraints on charges, including having regard to relevant case law on charging (both in Europe and in the UK).
- **Directive 2012/34/EU (recast)** – this legislation included provision for an implementing act setting out the modalities for the calculation of the cost that is directly incurred as a result of operating trains. This implementing act has been voted on by member states. It includes high level principles for charges but also more specifically, certain factors that cannot be recovered through variable charges.

## Assessment criteria

8. The following assessment criteria map the detail within the above legal and policy sources to a manageable number of headings to provide a framework for our impact assessments. These headings are:
  - A. Impact on key charging objectives;
  - B. Wider policy impacts;
  - C. Potential for the option to address a gap;
  - D. Wider external impacts;
  - E. Legal impacts; and
  - F. Alternative states of the world.

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<sup>15</sup> These are currently are being amended to transpose the European Directive 2012/34 of 21 November 2012.

## A. Impact on key charging objectives

9. This covers the charging objectives, the ORR strategic objectives<sup>16</sup>, and ORR's statutory duties. In assessing a potential option against this criterion, the following considerations might be relevant in respect of different types of industry stakeholders:
- **For each type of operator** – the cost-reflectivity of the new rate, the likely impact on the direction and magnitude of their charges if behaviour remains the same, the effect on efficiency for demand and use of the network, how well incentives are aligned between operators and Network Rail and if there is an effect on customers, rolling stock companies and the wider supply chain.
  - **For funders/taxpayers** – whether the new charge encourages more efficient decision making to support lower network costs and if this will result in improved value for money for funders and taxpayers.
  - **For Network Rail** – if the proposed charge will provide Network Rail with more cost-reflective rates for permitting a service, how its funding would change if it continued to supply the same capacity and how it will impact its efficiency in terms of short run provision and long run investment. Furthermore, the proportion of Network Rail's income from charges and how much of this income will be linked to outputs needs to be looked at; as well as if the option allows Network Rail to recover its full costs and the impact this will have on Network Rail's accountability.

## B. Wider policy impacts

10. This criterion is based on our consideration of the gap analysis, in particular the 'complexity' and the 'competition' gaps. Other considerations included:
- the ORR statutory duties;
  - the objective to meet the charging principles;
  - the Regulatory Enforcement and Sanctions Act 2008 which requires us to ensure regulation does not involve the maintenance or imposition of burdens which are unnecessary; and
  - the ORR strategic objectives to support a better service for customers and to promote an increasingly dynamic, commercially sustainable sector and to be a high-performing regulator.
11. In assessing an option against this criterion the following considerations might be relevant :

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<sup>16</sup> In particular, our objectives to support a better service for customers and to secure value for money from the railway, for users and funders and to promote an increasingly dynamic and commercially sustainable sector.

- **Policy Impacts** - if there are any constraints that will prevent the intended incentive effects working as designed e.g. due to franchise protections or if the charge will add to complexity and therefore affect a stakeholder's ability to correctly respond; if small or micro businesses will be impacted; the impact on the transparency, predictability and stability of charges; if there is an impact on the future planning of those providing the railway; and if this option complements other options.
- **Transitional Impacts** - the costs to the industry of familiarising themselves with the changes, and how this could be mitigated to lessen any negative implementation impacts.
- **Practicality Issues** – if there are burdensome information requirements; if the calculations involved are very complex and theoretical; if stakeholders will understand any potential change; and the amount of work and resources that are required to develop the charge.
- **Effect on competition** - if the charge has an effect on the number or range of suppliers; if it limits the ability of suppliers to compete or compete vigorously; and if it affects freight's ability to compete with road.

### C. Potential for the option to address a gap

12. We have identified this criterion based on the results of our gap analysis. It is intended to enable us to consider how well an option addresses any of the four key themes: cost-reflectivity; capacity; complexity; and competition.

### D. Wider external impacts

13. This criterion is based on the equalities duty, consideration of specific impacts on the environment, rural proofing<sup>17</sup> and sustainable development as well as the ORR statutory duties. When assessing an option against this criterion, the following considerations might be relevant:

- the option has an impact on the funds available to the Secretary of State for the purposes of his functions in relation to rail, if there are impacts on users or potential users of services;
- the Secretary of State or Scottish Ministers have provided any advice that may have an impact;
- there would be any safety concerns arising from the particular option;

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<sup>17</sup> Rural proofing assessments are used to ensure we identify the needs and interests of rural communities and businesses. Full guidance is provided by Department for Environment, Food and Rural Affairs and can be found [here](#).

- there are positive or negative impact on the environment, rural proofing or sustainable development; and
- there are any impacts on the equalities groups as described in the Equality Act 2010.

#### **E. Legal impacts**

14. This criterion reflects the fact that access charges must be lawful. In assessing the option against this criterion the following points might be relevant:

- if the charging option creates any other impacts that arise from our Section 4 duties not already covered elsewhere in the criteria;
- if the charge complies with the latest version of the Access and Management Regulations 2005 including the amendments that will be made to these to reflect Directive 2012/34 and the Commission's Implementing Regulation on the modalities for the cost that is directly incurred; and
- if the charge complies with any relevant case law.

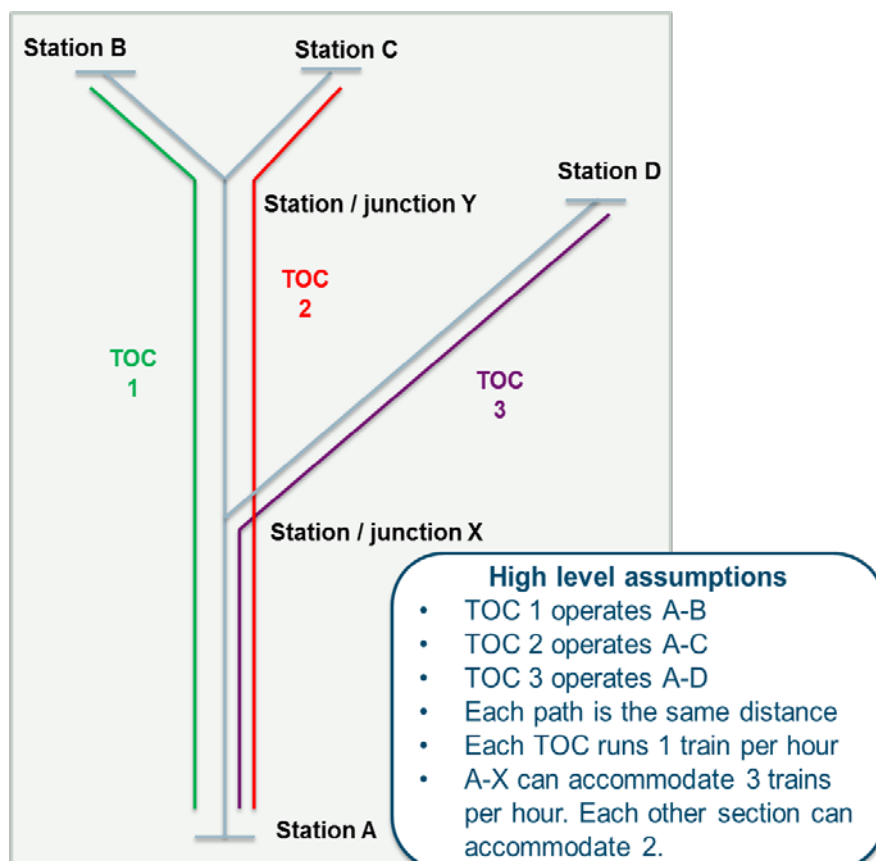
#### **F. Alternative states of the world**

15. This criterion reflects RDG's alternative states of the world (more information on this can be found in [Annex C](#) of the consultation document) and is designed to assess if the impact of the particular charging option changes under different states of the world that we will might find ourselves in.

## Annex E – Stylised example of charges set on value or cost

25. We have developed the following example to illustrate the concepts behind the infrastructure costs and value-based capacity packages. We use the example of geographical disaggregation of cost, but the general principles would apply to other forms of changes to better reflect cost/value in charges.
26. Figure 1 provides a simplified representation of a route, and how each service/train operating company (TOC) operates on this route.

**Figure 1: Illustrative example of the infrastructure cost package and the value-based capacity package**



27. Figure 2 sets out the remaining assumptions required for this example, including the costs for each route section and how many paths are available. The numbers used have been chosen for simplicity of explanation (i.e. they bear no relationship to actual network costs).

**Figure 2: Assumed annual costs of each route section**

Route section	Costs	Spare paths
<b>A-X</b>	£6,000	0
<b>X-Y</b>	£3,000	0
<b>Y-B</b>	£1,000	1
<b>Y-C</b>	£1,000	1
<b>X-D</b>	£2,000	1
<b>Station / junction X</b>	£12,000	N/A
<b>Station / junction Y</b>	£8,000	N/A
<b>Station A</b>	£3,000	N/A
<b>Station B</b>	£1,000	N/A
<b>Station C</b>	£1,000	N/A
<b>Station D</b>	£1,000	N/A
<b>Common costs</b>	£21,000	N/A

28. In this example, we have assumed:

- a) over time the full costs of building and maintaining infrastructure on track sections carrying more traffic are higher than on track sections with less traffic.
- b) all the TOCs run the same number of trains over the same distance.

29. Table 1 illustrates that under the current fixed track access charge (FTAC) methodology, each operator would pay the same charge: £20,000. This is because fixed costs are estimated at a route level, and then allocated to operators based on simple metrics (primarily train miles). Common costs, which are those that do not vary with traffic, such as an IT system, would be allocated in the same way.

**Table 1: Illustration of charges under the current regime (counterfactual)**

	TOC 1	TOC 2	TOC 3
Traffic related fixed costs	£13,000	£13,000	£13,000
Common costs	£7,000	£7,000	£7,000
<b>Total</b>	<b>£20,000</b>	<b>£20,000</b>	<b>£20,000</b>



30. Under the infrastructure cost package, costs would be allocated to TOCs on the basis of their use of each part of the network. In this example, TOC 1 would be incurring costs for: one third of the costs for stations A and X, one third of the route section between A and X; etc. There are many options for how common costs could be allocated but for simplicity we could continue to use the same approach as for the counterfactual (i.e. train miles).
31. Table 2 shows the difference between our current charging structure and the outcome if fixed costs were estimated and allocated to individual route sections (i.e at a more disaggregated level).

**Table 2: Illustration of potential cost allocation under the infrastructure cost package**

	TOC 1	TOC 2	TOC 3
Counterfactual	£20,000	£20,000	£20,000
Costs estimated at a route section level	£21,500	£21,500	£17,000
<b>Change in cost estimate</b>	<b>+£1,500</b>	<b>+£1,500</b>	<b>-£3,000</b>

32. A comparison between Table 1 & 2 illustrates some of the potential effects of better cost reflectivity:
- TOCs would be allocated the costs of the parts of the network they actually use.** In this example, better cost allocation means TOC 1 & 2 face the (higher) cost of the network they use, and TOC 3 would benefit from using a less costly part of the network.
  - Improved understanding of costs and ability to reduce them.** This information would improve our understanding of which services cause costs to be incurred. If included in charges, TOCs 1 and 2 would retain the benefits from any cost reductions at station/junction Y, rather than having to share some of these costs savings with TOC 3.
  - Improved capacity use.** Improved information about costs allows a better understanding of whether the overall benefits of each of these services are greater than the costs. Greater cost reflectivity might, for example, reveal that benefits (to society) from TOC1's service do not cover the full cost. Whereas, it might reveal that benefits from TOC3's services exceed costs significantly. If charges reflect these cost differences, incentives to expand services and/or for open access entry would better reflect the cost of accommodating these services.
33. Turning to the value-based capacity package. This could enable us to allocate costs based on the value of train paths on different route sections. Where demand for capacity exceeds what is available, a charge could reflect the value that operators generate by using those track sections.

34. To do this an approximation of this value is needed. This could be complex to calculate, as the value should reflect both the commercial value of the service and other benefits that are not reflected in ticket prices or freight users' ability to pay. For example, rail services can reduce road congestion or overcrowding on other trains. A number of approaches could be used to estimate this value, which are discussed further in Chapter 5 of the consultation document.
35. In our worked example, there are no spare paths on track sections A-X and X-Y. Table 3 shows illustrative value-based charges on these sections (with this charge only being levied where there is a lack of spare capacity).

**Table 3: Indicative value-based charges**

Track section	Spare paths	Charge based on value of capacity (per train, per hour)
A-X	0	£5,000
X-Y	0	£2,500
Y-B	1	N/A
Y-C	1	N/A
X-D	1	N/A

36. Under a value-based approach, TOC1 and TOC2 would be faced with a per hour charge of £5,000 each per path to continue using track section A-X, and a charge of £2,500 each per path to continue using track section X-Y. TOC3 would be faced with an hourly charge of £5,000 per path to continue using section A-X.
37. Table 4 compares total charges paid by the three operators under the counterfactual above and charges paid after the introduction of the value-based capacity charges.

**Table 4: Change in charges between the counterfactual and value-based charges**

	TOC 1	TOC 2	TOC 3
<b>Charges in counterfactual scenario</b>	<b>£20,000</b>	<b>£20,000</b>	<b>£20,000</b>
Value based capacity charge (A)	£7,500	£7,500	£5,000
Remaining fixed costs allocated as in the counterfactual scenario (B)	£13,333	£13,333	£13,333
<b>Total charge under value based capacity option (A+B)</b>	<b>£20,833</b>	<b>£20,833</b>	<b>£18,333</b>
<i>Change in total charges</i>	<i>+£833</i>	<i>+£833</i>	<i>-£1,666</i>

38. If the income recovered from value-based capacity charges does not fully cover all fixed costs, any remaining infrastructure costs would need to be allocated to operators in some way. There are different options for how this could be done. For costs not recovered by the value-based capacity charge, the remaining fixed costs are allocated in the same way as in the counterfactual above (Table 1).

39. Value-based capacity charges would ensure that operators continue to use these parts of the network only if their services are generating at least as much value as the level that the charge is set at – i.e. it is ensuring that the highest value services are priced onto the network. TOC 3 faces higher charges in the value-based capacity option compared with the infrastructure cost option due to its use of congested parts of the network, despite it generally using parts of the network that have a lower cost.
40. Paying higher charges to use route sections which are congested could provide incentives for operators to, for example, retime, reroute or withdraw services. Alternatively, this information could be used to modify franchise specifications. In this case, value-based charges could incentivise TOC 3 changing its service to stop at Station X rather than continuing onto track section A-X.
41. In both examples charges increase on the more costly/congested parts of the network. This is because we have chosen numbers that have a higher cost where there is more intensive use. This may be reasonable when compared to the current structure of charges. Heavily congested infrastructure is likely to face higher costs in total. Where costs are currently only disaggregated at a route level, and don't fully reflect cost drivers relating to service characteristics, this is likely to spread the higher costs of this congested section over a larger area and therefore dilute them. Greater cost reflectivity of these costs would mean that those operators using the more congested section would directly pay for the costs pertaining to that section. This illustrates that – if costs are higher where congestion and value is higher – the infrastructure costs package could move charges towards better reflecting the value of use.
42. In either case, there may be benefits to obtaining improved information about cost and value, without necessarily passing this information in to charges.

# Annex F – Glossary

We have tried to keep the language in this consultation simple but it is necessary to use some technical terms in places. These have been explained in context when we use them in the consultation document and the accompanying annexes/supporting documents. However, this glossary should provide a useful reference document.

## Common costs

Some costs will not be linked to or directly attributable (cost attribution and cost drivers are defined in this glossary) to specific services on the network. That is, these costs will not be affected by changes in the level of activity on the network. We refer to these as ‘common costs’.

## Cost allocation

While cost attribution (defined in this glossary) refers to identifying the factors that drive costs, cost allocation is how we decide to allocate these costs to different users. The appropriate way to allocate different cost categories will depend on the results of a cost attribution exercise plus some other factors. For example, if attribution exercises are unable to link a cost with a specific driver of these costs, we may have to use another method to allocate these costs to users. Even if costs can be directly attributed to a train service/operator, we may want to consider which metric to use for example to allocate the charge (e.g. a lump sum charge for each year of the control period regardless of operator behaviour or a charge based on a metric the operator can control to some extent such as per train km). The [impact assessment on the infrastructure costs package](#) provides more information on what we mean by cost allocation.

## Cost attribution and cost drivers

The attribution of costs is the process of identifying the factors that are causing the costs to be incurred (i.e. the cost-drivers). Costs are attributable to a use if changes in that activity lead (immediately or over time) to changes in the overall level of cost. For example, the cost of electricity infrastructure on a line could be attributed to any electric rolling stock, but not to those that are diesel powered. And signalling infrastructure provides use for particular geographic areas, and so could be attributed to those areas. The [impact assessment on the infrastructure costs package](#) provides more information on what we mean by cost attribution.

## Cost-reflectivity

In this consultation, cost-reflectivity describes a situation where the charging structure allows costs to be attributed/allocated to those who cause the cost to be incurred. Cost-reflectivity has desirable qualities. For example, if users face the costs they impose, this

will provide them with the appropriate incentives to reduce those costs, as this would subsequently feed into reduced charges.

The cost-reflectivity gap identifies where the existing charging structure has limited ability to drive down costs, encourage efficient decision making and to achieve value for money.

### **Counterfactual**

The counterfactual is the scenario which we are comparing the packages against. For the purposes of this assessment, we define the counterfactual as a 'do nothing' scenario. This means no substantial changes to the structure of charges for access to Network Rail's network, as well as no substantial changes to contractual, funding and regulatory arrangements in the wider rail industry (i.e. the current 'state of the world'). The current state of the world is discussed in more detail in Annex C.

### **Disaggregation**

The consultation includes several references to the potential for geographic disaggregation of costs and charges. Geographic disaggregation is a generic term which refers to improving cost-reflectivity (defined in this glossary) by taking into account the extent that costs can vary significantly by location. If users face the costs they impose on the network more directly, rather than an average of costs over a wider geographical region, their charges will be more cost-reflective and they will have a greater incentive to reduce the costs imposed.

Disaggregation could also be considered in terms of time of day. Costs may be higher in peak times than off-peak for example. Making charges more cost-reflective at certain times of the day could incentivise operators to reduce the costs they impose by travelling at quieter times if they can be flexible in terms of timing for their services.

### **Electric current for traction charge (EC4T)**

The Electric current for traction charge (EC4T) allows Network Rail to recover the vast majority of its traction electricity costs from train operators who require electricity to run their electrified train services. More information can be found in Annex A.

### **Fixed costs/charges**

In this consultation, we refer to fixed costs as all those costs which are not short-run variable costs (defined in this glossary). These costs vary over longer periods of time or over larger increments rather than with every train service. Where these costs are reflected in charges, we refer to these charges as fixed charges for the purpose of this consultation. Annex A includes the current charges that fit into this category.

### **Gap analysis**

A gap analysis was undertaken to assess how far the existing charging structure is from meeting our charging objectives. Annex B sets out the four key themes identified through

the gap analysis (cost-reflectivity, capacity, complexity and competition) and summarises the evidence used.

### **Infrastructure costs package**

This is a package of options aimed at developing a better understanding of the drivers of Network Rail's fixed costs (fixed costs are defined in this glossary). This package has two sub-options. The first is to gain a better understanding about the drivers of fixed costs of the network and the second is to pass this improved information through to charges. This package could lead to new charges to recover Network Rail's fixed costs based on this improved information. We are proposing to prioritise further development of this package for PR18. A full draft impact assessment on the infrastructure costs package can be found [here](#).

### **Network grant**

A proportion of Network Rail's income in the past has been paid directly by DfT and Transport Scotland in the form of network grants. Over CP5, more than 60% of Network Rail's income is forecast to come from the network grant.

### **Rail Delivery Group (RDG)**

The Rail Delivery Group (RDG) is an association, established in June 2011, of Great Britain's major passenger and freight train operator groups and Network Rail to lead and enable improvements in the railway.

RDG set up its own review of charges and has been considering possible future reforms to Network Rail's current charging structure. This work has now concluded and is published [here](#).

### **Short-run marginal costs/charges**

In this consultation, we use the term short-run variable costs (defined in this glossary) in most cases. In some instances we need to be more precise and refer to short-run marginal costs. Short-run marginal costs are the costs directly incurred by Network Rail as a result of an extra train joining the network (after all the other trains are already running). In most cases, this would not give you the same result as if you took the costs directly incurred from all the trains on the network and divided that by the numbers of trains. In the latter case, we would get an average rather than a marginal cost estimate.

### **Short-run variable costs/charges**

Every train service causes some costs to be directly incurred on the network. For example, every train service causes some wear and tear to the track and also contributes to some accelerated need for renewals. Any cost that is directly incurred as a result of operating the train can be considered a short-run variable cost, for the purpose of this consultation. Passing these costs in to charges, gives us short-run variable charges. Annex A includes the current charges that fit into this category. The package of improvements to short-run

variable charges discusses improving these charges for PR18. This glossary also includes a definition for short-run marginal costs/charges which is a more precise term.

### **Value of capacity**

Throughout this consultation we often refer to the 'value of capacity'. When doing so we are using the meaning assigned in economics to the concept of value. Namely, value describes the benefits provided by a good or service.

In the case of rail capacity, value is often used to refer to the revenue an operator can secure (mostly through fares) as a result of running a particular service that uses a specific unit of capacity (however this may be defined). This is the commercial value of a service. However, when referring to the value of services and capacity in this consultation, this includes the benefits to users and society that are generated but which are not included in the price of the ticket paid by passengers or the prices paid by freight users. We call this the social value of a service. Such benefits include the reduction in CO2 emissions as a result of passengers or goods not travelling on the roads (modal shift), reduction in crowding on other rail services, as well as benefits to the economy resulting from better connections between different cities/ parts of the country (this list is not exhaustive). The value of capacity is the highest value that can be achieved by services using that capacity. Therefore, when referring to the value of capacity in this consultation, we are talking about both the commercial and the social value of rail capacity.

### **Value-based capacity package**

This is a package of options that would improve our understanding of the value of capacity (defined in this glossary) of different parts of the network to users and society. This package has two sub-options. The first is to understand more about the relative value of network capacity and the second is to pass this improved information through to charges. Charges would be higher where the network is of higher value, such as where the capacity available does not meet demand.

For the reasons set out in Chapter 3 of the consultation document and in this chapter, we are proposing to stop development of this package of charging options for PR18. A full draft impact assessment on the value-based capacity package can be found [here](#).

### **Variable usage charge (VUC)**

The VUC is set to equal the operating, maintenance and renewal costs that vary with traffic. The VUC is differentiated by vehicle class. This differentiation reflects the significant variation in infrastructure wear and tear costs associated with different vehicle characteristics, for example vehicle operating speed and axle weight. In the case of freight, the charge is further disaggregated by commodity type, reflecting the different axle loads associated with different commodities. The rates are averaged across the network as a whole, resulting in a single Great Britain-wide price for each permutation of vehicle type and commodity.



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