



PR18 consultation on charges recovering fixed network costs

28 September 2017

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Executive summary

Access charges are important as they affect the decisions that Network Rail, train operators and funders make about use of the rail network. They play an important role in improving outcomes for passengers, freight customers and taxpayers.

As part of the 2018 periodic review (PR18) of Network Rail, we are reviewing the way in which the charges operators pay to access the rail network are calculated. This work aims to improve decisions that Network Rail, train operators and funders make.

As part of our review of charges, in June 2017 we published a letter concluding on elements of Network Rail's charging framework for control period 6 (CP6). This included a number of changes to simplify the charging framework, such as removing the capacity charge and coal spillage charge, and merging the two existing freight mark-ups.

We have also decided to prioritise reforms to charges that recover some of the fixed costs of running the rail network, i.e. those costs that do not vary with use in the short term. The aims of these reforms are to:

- improve transparency around the fixed costs of the network, and their drivers;
- ensure that all operators make a contribution towards fixed network costs, to the extent that they are able to; and
- promote further competition in the provision of passenger services.

Currently, fixed network costs are met through a mix of direct grant from governments (circa £4bn / year), mark-ups paid by freight services carrying specific commodities (circa £2m / year), and fixed charges paid by franchised passenger operators (£500m / year). There are also charges which operators pay for use of stations on the network, which cover both variable and fixed costs.

In our June 2017 charges and incentives conclusions letter, we confirmed that we would continue to work towards levying charges to recover fixed network costs on all operators, subject to a market-can-bear test.

The purpose of this consultation is to continue progress on developing our approach to levying these charges, which we have called **infrastructure cost charges**. This approach involves identifying a number of different market segments and then assessing the extent to which each segment can bear infrastructure cost charges. In this document we are setting out emerging proposals on the market segmentation for freight and passenger services respectively, based on technical analysis undertaken by our consultants.

For freight, we are proposing to retain the existing approach to market segmentation, without defining further market segments for any commodity. We are proposing to continue defining freight trains carrying electricity supply industry (ESI) coal, iron ore and spent

nuclear fuel, as market segments able to bear infrastructure cost charges in CP6. We are proposing to also define trains carrying biomass for the electricity supply industry as a market segment able to bear infrastructure cost charges in CP6.

For passenger services, we are setting out emerging findings from our consultants' work on the types of services that appear to have the ability to pay infrastructure cost charges, namely intercity and long-distance commuter services. These emerging results could inform a market segmentation for passenger services, to be consulted on at the time of our draft determination. We are also setting out proposals around the approach to levying charges on passenger operators.

We will continue to work with stakeholders as we develop final proposals on passenger and freight market segmentation, the level of infrastructure cost charges and their design, to be consulted on as part of our draft determination in June 2018.

Please submit your responses to this consultation by 30 November 2017.

Introduction

1. As part of the 2018 periodic review (PR18) of Network Rail, we are reviewing the way in which the charges operators pay to access the rail network are calculated. This work aims to improve decisions that Network Rail, train operators and funders make, and will play an important role in producing better outcomes for passengers, freight customers and taxpayers.
2. One area where there is a strong case for reform is in terms of the level of transparency around fixed network costs, and how these costs are recovered from operators.
3. On 29 June 2017, we published a letter concluding on the proposals set out in our December 2016 charges and incentives consultation.¹ This letter outlined that we will continue to work towards levying charges to recover fixed network costs² from all operators, including open access operators (OAOs). This would be subject to a market-can-bear test and potentially based on an updated cost allocation methodology Network Rail is developing.
4. Applying charges to recover fixed costs from all operators has the potential to improve the information available and incentives on Network Rail, operators, funders when making decisions about use of the network. It also builds on the findings and recommendations made by the Competition and Markets Authority as part of its review of on-rail competition³, that this approach has the potential to improve competition between passenger services over the longer-term. This is because it would allow OAOs to contribute an appropriate amount towards fixed costs where they are able to, in exchange for having greater access to the network.
5. The implementation of our infrastructure cost charging approach depends on the outcome of the work currently underway to extend the market-can-bear test to passenger operators. It will also depend on the results of Network Rail's cost allocation work, including responses to the consultation Network Rail published on 22 September on this methodology.⁴ This is described in more detail in chapter 1.
6. The market-can-bear test (MCB test) is a key element of our approach to levying charges to recover fixed network costs, reflecting the legislative requirements (in UK

¹ Our 15 December 2016 charges and incentives consultation is available [here](#). Our June 2017 conclusions letter is available [here](#).

² By fixed network costs, we mean all of the costs incurred by Network Rail that do not vary over the short-term in response to small changes in the level of traffic. Fixed cost can vary over the medium and long-term.

³ The CMA's final policy document is available [here](#).

⁴ Network Rail's consultation on the methodology for allocating fixed costs to operators is available [here](#).

and EU law).⁵ Its purpose is to ensure that charges do not “exclude the use of infrastructure by market segments which can pay at least the cost that is directly incurred”. These requirements are discussed in more detail below. Our statutory duties, as set out under section 4 of the Railways Act 1993, are also relevant when taking decisions around infrastructure cost charges.

7. Another key element of an approach to recovering fixed network costs (through what we have called infrastructure cost charges⁶) is allocating those costs to different operators based on their use of the network. Network Rail has been working to develop a more detailed approach to cost allocation. This more detailed approach builds on the current approach used to allocate the fixed track access charge (FTAC) to franchised passenger operators, by disaggregating Network Rail’s cost base to a lower level (i.e. costs are allocated to individual sections of track rather than at an operating route level) and by incorporating elements of an avoidable cost methodology where appropriate. Network Rail is currently consulting on this methodology.⁷
8. Before implementing the new cost allocation methodology, we will consider the responses to Network Rail’s consultation. We will also consider the potential impacts on customers of using this methodology as part of the calculation of infrastructure cost charges, alongside the development of the MCB test.

Scope of this consultation

9. The aim of this consultation is to progress our work to develop infrastructure cost charges, by setting out proposals on market segmentation for passenger and freight services, and an initial view on which market segments appear to be able to bear charges above directly incurred cost⁸ in control period 6 (CP6).⁹ We also set out proposals on the design of passenger infrastructure cost charges.
10. The diagram in paragraph 11 of this document sets out the upcoming PR18 milestones which reflect the key outstanding questions which need to be answered in order to implement infrastructure cost charges, namely:

⁵ In particular, it is a requirement under The Railways (Access, Management and Licensing of Railway Undertakings) Regulations 2016, in order to levy mark-ups above cost directly incurred (i.e. short-run variable charges).

⁶ These charges represent mark-ups under the language of the legislation. We have previously referred to the Freight Only Line (FOL) charge and the Freight Specific Charge (FSC) paid by some freight services carrying specific commodities as mark-ups. We will now be referring to them as infrastructure cost charges.

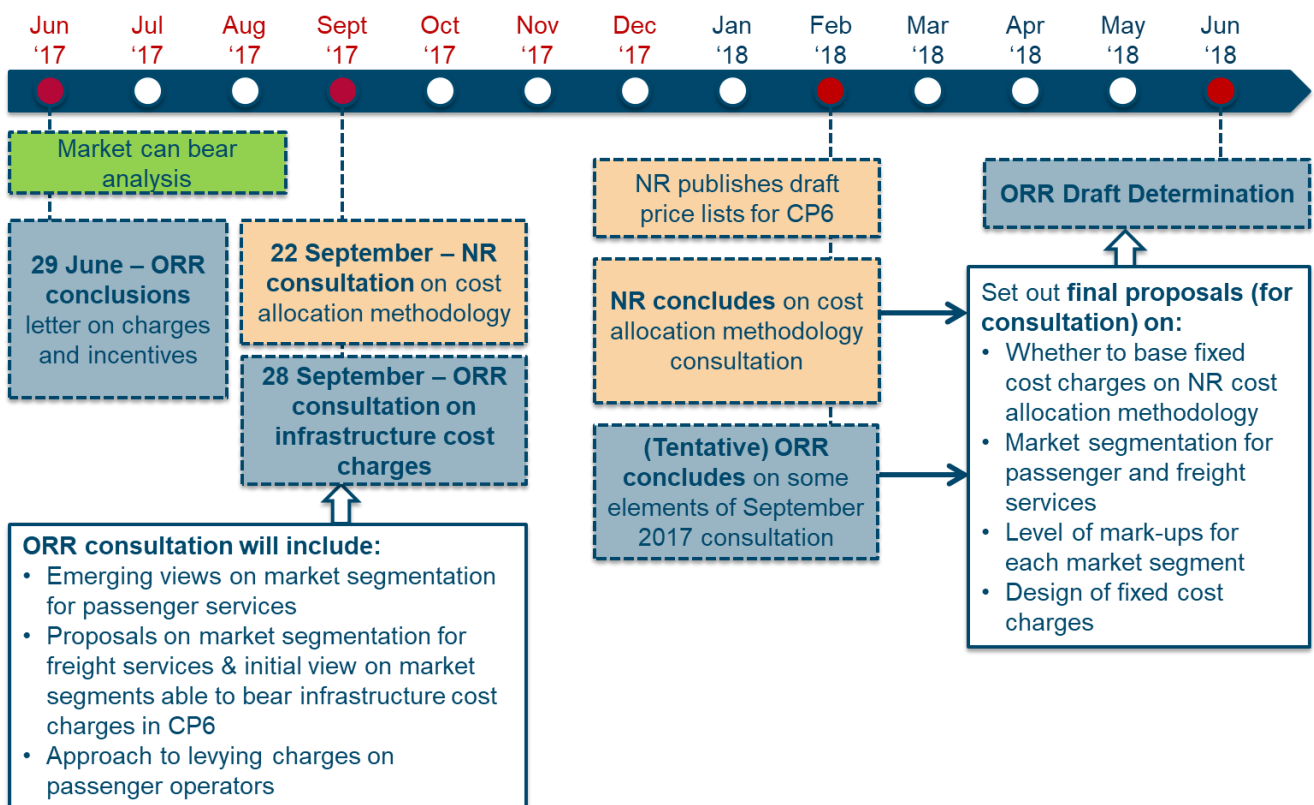
⁷ Network Rail’s consultation is available [here](#).

⁸ We have interpreted this as short run variable costs.

⁹ Control period 6 is expected to run from 1 April 2019 to 31 March 2024.

- (a) what level of fixed costs is allocated to different services running on the network?
- (b) what are the relevant market segments to consider, for passenger and freight services respectively, for the purpose of assessing ability to bear and calculating infrastructure cost charges?
- (c) what level of charges (above directly incurred cost charges) can the different market segments identified bear?; and
- (d) how should infrastructure cost charges be levied on different types of services?

11. This consultation sets out views and proposals in relation to questions (b) and (d) above. As shown in the diagram below, question (a) around the level of fixed costs allocated to different services is also currently being consulted on, through a Network Rail-led consultation on its new cost allocation methodology. We are planning on setting out proposals around question (c) in our June 2018 draft determination document.



12. This consultation does not set out proposals in all areas of the infrastructure cost charging approach, and specifically does not set out proposals around the level of infrastructure cost charges for different market segments in CP6. This is for two key reasons:

- (a) The conclusions of Network Rail's cost allocation work will not be available until early 2018. As discussed above, this work could form the basis for allocating costs to different market segments in order to calculate infrastructure cost

charges. Therefore, we will need to conclude on whether to use this work for that purpose before setting charge levels.¹⁰ The cost allocation however only informs the maximum possible level of the charge, with the MCB test also being relevant in setting the charge for each market segment; and

- (b) The level of infrastructure cost charges also depends on the level of variable charges operators are required to pay.¹¹ Network Rail has begun work to recalculate variable charges for CP6 (reflecting new information and levels of expenditure), with draft price lists being available early 2018.¹²

Structure of this consultation

13. This consultation is structured as follows:

- chapter 1 sets out the high-level approach to setting infrastructure cost charges;
- chapter 2 sets out our proposals on the market segmentation for freight services in CP6 (and which segments appear to have high ability to bear);
- chapter 3 sets out emerging views, based on the technical analysis undertaken by our consultants, around a potential approach to defining passenger market segments for the purpose of levying infrastructure cost charges; and
- chapter 4 sets out proposals around the design of infrastructure cost charges for passenger operators – OAOs and franchised passenger operators.

14. This consultation document is also accompanied by a number of supporting documents:

- **Market-can-bear analysis** – two technical reports (passenger and freight) produced by our consultants. These will be published on our website shortly following the publication of this consultation;
- **Assessment of options** for the different traffic measures we could use to levy infrastructure cost charges for OAOs, such as train miles or passenger kilometres; and
- **Assessment of options** for levying infrastructure cost charges on franchised passenger operators.

¹⁰ If the Network Rail cost allocation analysis is not determined to be sufficiently robust, the fall-back position is to continue using the LEK Consulting avoidable cost analysis to set freight charges, and the current approach for setting the FTAC (using simple traffic metrics) for all passenger services.

¹¹ This includes charges recovering cost directly incurred, such as the variable usage charge (VUC) or the electrification asset usage charge (EAUC). It also includes pass through-charges such as the electric current for traction (EC4T) charge.

¹² The level of variable charges can for example be affected by the ORR's policy decisions (for example, the decisions published in June 2017 to remove the capacity charge and coal specific charge will reduce the overall level of variable charges). It can also be impacted by changes in Network Rail's costs.

Responding to this consultation

15. This consultation closes on 30 November 2017. Please submit your responses, in electronic form, to our PR18 inbox pr18@orr.gsi.gov.uk. You may find it useful to use this [pro forma](#) to structure your response to this consultation.
16. We plan to publish all responses to this consultation on our website. Accordingly, when sending documents to us, we would prefer that you send your correspondence to us in Microsoft Word format or Open Document Format. This allows us 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.
17. Should you wish any information that you provide, including personal data, to be treated as confidential, please be aware that this may be subject to publication, or release to other parties or to disclosure, in accordance with the access to information regimes. These regimes are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004). 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.
18. In view of this, if you are seeking confidentiality for information you are providing, please explain why. 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.
19. If you are seeking to make a response in confidence, we would also be grateful if you would annex any confidential information, or provide a non-confidential summary, so that we can publish the non-confidential aspects of your response.

1. Background to infrastructure cost charges

Summary

This chapter provides a high-level description of the overall infrastructure cost charging approach we are working towards. This includes outlining the different elements involved in calculating infrastructure cost charges, and how we, or Network Rail, are progressing on each of them. This includes the method for allocating fixed network costs to different operators and services, and the method for determining what level of charges different types of services can afford to pay, consistent with the requirements of the legislation. It also includes considerations around the design of infrastructure cost charges for passenger operators.

- 1.1 At present, train operators contribute towards the fixed costs of running the rail network as follows:
- (a) franchised passenger operators pay a lump-sum fixed track access charge (FTAC). The allocation of the FTAC between operators takes place prior to the start of the control period. The cost allocation methodology is simplistic: the net revenue requirement for each route is allocated to franchised operators based on the forecast of their usage of that route for each year of the subsequent control period (i.e. using simple traffic metrics such as train miles);
 - (b) OAOs do not contribute towards the fixed costs of running the network, but pay short-run variable charges, such as the variable usage charge (on the same basis as franchised passenger and freight operators). We assess access rights to OAOs in accordance with our statutory duties. An overview of ORR's approach in deciding track access applications is set out in Annex B; and
 - (c) freight operators contribute towards fixed network costs, paying the Freight Only Line (FOL) charge and the Freight Specific Charge (FSC). Both charges are levied as mark-ups (on top of charges for costs directly incurred, in line with European legislation), on trains carrying electricity supply industry (ESI) coal, iron ore and spent nuclear fuel. These were the market segments which we determined in the 2013 periodic review (PR13) were able to bear mark-ups for control period 5 (CP5).¹³ The level of these charges is informed by an assessment of freight avoidable costs (i.e. those costs that would no longer be incurred by Network Rail if freight trains stopped using the network), having regard to the forecast freight traffic volumes. They are levied as a rate per thousand gross tonne miles.
- 1.2 In December 2016, we made three key proposals in relation to charges which recover fixed network costs:

¹³ Control period 5 runs from 1 April 2014 to 31 March 2019.

- (a) simplify the FOL and FSC into a single charge;
- (b) improve transparency around fixed network costs using Network Rail's new cost allocation methodology; and
- (c) apply charges to recover fixed costs from all operators, including OAOs, based on the new allocation methodology and a market-can-bear test.

1.3 In our June 2017 conclusions letter we confirmed proposal (a) above, and set out our next steps around proposals (b) and (c).

Calculating infrastructure cost charges

1.4 In order to calculate infrastructure cost charges for any type of service, we need to determine the level of fixed costs which are allocated to different (types of) services. The costs allocated to a particular service would form the upper bound for any infrastructure cost charge.

1.5 Methods for allocating fixed network costs to services already exist in the rail industry, but they differ by type of operator. Namely:

- for freight services, Network Rail appointed consultants in PR13 to estimate freight avoidable costs (i.e. those costs which would be avoided in the long run if freight services stopped using the network), and allocate those to different freight market segments (i.e. commodities). This approach does not allocate any common costs to freight services. Most freight commodities however do not in practice pay of the full allocated freight avoidable costs, because of the application of the market can bear test;¹⁴
- for franchised passenger services, the FTAC is calculated by allocating Network Rail's net revenue requirement¹⁵ for each route to operators using that route based on simple traffic metrics; and
- no fixed network costs are allocated to OAOs (even notionally).

1.6 In 2014, Network Rail appointed Brockley Consulting to undertake a review of cost allocation and attribution approaches in the rail industry, and explore potential alternatives. In 2016, it completed a pilot for a cost allocation methodology on the Wales route.

¹⁴ L.E.K. Consulting's report is available [here](#).

¹⁵ The net revenue requirement is (in this case) defined as the total revenue required by Network Rail over the control period, minus revenue from all other charges and sources of income. Network Grant paid by governments to Network Rail is netted off as a last stage in the calculation, after the net revenue requirement has been allocated to operators to calculate pre-grant FTACs. Network Grant is then subtracted from each operators' pre-grant FTAC in proportion to its share of total FTAC, to determine the final FTAC value, which is included on the price list.

- 1.7 The study sought to develop an objective and transparent allocation of fixed costs between all operators, reflecting long run patterns of cost causation. The approach started with the total costs of each route. It then built on this by making several refinements, including: allocating infrastructure costs to small units of the network (route sections); identifying what activities cause these costs to be incurred; and finally aggregating these costs to an operator level, based on their forecast use.
- 1.8 Network Rail subsequently rolled out this cost allocation methodology to all routes, and is currently consulting on the new methodology. In our June 2017 conclusions letter we set out that before implementing the new cost allocation methodology, we would consider the responses to Network Rail's consultation. We will also consider the potential impacts on customers of using this methodology as part of the calculation of fixed cost charges, alongside the development of the market-can-bear test.
- 1.9 We will develop specific criteria for determining whether Network Rail's cost allocation methodology is suitable for calculating infrastructure cost charges in CP6. These will be consistent for example with the assessment criteria against which we considered the different options around charges and incentives as part of our December 2016 consultation. These include (but are not limited to) objectives and criteria such as the ones listed below:
- operators have good knowledge of costs they are causing (in the short and long-run);
 - operators understand the basis on which the charge is set and how they can affect it;
 - decision makers and funders have good knowledge of costs caused by services in the short and long run;
 - promote positive impacts on funders/customers; and
 - promote positive wider external impacts.
- 1.10 Should we determine that the new Network Rail cost allocation methodology is not sufficiently robust to set infrastructure cost charges, the fall-back option is to continue using the existing methodologies described above for freight¹⁶ and franchised passenger operators respectively. The method used to allocate fixed costs to franchised passenger operators could form the basis for allocating fixed network costs to OAOs.

¹⁶ Given Network Rail will not have time to develop a PR18 avoidable cost estimate for freight services consistent with the previous L.E.K. analysis, this would be based on the PR13 estimates.

- 1.11 We expect the results of Network Rail’s consultation on the new cost allocation methodology will be available in early 2018. Along with our own analysis of how this methodology would affect different customers, this will allow us to set out a final proposal on whether this methodology should be used for CP6 in our June 2018 draft determination document.
- 1.12 Having established the maximum level of charges payable by any type of service based on the new Network Rail cost allocation methodology, or an existing allocation methodology, the next question involves establishing what level of contribution different types of services can afford to make towards these fixed costs, as per the requirements of the legislation. This is what we have called the market can bear test. It involves two key components:
- developing a market segmentation; and
 - determining what level of infrastructure cost charges each of the market segments defined could afford to pay, in addition to cost directly incurred charges.
- 1.13 We set out in chapter 3 (paragraph 3.3) the requirements of the legislation in relation to these two key components of what we have called a MCB test.
- 1.14 This consultation deals specifically with our work to date to develop a market segmentation for passenger services, and update the existing market segmentation for freight services. We do not set out proposals on the level of infrastructure cost charges in CP6.
- 1.15 As set out in our December 2016 charges and incentives consultation, we approve access rights to OAOs after considering the impacts on existing services, in accordance with our criteria and procedures. This includes the application of a ‘not-primarily-abstractive’ (NPA) test, which consists of five stages, as set out in Annex B.¹⁷
- 1.16 If we determined that OAOs were able to make a contribution towards fixed network costs in relation to some of their services (i.e. market segments), we would need to revisit our access policy (including the NPA test), to determine whether and how it is still fit for purpose.
- 1.17 We propose to begin looking at our access policy, and how it fits in with our direction of travel on infrastructure cost charges, in early 2018. We will likely do this through a combination of formal industry consultation, and discussions with stakeholders as part of existing forums (e.g. RDG working groups).

¹⁷ We decide track access applications in accordance with our duties as set out in section 4 of the Railways Act 1993 (“The Act”). More information about our approach is available [here](#) and in Annex B.

Design of infrastructure cost charges

1.18 In addition to the elements described above, in order to implement infrastructure cost charges we also need to take decisions around the design of such charges. In this section, we provide a high-level overview of the existing design of charges recovering fixed network costs.

1.19 As set out above, currently only freight operators and franchised passenger operators pay charges that recover fixed network costs. This is through the FSC and FOL paid by freight services carrying certain commodities, and through the FTAC paid by franchised passenger operators.

1.20 These charges are levied as follows:

- the FOL and FSC are both levied on each service falling within the three defined market segments (ESI coal, iron ore and spent nuclear fuel). This is as a rate per thousand gross tonne mile. Network Rail bills operators periodically for any mileage (thousand gross tonne miles) run by services carrying any of those three commodities, based on the rates determined by ORR in our PR13 final determination (as inflated by RPI); and
- the FTAC is levied as a fixed lump sum charge for each franchised passenger operator. It is calculated at the time of the periodic review by taking Network Rail's net revenue requirement and allocating it to franchised passenger operators based on different traffic metrics, which reflect forecast traffic for the control period. The FTAC does not change during a control period to reflect variations in the actual level of traffic run, compared with the forecasts.

1.21 We have confirmed in our June 2017 conclusions letter that we would merge the FOL and FSC for CP6. However, we are not proposing to make any other changes to the way freight infrastructure cost charges are levied, i.e. in terms of the traffic unit which defines the rate.

1.22 Since publishing our June 2017 conclusions letter, we have been considering the approach for levying infrastructure cost charges on passenger operators in more detail. Specifically, we have been considering how charges should be levied on any open access services, were we to determine that they can bear infrastructure cost charges. We have also been considering how infrastructure cost charges could be levied on franchised passenger operators through an approach which, unlike the current FTAC, reflects changes in the number of services provided by franchised passenger operators during a control period. This could address issues around Network Rail's incentives to add services, particularly in light of our decision to remove the capacity charge.

1.23 We set out options around the design of infrastructure cost charges for passenger operators in chapter 4 of this consultation.

2. Market-can-bear analysis for freight services

Summary

In this consultation, we are setting out proposals on the market segmentation for freight services in CP6, and an initial view on which freight market segments appear to be able to bear infrastructure cost charges. Informed by the analysis carried out by our consultants, we are proposing to retain the existing approach to market segmentation based on commodities carried, without defining any further market segments, based on geographic characteristics. We are also proposing to allow Network Rail to continue levying infrastructure cost charges on freight trains carrying ESI coal, iron ore and spent nuclear fuel. In addition, we are proposing to allow Network Rail to levy infrastructure cost charges on trains carrying biomass for the electricity supply industry (ESI biomass) in CP6.¹⁸

Introduction

- 2.1 In CP5, freight operators carrying three commodities (ESI coal, spent nuclear fuel and iron ore) have been subject to infrastructure cost charges (previously referred to as mark-ups, reflecting the language of the legislation). We determined which commodities would pay the FSC and FOL in CP5, and the level of these charges, based on a MCB test which we undertook in PR13.
- 2.2 This test was based on analysis carried out by our consultants, MDS Transmodal (MDST), which looked at the price elasticity¹⁹ of different commodities, and of the degree to which they compete with road. In setting the final level of charges, we also took into account our statutory duties.
- 2.3 We have decided to retain the existing approach to recovering fixed network costs from freight operators broadly unchanged. One change we have decided to implement is to merge the two existing freight mark-ups charges into one infrastructure cost charge (provisionally we are proposing to retain the name Freight Specific Charge for this charge, subject to further discussion with Network Rail). We have also decided to undertake a proportionate update of the MCB test to understand whether the existing approach to market segmentation remains fit for purpose and whether ability to bear has materially changed in any of the market segments defined.

¹⁸ We consider that in practice, all biomass on rail is ESI biomass. As such, Network Rail will not need to distinguish between different types of biomass traffic as part of its billing system. However, our analysis has focused on ESI biomass flows, and therefore we will keep this under review in case of future change in the type of biomass transported by rail.

¹⁹ The price elasticity of demand measures the extent to which use (i.e. amount of a good purchased) will vary in response to a change in price.

- 2.4 In this chapter, we provide an overview of the work undertaken in PR13 to establish which market segments can bear mark-ups. We also set out the work we have done as part of PR18 to update the freight MCB assessment, which is based on the same principles as the analysis undertaken in PR13 and periodic review 2008 (PR08). Our PR18 analysis has focused on the most significant commodities (e.g. in terms of tonnes lifted) and those commodities where significant changes have occurred since PR13. We appointed consultants CEPA to undertake the technical analysis, and we are publishing CEPA's report alongside this consultation (to be published shortly).
- 2.5 In this chapter, we set out proposals, for consultation, on which freight market segments should bear infrastructure cost charges in CP6. We are keen to hear from freight stakeholders (including freight customers), particularly if they have any additional evidence which we should take into account in our decision-making. We plan to set out final proposals in this area as part of our June 2018 Draft Determination.

Overview of PR13 freight market-can-bear analysis

- 2.6 In order to recover some of the fixed costs associated with freight services running on the network (in addition to the costs that had been previously recovered in CP4 in relation to freight only lines through the FOL charge), in PR13 we decided to introduce the FSC. The FSC recovers freight avoidable costs – i.e. the costs which would be avoided if freight services stopped running on the network – for those commodities on which it is levied.
- 2.7 In PR13 we applied a MCB test in order to recover the FOL charge and the newly introduced FSC. Both in PR08 and in PR13, this test, and our approach to segmenting freight services into different markets, was based on commodities carried. This approach was applied because it satisfied the following principles:
- definition of market segments should be practical, comprehensive and objective; and
 - market segments should, as far as possible, have common characteristics of some kind that place them, as a class, in a different commercial position against another identifiable class; and
 - choice of market segments should not distort incentives.
- 2.8 In practice, for the freight market segmentation, these principles have been used to develop a segmentation based on commodities carried. This is because the decision to use rail freight and the ability to bear mark-up is largely based on product characteristics and we think that market segments in the freight sector should be

based on the products transported by rail, rather than the operators that transport them.²⁰

2.9 In order to assess ability to bear charges above directly incurred cost (modelled as increases on the existing level of charges), the analysis was based on the following principles:

- the assessment should look at whether an increase in charges would increase the risk of exclusion from the use of infrastructure by that particular market segment. This can be specifically assessed by considering:
 - the elasticity of demand – how demand for rail freight services might fall or rise as a result of higher charges; and
 - the extent to which the market competes with other modes.

2.10 Our consultants then identified the market segments where demand is highly inelastic, and which face little competition from road. Further analysis around ability to bear costs (based on the principles set out above) was carried out for these market segments.

2.11 For the other market segments (i.e. where demand is highly elastic and where operators face significant competition from other modes – i.e. road in the case of freight), we were able to conclude quickly that the ability to bear mark-ups would be low (i.e. zero).

2.12 The technical analysis by our consultants was a key input into our decision, which also took into account feedback from our stakeholders and our statutory duties.

PR18 review of market segmentation

2.13 As part of the PR18 review of the freight MCB test, our consultants CEPA undertook a high-level review of the existing approach to market segmentation. This looked specifically at whether there is a case to define further market segments under the existing commodity market segments.

2.14 At a high level, keeping the existing approach to market segmentation has a number of advantages, including that it maintains predictability of the charging framework for freight operators, allowing them to plan their business with a reasonable degree of certainty. The existing market segmentation approach was developed based on the

²⁰ In PR13, the following markets were identified: electricity supply industry (ESI) coal; iron ore; metals; petroleum and chemicals; intermodal; automotive; spent nuclear fuels; general distribution; and premium mail and logistics

high-level criteria set out above, and changing it would need to also result in a market segmentation which fulfils these criteria.

- 2.15 The main potential area for change, which we asked our consultants to look at, was in relation to the intermodal market segment. This was because of the preliminary view we took in our competition investigation in relation to Freightliner Limited²¹ that some parts of the intermodal market are less price sensitive to freight charges than others, due to the degree to which they compete with road.
- 2.16 In light of this, we asked our consultants to undertake a more general assessment of the degree of competition from other modes in different parts of the intermodal market, in order to establish whether there is a case for defining further market segments under the existing intermodal market segment. It is important to note however that this is a different context to a competition investigation, and the work CEPA undertook was high level and its purpose was to provide an initial view of whether a case for change exists.
- 2.17 CEPA's analysis found that rail appears to face strong competition from other modes, particularly on the shortest journeys, where road is a lower cost option in comparison to rail. Rail is however, more cost effective over longer journeys, as fewer costs vary with distance. CEPA also found through discussions with stakeholders that over very long distances (e.g. southern England to Scotland), mode competition is emerging from feeder ships, either directly from the UK deep sea port (e.g. Southampton) or from Europe, e.g. a deep-sea ship stops in Antwerp, where a feeder ship then transports the containers directly from there to northern England.
- 2.18 In its report, CEPA also discussed the fact that the Department for Transport (DfT) currently provides subsidies to intermodal rail flows via the mode shift revenue support (MSRS) scheme. Applying infrastructure cost charges to some intermodal rail freight flows would affect their eligibility for the scheme (i.e. their costs would increase relative to other intermodal flows and therefore they would move up in the eligibility criteria).
- 2.19 One of the key issues in defining market segments is the need to ensure the segments are stable over time, and the choice of market segments does not distort incentives. Given the degree of change seen recently in the intermodal market, there is not a strong case currently for defining further market segments based on geographic features. We note however that this is a separate and different consideration from what would be considered relevant in a competition case.
- 2.20 Through its general review of ability to bear, CEPA also found evidence of similar dynamics in the aggregate market, e.g. there seems to be particularly high demand

²¹ In December 2015, ORR published a decision to accept commitments offered by Freightliner Limited and Freightliner Group Limited (commitments decision), which is available [here](#).

currently from the south-east of England, which is increasing longer distance flows over which rail tends to have an advantage.

2.21 However, CEPA also noted that construction is relatively pro-cyclical in relation to macroeconomic growth, so there is a question of whether flows will continue to grow. Stakeholders also noted that construction is dependent upon government policy (e.g. new build initiatives), which is relatively uncertain. Therefore, and based on the same arguments around the need for stable definition of market segments over time, we do not see a strong case for defining sub-segments for aggregate flows.

PR18 review of ability to bear of freight market segments

2.22 We also asked CEPA to review evidence around changes in ability to bear in key freight market segments – namely the most significant market segments in terms of volumes carried, market segments currently in the scope of infrastructure cost charges, and market segments we have previously indicated might come in scope of these charges.

2.23 Below we set out the main arguments, which support continuing to, or beginning to, levy infrastructure cost charges on four freight commodities: ESI coal, iron ore, nuclear fuel and ESI biomass. This based on the analysis undertaken by CEPA, as well as our consideration of those arguments and of our statutory duties.

2.24 In light of the review CEPA undertook of the intermodal and aggregate market segments, and the conclusion that there is no strong case for definition of sub-segments, we also set out below key arguments around why these two market segments do not appear to be able to bear a charge at an aggregate level.

2.25 By way of context, we note that income to Network Rail in CP5 to date from the FOL and FSC was £4m per annum in the first year of CP5, and £2m and £1m per annum in the two subsequent years respectively (2016-17 prices). This is income from all three commodities currently in scope for the FOL and FSC (i.e. ESI coal, iron ore and spent nuclear fuel). As such, the scale of charges being discussed in this section is relatively low, particularly when considering each individual commodity.

ESI coal

2.26 Coal traffic has (as expected) been declining over CP5, albeit the decline has been faster than most anticipated in PR13. This prompts a question as to whether it is appropriate to continue to levy a mark-up on this market. When doing so, it is important to consider whether going forward, the continuation or removal of mark-ups would have a significant impact on the volume of coal carried by rail. It is this question, rather than the size of the coal market per se, that is relevant to our decision.

2.27 Against this background, the following points are particularly important:

- first, the decline in coal-fired generation has been mostly as a result of government policy in relation to energy markets;
- second, the emerging conclusion from the CEPA analysis is that remaining coal traffic may be marginally more price-sensitive than before (partly due to the fall in the price of gas). However, access charges continue to be a small proportion of total coal movement costs and therefore appear unlikely to significantly impact on decisions on whether to burn coal; and
- third, due to fixed running hour limits for the majority of coal-fired power stations²², changes in rail charges appear more likely to affect when to burn coal, rather than have a significant impact on the total volume of coal burnt (and therefore the total amount shipped by rail).

2.28 Overall, there does not appear to be a significant impact of rail charges on the total volume of coal that is likely to be shipped by rail. On this basis, there appear to be strong arguments to continue treating ESI coal as a market segment that attracts a mark-up to recover a proportion of fixed costs.

Biomass

2.29 Over the last few years, biomass has become a fairly well established part of the UK energy mix. The volume of UK electricity generated from biomass increased by 62% between 2013 and 2015, or by 127% since 2011.²³ In addition, biomass' share of generation is now circa 4% (as of Q3 2016); more than coal for the equivalent period.

2.30 In addition, biomass rail freight flows have increased significantly in recent years, growing by 133% between 2013/14 and 2016/17 – more than any other commodity. However, CEPA's analysis provides initial signs that growth may have stalled recently (2017/18), driven by changes to government policy on the support for renewable generation.

2.31 As part of PR13, on 15 February 2013, we consulted on whether the FSC (and FOL charge) should apply to biomass on the same basis as that which we had concluded

²² Recent EU Emissions Directives have imposed emissions standards on generating plants, and have imposed limited running hour requirements. The Large Combustion Plants (LCP) Directive (2001) required that plants built before 2007 to comply with the specified emissions standards, or close by 2015 with plant running hours limited to 20,000 per year post-2007. The Industrial Emissions Directive superseded the 2001 Directive from 2016 onwards, imposing further limitations on coal plants. Specifically, plants could choose to either run for up to 17,500 hours between 2016 and 2023 (under the Limited Life Derogation, or LLD), or close by 2020, or run for up to 1,500 hours per year (under the Transitional National Plan, or NTP).

²³ The growth in biomass to date primarily relates to the conversion of two plants from coal to biomass – Drax's Selby plant and Lynemouth power station.

should apply to other commodities.²⁴ This was based on analysis by MDST, which showed that the costs per tonne of transporting biomass by rail were significantly lower than the costs of transporting it by road, even when modelling a substantial increase in rail charges.

2.32 We however concluded that we would postpone the introduction of such a charge, and reconsider the position of biomass in PR18. This was because at the time, biomass was an emerging market and there was considerable uncertainty.

2.33 As part of the PR18 review of ability to bear of different market segments, our consultants have reviewed key changes in energy markets which affect both coal and biomass, as well as recent trends in rail freight flows of biomass.

2.34 The following key points have emerged from the PR18 analysis in relation to biomass:

- power plants that have recently been converted from coal to biomass were converted on the basis of Contract for Difference (CfD) subsidies, determined under the one-off Final Investment Decision Enabling for Renewables (FIDER) in 2014. Two of Drax's units also receive support via the (now closed) Renewables Obligation (RO) scheme. One other dedicated biomass plant (TeesREP), which is under construction, will receive CfD support. These subsidies are 'locked in' for 15 years, providing additional certainty to investors, particularly over the revenue received for output. Several potential investors in biomass plants have withdrawn after it was announced that their proposals would not receive the level of subsidy that they had expected, suggesting that further growth in biomass generation (and therefore the carriage of biomass by rail) is not likely to be significant over CP6;
- competition from other modes – large power stations transport biomass via rail from key ports. Smaller biomass power stations (associated with industrial plants) tend to obtain biomass locally and therefore tend to transport their biomass by road, with little competition from rail.²⁵ For the key large power stations, as found by MDST in PR13, rail has a substantial cost advantage compared with road transport (even when taking into account an additional charge or mark-up on variable charges);
- as set out above, for existing market participants, the transportation costs by rail are lower than by road (and they represent a very small proportion of the total costs of biomass electricity generation). In addition, as highlighted by CEPA in its report, there has been significant rail-specific investment to support both of

²⁴ Our February 2013 consultation on a freight specific charge for biomass is available [here](#).

²⁵ MDST's PR13 reports are available [here](#) (Stage 1 analysis) and [here](#) (Stage 2 analysis).

the two major biomass plants in the UK. This investment, which has occurred in the knowledge of ORR's intention to revisit the case for a biomass mark-up as part of PR18, indicates investors' confidence in the profitability of biomass generation over the medium term (after taking account of government support schemes). It is possible that changes to rail charges could affect decisions about the routing of particular shipments, but we do not expect this to affect the balance between shipments going by road and by rail;

- we have also considered how these issues apply to any potential new market participants (i.e. whether the charge would affect their decisions to transport biomass by rail). We note the points highlighted by CEPA in their report around potential new entrants, namely the fact that there is some uncertainty about the future of this market for potential new investors. This is for example demonstrated by the fact that in the UK Government's first CfD auction in 2015, no subsidies were allocated to biomass conversion. The results of the second CfD auction were announced on 11 September 2017.²⁶ Subsidies were allocated to two biomass projects (combined heating and power plants), however these are smaller plants (one 85MW and one less than 1MW), which would not likely be using rail to transport their biomass in any case, as described above. There is also some pressure to restrict future biomass subsidies due to concerns about its environmental sustainability. More generally, government subsidy is seen as necessary for the viability of any new investment; and
- This underlines the fact that a biomass infrastructure cost charge is unlikely to have a significant impact on existing market participants (either because they do not use rail as is the case for smaller plants or because rail transport costs are significantly lower compared with road transport costs as is the case for the larger plants). In addition, a biomass infrastructure cost charge is not likely to deter any future entry given the issues highlighted above in relation to future market participants;
- we have also considered more generally whether it is reasonable to levy additional rail costs given the sunk investments in biomass generation and rail infrastructure. We note that the possible introduction of freight mark-ups for biomass was flagged at the previous periodic review, and the review of market segmentation and periodic review process was well known at the time of the relevant investment decisions.

2.35 We have set out above key arguments we have identified around the ability to bear charges above directly incurred costs for biomass services. This is based on the evidence obtained through the PR13 periodic review (based on MDST's analysis),

²⁶ Results available [here](#).

and evidence provided by CEPA through its PR18 review of ability to bear (this has mostly been a qualitative review which has however benefited from stakeholder input).

2.36 On balance, these arguments point to biomass rail services having the ability to bear charges above directly incurred cost (i.e. infrastructure cost charges), and that additional rail charges appear unlikely to significantly affect the total amount of biomass generation or the balance between the transportation of biomass by road or rail. However, we are aware that industry participants (and rail freight customers) might have additional information that CEPA has not had access to, and we are keen to receive any such additional evidence, which might be relevant to our final decision on the level of infrastructure cost charges for different market segments (to be set out in our draft determination).

Iron ore

2.37 The analysis of iron ore revolves around the single flow from the Port of Immingham to a plant at Scunthorpe owned by British Steel (previously owned by Tata Steel). British Steel's major domestic customer is Network Rail. It also supplies steel rail products internationally, and provides steel for other sectors, e.g. construction.

2.38 The key points to note in relation to iron ore are:

- UK steel production overall has been suffering from low profitability in recent years. The main drivers of this are a fall in the global steel price due to an increase in low-cost steel production in China (so steel imports to the UK from China have displaced UK production), and increased energy costs involved in steel production;
- however, competition from other modes in terms of the transportation of iron ore remains very low (in PR13 MDST found that road transport for iron ore would be around three times the cost of rail transport, so road is not a realistic substitute). In addition, it does not appear that the low profitability of the steel industry has been caused by the application of freight mark-ups charges - the iron ore FSC only came into effect in 2016/17, and even then only partially, due to its phased implementation. Tata Steel was making losses in the run-up to 2016, which pre-dates the FSC. British Steel has recently announced (June 2017) that it has achieved a £47m profit for its first year of operation since it purchased the plant from Tata Steel.

2.39 On balance, based on those arguments, we believe that the evidence suggests iron ore is still able to bear a mark-up.

Spent nuclear fuel

2.40 No significant changes were identified in the position of spent nuclear fuel, and therefore this commodity was assessed by CEPA as having a similar ability to bear as in CP5.

Intermodal

2.41 As set out in the previous section of this chapter, based on the high level review by CEPA we did not identify a strong case currently for defining sub-segments in the intermodal market segment based on geographic flows or distance travelled.

2.42 In addition, based on CEPA's analysis it appears that the intermodal market as a whole continues to face strong competition from other modes, and would not therefore be able to bear infrastructure cost charges in CP6.

Aggregates

2.43 As set out above, based on the evidence provided by CEPA we have not identified a strong case for defining sub-segments in the aggregates market segment based on distance travelled or geographic flows.

2.44 In terms of ability to bear in relation to aggregates, CEPA's analysis highlighted that transport costs are a high proportion of delivered costs for aggregates. As such, mode choice is price sensitive (demand is elastic) and increases in charges would continue to "significantly affect how they are delivered", as found by MDST in its PR13 analysis. Therefore, we are not proposing to include aggregates in the list of market segments able to bear infrastructure cost charges.

2.45 Further detail on CEPA's analysis and findings is included in the technical report we have published alongside this consultation. We are grateful for the extensive stakeholder engagement (from both freight operators and freight customers) with the CEPA analysis. This happened on a bilateral basis as well as through RDG-facilitated working group meetings. We encourage stakeholders to provide us any additional evidence they believe is relevant in relation to any of the commodities discussed above.

Proposals on market segmentation and market segments subject to infrastructure cost charges in CP6

2.46 We have considered the evidence emerging from the analysis undertaken by CEPA, building on the analysis developed in PR13 by MDST. We have also considered our statutory duties, and the other requirements of the legislation, including the need to base infrastructure cost charges on "the basis of efficient, transparent and non-discriminatory principles, whilst guaranteeing optimum competitiveness".

2.47 Based on these considerations, we are proposing in CP6 to:

- **retain the existing market segmentation based on commodities carried, without definition of sub-markets for any commodities;**
- **continue to allow Network Rail to levy infrastructure cost charges from the three commodities which have been paying the FSC and FOL in CP5 (i.e. ESI coal, spent nuclear fuel and iron ore); and**
- **allow Network Rail to levy infrastructure cost charges from trains carrying biomass for the electricity supply industry (i.e. ESI biomass).**

Next steps

2.48 We are keen to continue working with stakeholders as we develop these proposals further, ahead of our consultation on final proposals on freight market segmentation, and the level of freight infrastructure cost charges for CP6. We plan to consult on these issues as part of our draft determination, which we expect to publish in June 2018.

Consultation questions

Question 2.1: Do you have any views on our proposal to retain the existing freight market segmentation by commodity, and not introduce further market segments for any of the existing commodities?

Question 2.2: Do you have any views on our proposal to continue allowing Network Rail to levy infrastructure cost charges on freight trains carrying ESI coal, iron ore and spent nuclear fuel? Do you have any views on our proposal to allow Network Rail to levy infrastructure cost charges on trains carrying ESI biomass in CP6?

Question 2.3: Do you have any additional evidence around the ability to bear of any of the freight market segments reviewed by our consultants, which you would like to provide us to inform our final decision around which freight market segments are able to bear infrastructure cost charges in CP6? If you would like to provide us any confidential evidence as part of your response, please see the guidance set out in Chapter 1 on responding to this consultation.

3. Market segmentation for passenger services

Summary

We are setting out initial views, based on the technical analysis undertaken by our consultants, around a potential approach to defining passenger market segments for the purpose of levying infrastructure cost charges. We have described these services, which could be defined as market segments under each of the high-level categories identified in the legislation (passenger services within the framework of a public service contract, and other passenger services) as major intercity services, and long-distance commuter services.

Introduction

- 3.1 We have confirmed our intention to continue working towards levying charges to recover fixed network costs from all operators, including OAOs, in CP6. In order to levy such charges, the legislation requires us to assess the ability of different market segments to bear charges above directly incurred cost.
- 3.2 We have not previously undertaken an explicit MCB test for passenger services. The FTAC franchised operators pay is based on an implicit MCB assessment, which takes into account the fact that franchised operators bid for franchises based on a known level of FTAC at the time when they would enter into the franchise. It also takes into account the fact that franchised passenger operators are held harmless to any subsequent changes in the level of FTAC resulting from ORR's periodic review.
- 3.3 However, in order to levy infrastructure cost charges on OAOs, we need to carry out an explicit MCB test. We have taken as a starting point for developing this test the requirements of the legislation, with a few of the key ones listed below:
 - Recital (41) of the 2012/34 Directive²⁷: “When levying mark-ups, distinct market segments should be defined by the infrastructure manager where the **costs of providing the transport services, their market prices or their requirements for service quality differ considerably**” (emphasis added);
 - Paragraph 1 of Schedule 3 of the 2016 Regulations²⁸: “(1) The infrastructure manager must ensure that the application of the charging scheme – (a) complies with the rules set out in the network statement [...]; and (b) results in **equivalent and non-discriminatory charges for different railway**

²⁷ We have identified only this recital in the text, but we have considered and had regard to all the recitals which bear on the levying of a mark-up.

²⁸ Implementing article 29(3) of the 2012/34 Directive

undertakings that perform services of an equivalent nature in a similar part of the market ” (emphasis added); and

- Paragraph 2 of Schedule 3²⁹: “(5) Before approving the levy of a mark-up [...], ORR [...] must ensure that the infrastructure manager evaluates the relevance of a mark-up for the specific market segments, **considering at least the pairs listed in sub-paragraph 10 and retaining the relevant ones.**” (emphasis added);

“(6) The list of market segments to be considered by the infrastructure manager under sub-paragraph (5) must contain at least the three following segments: freight services, passenger services within the framework of a public service contract and other passenger services.” (emphasis added)

“(7) In addition to the market segments considered under sub-paragraph (5), the infrastructure manager may consider further market segments according to commodity or passengers transported.”

3.4 In developing the passenger MCB test, we have also sought to be consistent with the high-level principles we have previously applied when undertaking the freight MCB (which is also based on the legislation above).

3.5 The two key components of the passenger MCB test are:

- developing an approach to categorising passenger services into distinct market segments; and
- assessing the ability of the market segments defined to bear charges above directly incurred charges.

3.6 The initial views set out in the rest of this chapter relate primarily to the first issue, i.e. defining market segments. They are based on the analysis undertaken by our consultants, CEPA and Systra. These initial views are not yet a well-defined market segmentation proposal. We will undertake further work to develop a final market segmentation proposal which we envisage consulting on either as part of our June 2018 draft determination, or at an earlier date in 2018.

3.7 However, despite not having a fully developed market segmentation proposal, we believe it is useful to share our progress to date in this area with stakeholders, and get your feedback at this stage. This is the first time we have undertaken this kind of analysis, which is very complex and novel in nature. As such, we believe there is value in stakeholders engaging with the technical analysis undertaken by our

²⁹ Implementing article 32(1) of the 2012/34 Directive.

consultants, and providing us feedback particularly in terms of the methodology and data sources used.

- 3.8 The remainder of this chapter provides a high-level summary of the analysis undertaken by CEPA and Systra, and of the emerging results from that analysis. We will publish in full (save for the confidential parts) the report of CEPA and Systra's work shortly after the publication of this consultation.³⁰ We are particularly grateful to stakeholders who have already engaged with this work through the RDG-led working group meetings where we presented emerging findings of this analysis.
- 3.9 We have previously explained that in applying any infrastructure cost charges to OAOs, we would need to consider the access policy we apply in relation to these operators. Specifically, in relation to any existing OAOs who have entered the market on the basis of a specific access policy (including the NPA test), we would need to consider any transitional arrangements necessary before applying such charges to them (if they fall under a market segment which is in scope for a charge).
- 3.10 In implementing an infrastructure cost charging approach, we will need to consider whether any phasing-in arrangements would be appropriate for OAOs, and specifically any new entrants. This is because OAOs are fully exposed to charges (and changes in charges), unlike franchised passenger operators, and also because OAOs usually require a period of time after starting operations to build up a customer base.

Developing a market-can-bear test for passenger services

- 3.11 In defining market segments, the legislation requires us at a high level to consider two types of passenger services: passenger services within the framework of a public service contract (i.e. a franchise agreement), and other passenger services (i.e. open access passenger services). We are also required to consider the relevance of the list of pairs relevant to passenger services, as defined in paragraph 2(10) of Schedule 3 of the 2016 Regulations³¹:
- domestic versus international services;
 - urban or regional versus interurban passenger services; and
 - regular versus occasional train services.

³⁰ The confidential parts of the CEPA / Systra report relate to service-code level analysis of train operators costs and revenues.

³¹ Annex VI in the 2012/34 Directive.

- 3.12 In developing a passenger market segmentation, the consultants took the principles and approach we have previously applied for freight services as a starting point. For freight services, the market segmentation developed in PR08, and which we are proposing to keep for CP6, is based on commodities carried. Commodities are an objective and transparent way of categorising freight services, because the type of freight carried by a train has an impact on the costs of transporting it, the revenues operators can earn on that type of train, and their requirements for service quality.
- 3.13 As rail freight largely operates today, individual freight trains generally haul a single commodity (assuming we treat containerised freight as a single commodity – i.e. intermodal). Freight markets are strongly related to the commodity hauled. In this case, the concept of market-can-bear is clear; it represents the potential for a charge to result in traffic of a particular commodity moving to road.
- 3.14 Our consultants have been working over the past four months to develop a passenger market segmentation, by looking at all services running on the network currently³², their revenues and costs.³³
- 3.15 CEPA and Systra started by considering the nature of passenger services, and the determinants of customers' willingness to pay. One determinant of the fares that passengers are willing to pay, in addition to geography (i.e. the origin and destination of a service), is often considered to be the purpose of a journey. This is illustrated by the fact that fares on the same train can vary significantly between passengers. Thus, unlike in freight, we cannot as effectively identify the underlying passenger markets by looking at trains only. The main exception to this is in commuter markets. In these markets prices are often, in effect, set by train and by time of day. Higher priced, peak-time trains are usually used by commuters, who are largely all paying similar fares.
- 3.16 In addition, because we are looking at developing a track access charge, it would not be practicable to apply it at a sub-train level. Therefore, charging passenger trains an infrastructure cost charge can only be done at a train level. However, as a result it cannot be as unambiguously linked to the underlying ability to bear of each passenger. The result is likely to be a degree of averaging when estimating ability to bear.

³² Initially this has ignored the distinction between passenger services within the framework of a public service contract and other passenger services. This is because developing a market segmentation based on open access currently running would mean there is not a lot of data available to develop this segmentation.

³³ Note that for the purpose of the technical analysis, all services currently running on the network, whether they are operated by a franchised operator or an OAO, have been considered together in order to analyse costs and revenues and develop a comprehensive classification. In the next stage of the work, the two high-level market segments required in the legislation could be broken down into further market segments, based on the CEPA analysis.

- 3.17 The most important determinant of ability to bear, aside from journey purpose, is likely to be the geographic market served by a service. There are also material differences in the earning ability of services depending on the time of day when they run. However, this may also vary based on geography. While we have a clear idea of peak and off-peak times for commuter services, valuable times of day for other services may vary substantially depending on the location of the service. A single definition is unlikely to work for all relevant lines, but it is also likely to be difficult to devise workable localised definitions.
- 3.18 As such, our consultants took a practical approach, and looked at routes as a whole, rather than trying to distinguish between peak and off-peak services. Network Rail has also informed us that their billing system does not currently enable them to distinguish miles travelled by time of day, with service codes being the lowest level of granularity for billing passenger services. Service codes typically capture both what we would refer to as 'peak' services, and 'off-peak' services.³⁴
- 3.19 Having established this principle, the consultants' analysis focused on estimating the costs and revenues associated with all passenger services (i.e. service codes) on the network, and calculating a net operating surplus value per train mile for each service code (i.e. net operating surplus = revenue per train mile minus average cost per train mile).³⁵
- 3.20 CEPA and Systra used this operating surplus value to rank all services codes running on the network, and to investigate this ranking. The conclusion based on this high level analysis is that services with high operating surplus values tend to be those running between major cities in the UK (major intercity) or between London and more developed urban centres around London (long-distance commuter). This is based on an assessment of the costs of providing transport services, and the market prices or fares for those services. The analysis has also reflected different requirements for service quality, for example in the modelling of service operating costs (with some services requiring more modern and comfortable rolling stock).
- 3.21 The analysis also found lower than expected surplus values on some routes which fit into the description above, however this was generally on routes where there is more than one operator providing services (i.e. there is competition). On such routes, operating surplus might not be the right indicator to look at to establish ability to bear. This is because competition might have driven the prices down, and it could be the

³⁴ Service codes are defined for each operator, and they tend to contain a collection of that operators' services running between an origin and a destination (and back), but also calling at any intermediate stations.

³⁵ The revenues, by service code, were obtained from MOIRA, which is an industry model commonly used to forecast the impact of timetable changes on demand and revenue. Costs were modelled on the basis of TOC level costs obtained from the ORR's rail industry financials publication, with a cost function estimated to allocate those between different types of services run by an operator.

case that willingness to pay in the end customer markets is higher than what is implied by the present level of fares.

- 3.22 As part of their analysis, CEPA and Systra also considered the types of services identified in the list of pairs included in paragraph 3.11 (page 30), such as international services, and charter services (i.e. occasional services). With respect to international services, these mostly run on the HS1 network at the moment (and make very limited use of Network Rail's infrastructure). The consultants did not recommend considering the ability to pay of these types of services further as part of the MCB analysis.
- 3.23 Similarly, with respect to charter services, these currently represent a very small proportion of total passenger (franchised and OAO) traffic – i.e. less than 0.2% of mileage. In addition, these services tend to vary significantly in terms of where and when they run. The costs and revenues of these services are not captured in industry databases, and therefore investigating ability to bear for the market segment as a whole would be a very complex exercise, and one potentially not proportional to the size of the market segment.
- 3.24 Consequently, we are not proposing to undertake any further work as part of PR18 to quantify ability to bear for these market segments, given their size. If either of these market segments expand (or are expected to expand) significantly in the future (i.e. during CP6), we will revisit this consideration.
- 3.25 A more detailed explanation of the analysis undertaken is available in the report by CEPA and Systra, which we will publish alongside this consultation.
- 3.26 This analysis provides one possible approach to defining market segments. However, it is not in itself a definition of market segments, because it could be used to define market segments in a number of different ways. In particular, we have to consider how the concepts of intercity and long-distance commuter services can be operationalised as definitions of market segments. In addition, we need to consider how the segmentation fits in with the high-level segmentation set out in the legislation.
- 3.27 In proposing a market segmentation for passenger services in CP6, we will have to consider how the types of services identified fit in with the high-level segmentation set out in the legislation. We also have to consider how the concepts of intercity and long-distance commuter services can be operationalised as definitions of market segments.

Next steps

- 3.28 We will continue to work over the coming months to develop a robust and well-defined market segmentation for passenger services. Based on your feedback to this

consultation, and further work and analysis we will undertake, including to understand how these emerging findings fit with the legal requirements in place, we will set out a proposed market segmentation for passenger services as part of our June 2018 draft determination document.

3.29 We are interested in your views on the technical analysis in general, and specifically on:

- the methodology developed by our consultants to establish which services appear to have high ability to bear;
- the data sources and techniques used;
- the methodology developed by our consultants to assess a range for a possible charge in the market segments identified as potentially having high ability to bear;
- the approach to defining market segments based on the analysis by CEPA and Systra, and the emerging findings in terms of major intercity services and long-distance commuter services.

Consultation questions

Question 3.1: Do you have any views on the results of the technical analysis undertaken to date on passenger market segmentation (and ability to bear)? Do you have any views around how these emerging findings could inform a passenger market segmentation?

4. Proposals for the design of passenger infrastructure cost charges

Introduction

- 4.1 In this chapter, we consider how to levy infrastructure cost charges on passenger operators, both franchised and OAOs. The approach used to levy infrastructure cost charges on passenger operators is an important factor in supporting our objectives of providing Network Rail and operators' with incentives to make best use of capacity on the network and encouraging competition between operators.
- 4.2 Due to the ability of OAOs to enter and exit markets they operate in more easily than franchised operators, we consider it appropriate to levy infrastructure cost charges on OAOs as a rate per unit of traffic (e.g. a rate per train mile). We have considered three different units of traffic that could be used to levy infrastructure cost charges on OAOs.
- 4.3 For franchised passenger operators we have considered options for levying infrastructure cost charges in a way that reflects changes in traffic during the control period. Currently FTAC is levied as a lump-sum and fixed for the control period.
- 4.4 The rest of this chapter is divided into two sections:
 - charging unit for OAOs; and
 - approach for levying infrastructure cost charges on franchised passenger operators.

Charging unit for open access operators

- 4.5 Since OAOs do not have a contract with government to run a certain level of services, they can enter or exit the market within a control period more easily than franchised passenger operators.
- 4.6 In addition, because they do not have a contract with government, OAOs are fully exposed to changes in track access charges. This is compared to franchised passenger operators, who pay track access charges at the level they were set when they entered into their franchise agreements. Franchised passenger operators are then held harmless to any changes in track access charges as a result of ORR's periodic review.
- 4.7 These characteristics of OAOs mean it would not be appropriate to levy infrastructure cost charges on OAOs as a lump-sum charge fixed for the control period. This approach would rely on the ability to forecast OAO use of the network (in addition to their ability to pay) over the whole of CP6. As a result, such an approach would carry

a high risk of prompting OAO exit from the market, should the forecast be materially wrong. Furthermore, this approach may also prompt unintended reactions from OAOs, as operators may seek to avoid such charges by closing operators and opening similar routes as 'new entrants'.

- 4.8 Therefore, if fixed network costs are recovered from OAOs in CP6, their infrastructure cost charges should be levied as a rate per unit of traffic. OAOs would be billed for the actual services that they run, multiplied by an infrastructure cost charge unit rate. The unit rate would be set through the periodic review process, based on the MCB test and potentially the cost allocation methodology being developed by Network Rail.
- 4.9 We recognise that compared with an approach where OAOs pay infrastructure cost charges as a fixed lump sum, this approach means that a higher proportion of Network Rail's income would vary with traffic during the control period. For example, an OAO could leave the market during a control period, which could result in a funding shortfall for Network Rail (due to loss of forecast income relating to that OAO).
- 4.10 However, compared to the status quo, the overall impact on Network Rail is likely to be lower than this. Firstly, new OAO services would provide additional income for the company, offsetting the costs that it faces when accommodating this traffic. Secondly, OAOs account for a relatively low proportion of total traffic on the network, currently less than 1%, this means it is unlikely to increase the volatility of Network Rail's income significantly.
- 4.11 To levy infrastructure cost charges on OAOs as a rate per unit of traffic, we need to consider the most appropriate unit of traffic. We have considered levying open access operators' infrastructure cost charges as a rate per:
- train mile;
 - vehicle mile; and
 - passenger kilometre.
- 4.12 Below is a summary of our assessment of each unit of traffic. We have published a more detailed assessment of these options alongside this consultation.

Train mile

- 4.13 When a train travels one mile that is one train mile, it does not depend on the characteristics of the train, such as its length, weight or the number of passengers on board.

- 4.14 This means that if OAOs' infrastructure cost charges were levied as a rate per train mile it would not affect their incentives to make the best use of the capacity they are allocated. For example, OAOs would not be penalised for extending the length of their trains to meet an unexpected increase in demand, or for attempting to increase the demand for their services through innovative pricing or marketing strategies.
- 4.15 In addition, Network Rail would not face significant costs to update their billing system to levy OAOs' infrastructure cost charges as a rate per train mile. Train miles are already used as a metric for other charges, such as to bill operators for the capacity charge.

Vehicle mile

- 4.16 The number of vehicle miles for a train is the number of train miles it travels multiplied by the number of carriages on the train. A train made of ten carriages that travels one mile would account for one train mile and ten vehicle miles.
- 4.17 Levying the charge as a rate per vehicle mile would mean OAOs' infrastructure cost charges would depend on the length of the trains they run. This could discourage OAOs from running longer trains. As a result, a rate per vehicle mile would not provide OAOs with an incentive to make better use of the existing network.
- 4.18 A way to avoid OAOs from being discouraged from running longer trains is to cap the number of carriages that are charged for. For example, if we capped the charge at eight carriages and an OAO ran a service with ten carriages the number of vehicle miles for the service would be the number of train miles for the train multiplied by eight, as opposed to ten. If we conclude vehicle miles should be used as the unit of traffic to levy infrastructure cost charges on OAOs we will consider in more detail if the number of carriages charged should be capped, and if so, what level the cap should be set at.
- 4.19 Analysis done by Network Rail as part of their work on the new cost allocation methodology has not established that the length of trains is a significant driver of fixed costs on the network. Therefore, levying the charge as a rate per vehicle mile may not provide OAOs with the correct incentives to consider the long run costs their services impose on the network.
- 4.20 As with train miles, vehicle miles are used to bill operators for several existing charges. This means levying infrastructure cost charges on OAOs as a rate per vehicle mile would not impose significant costs on Network Rail in terms of making changes to its billing system.

Passenger kilometre

- 4.21 The number of passenger kilometres for each train is the number of train kilometres it travels multiplied by the number of passengers on board. A train that travels one kilometre with ten passengers on board is counted as ten passenger kilometres.
- 4.22 Under this option, OAOs' infrastructure cost charges would depend on how intensely their services are used, i.e. the more passengers that use their services the higher their infrastructure cost charges would be. The number of passenger using OAOs' services would be highest during peak times of day. The Network Rail fixed cost allocation study explains that busy periods of the day are a driver of fixed costs on the network, due to the additional infrastructure required to accommodate the increased number of trains running. This means levying OAOs' infrastructure cost charges as a rate per passenger kilometre would incentivise OAOs to consider the long-run fixed costs of running services during peak times.
- 4.23 Higher infrastructure cost charges for peak services would also provide OAOs with an incentive to explore opportunities for running new services during the off-peak. This could increase on-rail competition in the off-peak market, which in turn could provide passengers with a range of benefits, such as, lower ticket prices and improved service quality.
- 4.24 However, linking OAOs' infrastructure cost charges to how intensely their services are used could discourage them from trying to fill services with empty seats. There could be instances where the additional revenue an operator would receive from filling empty seats would be outweighed by the increase in their infrastructure cost charge.
- 4.25 As with vehicle miles, the number of passenger kilometres OAOs are charged for could be capped to avoid OAOs being discouraged from trying to fill empty seats on their services. The cap could be set as a proportion of the seats that are filled on each train. For instance, if the cap was set at 75% of seats and 100% of seats on a train were utilised, the OAO would only pay for the passenger kilometres accumulated by 75% of the seats. We will consider this cap in more detail if we conclude OAOs infrastructure cost charges should be levied as a rate per passenger kilometre.
- 4.26 Levying OAOs infrastructure cost charges as a rate per passenger kilometre could impose significant transitional costs on Network Rail to update their billing system. Passenger kilometres are not currently used to bill operators for any existing track access charges.

Summary of assessment

- 4.27 The table below summarises our assessment of each unit of traffic.

4.28 The three units of traffic are compared in more detail in an accompanying assessment³⁶.

4.29 The three units of traffic have been assessed against our PR18 outcomes and objectives. We have assessed the units of traffic against each other, because OAOs do not currently pay any charges intended to recover fixed costs means there is no counterfactual to assess each option against.

	Options		
	Train miles	Vehicle miles	Passenger kilometres
<p>Outcome: The network is efficient</p> <p>Objective: Ensure Network Rail can recover its total costs</p>	<p>Risk that Network Rail's infrastructure cost charges income from OAOs varies within a control period.</p> <p>OAOs' train miles are likely to be more stable than vehicle miles or passenger kilometres.</p>	<p>Risk that Network Rail's infrastructure cost charges income from OAOs varies within a control period.</p> <p>Compared to train miles, length of OAOs' trains more likely to vary.</p>	<p>Risk that Network Rail's infrastructure cost charges income from OAOs varies within a control period.</p> <p>Compared to train miles, number of passengers on OAOs' services more likely to vary.</p>
<p>Outcome: The network is better used</p> <p>Objective: Ensure operators take costs of service into account when using the network</p>	<p>Incentivise OAOs to consider the additional fixed costs they cause by adding new traffic to the network.</p>	<p>A rate per vehicle mile would not reflect the evidence on the drivers of the long-run fixed costs of using the network.</p>	<p>Incentivise OAOs to consider fixed costs driven by running trains at peak times of day.</p>
<p>Outcome: The network is better used</p> <p>Objective: Ensure all parties are incentivised to maximise value of capacity in use</p>	<p>Compared to vehicle miles or passenger kilometres a rate per train mile would have less of an impact on OAOs' incentives to make best use of the network.</p>	<p>Could discourage OAOs from running longer trains.</p> <p>Number of carriages OAOs are charged for could be capped to mitigate this risk.</p>	<p>Could discourage OAOs from filling empty seats.</p> <p>Proportion of full seats OAOs are charged for could be capped to mitigate this risk.</p>
<p>Outcome: The network is better used</p> <p>Objective: Ensure capacity is allocated on the basis of the cost of provision and value of use</p>	<p>Provide Network Rail with an indication of the additional fixed costs caused by additional OAO services joining the network.</p>	<p>As it is not clear the length of trains are a significant driver of fixed costs a rate per vehicle miles would not encourage Network Rail to consider fixed costs when allocating capacity.</p>	<p>Provide Network Rail with an indication of the additional fixed costs caused by additional OAO running on the network during peak times of day.</p>
<p>General objectives</p>	<p>Minimal changes required to Network Rail's billing system.</p>	<p>Minimal changes required to Network Rail's billing system.</p>	<p>Would require significant changes to Network Rail's billing system</p>

³⁶ Our draft assessment of these three units of traffic is available [here](#).

Proposal

4.30 Based on our assessment of the three options **we are proposing to levy OAOs' infrastructure cost charges as a rate per train mile.**

Approach for levying infrastructure cost charges on franchised passenger operators

- 4.31 Currently FTAC is levied on franchised passenger operators on a fixed lump-sum basis, based on forecasts of their traffic. This means each operator's FTAC does not vary in response to changes in the level of their services during a control period.
- 4.32 When understanding the effects of levying charges in a different way, it is useful to consider the effects on Network Rail and operators.
- 4.33 In respect of Network Rail's incentives to add services to the network during a control period. When franchised services are added to the network within a control period Network Rail only recovers short-run marginal costs and potentially faces higher performance regime costs. Network Rail's incentives to add traffic to the network are an important consideration for our approach to levying infrastructure charges on franchised passenger operators, particularly following our decision to remove the capacity charge in CP6. The capacity charge aimed to neutralise additional performance regime costs that Network Rail faces when it adds traffic to the network.
- 4.34 We note that the volume incentive is also a mechanism currently in place which is designed to provide Network Rail with incentives to accommodate unanticipated (i.e. not forecast) growth on the network, but which relies on providing Network Rail with a credible 'promise' of additional revenue in the next control period. We will be shortly consulting on the volume incentive (in November 2017) and we will highlight in that consultation how our proposals on the volume incentive might be impacted by our proposals on infrastructure cost charges, and particularly how these charges are levied on franchised passenger operators. We expect to set out final proposals on both infrastructure cost charges and the volume incentive as part of our draft determination, which will seek to provide effective incentives to Network Rail in terms of making best use of network capacity.
- 4.35 In respect of the operators, under the existing approach, any additional services (i.e. not forecast) that franchised passenger operators choose to run during a control period would not contribute towards the fixed costs of running the network. As a result, franchised passenger operators are not incentivised to consider the long-run fixed costs additional services impose on the network.
- 4.36 In addition, if infrastructure cost charges are extended to all operators it is important that services added to the network within a control period face similar incremental charges, whether a franchised passenger operator or OAO provides the service. If

franchised passenger operators' infrastructure cost charges were levied on a fixed lump-sum basis they would not face any additional infrastructure cost charges for adding a new service during a control period. In contrast, OAOs would pay a rate per unit of traffic for each additional service they run³⁷. This means franchised and OAOs would not be competing on an equal footing and it would distort Network Rail's incentives when deciding between adding franchised or open access services to the network.

4.37 Due to these issues with levying infrastructure cost charges on franchised passenger operators as a fixed lump-sum, we have considered three alternatives. The three options we have considered mean that franchised operators' infrastructure cost charges would reflect changes in the level of franchised services these operators run during a control period.

4.38 We have considered levying infrastructure cost charges on franchised operators as:

- a rate per unit of traffic on all services run by franchised passenger operators;
- annually adjust franchised operators' infrastructure cost charges to reflect changes in actual traffic; and
- annually adjust franchised operators' infrastructure cost charges to reflect changes in timetabled traffic.

4.39 Below is a description of each option, and a summary of our assessment. Our assessment of each option is relative to levying infrastructure cost charges on franchised passenger operators as a lump-sum charge, fixed for the control period.

Rate per unit of traffic on all services run by franchised passenger operators

Description of option

4.40 Infrastructure cost charges would be levied on franchised passenger operators as a rate per unit of traffic for each service they run. This is the same approach that would be used if infrastructure cost charges are levied on OAOs in CP6.

4.41 Franchised passenger operators would be billed for the services that they run, multiplied by an infrastructure cost charge rate. The unit rate would be based on the fixed costs allocated to each service, potentially using the updated cost allocation methodology Network Rail is developing.

4.42 The costs allocated to operators would be net of all other income and any network grant, as is currently the case with FTAC. This means the level of the network grant in CP6 could potentially have a material impact on the infrastructure cost charges

³⁷ This would depend on the results of the MCB test, and which types of OAO services (i.e. market segments) we determined were able to bear infrastructure cost charges.

franchised passenger operators pay and Network Rail's income. Our working assumption is that there will be a network grant in CP6 and that it will continue to account for the majority of Network Rail's income. We will reassess the impact of this option if this assumption proves to be incorrect.

4.43 The arguments set out above for using each unit of traffic to levy infrastructure cost charges on OAOs are very similar for franchised passenger operators. Therefore, based on our assessment of the unit of traffic to use for OAOs' infrastructure cost charges, we currently recommend using a rate per train mile for franchised passenger operators under this option. We will consider this in more detail if we take this option forward.

Assessment of option

4.44 Franchised passenger operators would pay a rate per unit of traffic for all services they run, including services they add to the network during a control period. This would provide franchised passenger operators with an incentive to consider the long-run fixed costs caused by services they add to the network during a control period.

4.45 This option would provide Network Rail with stronger incentives to add new franchised services to the network during a control period. Network Rail would recover both short-run variable and a proportion of long-run fixed costs from new franchised services added within a control period; under a fixed lump-sum approach, Network Rail would only recover short-run marginal costs from additional services.

4.46 Franchised passenger operators account for the majority of services on the network, therefore this option would increase the proportion of Network Rail's income that is variable. This would create a risk that Network Rail could experience revenue increases or shortfalls during a control period. However, as franchised passenger operators have relatively long-term franchise agreements that specify the level of services they run, we do not see this significantly increasing the volatility of Network Rail's income. Network Rail analysis indicates that passenger traffic regularly varies by only $\pm 1\%$ each year.

4.47 The volatility of Network Rail's income and the infrastructure cost charges paid by franchised passenger operators under this option would also depend on the accuracy of the traffic forecasts for each year of the control period (as the rate per train mile would likely be calculated based on those forecasts, and the level of income recovered by Network Rail during the control period would depend on how accurate those forecasts were).

Annually adjust franchised operators' infrastructure cost charges to reflect changes in actual traffic

Description of option

- 4.48 Franchised passenger operators would pay a lump-sum infrastructure cost charge based on forecasts of their traffic levels for each year of the control period. However, unlike the current FTAC approach, each operators' charge would be re-calculated at the end of each year, to reflect any differences between the level of services they were forecast to run and the number they actually ran.
- 4.49 For any services above their forecast, franchised passenger operators would pay a rate per unit of traffic. Conversely, if an operator ran fewer services than forecast their infrastructure cost charge would be lowered based on a rate per unit of traffic. Franchised passenger operators' total infrastructure cost charges for the following year would then be updated to reflect the adjustment.
- 4.50 Fixed costs would be allocated to franchised passenger operators, potentially using the new cost allocation methodology Network Rail is developing.
- 4.51 Three approaches could be used to set the rate per unit of traffic. It could be based on the full fixed costs allocated to each franchised service; the full fixed costs allocated to each franchised service minus a proportion of the network grant; or at the rate the MCB test sets for each market segment. If set at the rate the MCB sets for each market segment, franchised passenger operators would pay the same rate as OAOs on incremental services added in each market segment.
- 4.52 We currently recommend using a rate per train mile to annually adjust franchised passenger operators' infrastructure cost charges under this option. This is based on our assessment of the unit of traffic to use to levy infrastructure cost charges on OAOs.
- 4.53 The rate per unit of traffic could be set at different levels of disaggregation. For example, it could be a rate for each franchised passenger operator, calculated as the average of the rates across all their services. Other options include setting the rate per unit of traffic at the service code level.

Assessment of option

- 4.54 At this stage, our assessment of this option focuses on the impacts of adjusting franchised passenger operators' infrastructure cost charges when their actual traffic deviates from a forecast. We have not assessed the unit of traffic that would be used for the rate per unit of traffic, how the rate per unit of traffic would be set, or what level of aggregation the rate per unit of traffic would be set at. These aspects will be considered in detail if we conclude this option should be developed further.

- 4.55 Franchised passenger operators would pay an incremental charge for adding new services to the network within a control period. This means this option would affect franchised passenger operators and Network Rail's incentives to make better use of the network in a similar way to the option of levying the charge as a rate per unit of traffic rate for all franchised services.
- 4.56 The rate per unit of traffic would provide franchised passenger operators with an incentive to consider the long-run fixed costs on the network caused by the services they add to the network during a control period. Meanwhile the increased revenue Network Rail would receive from additional franchised services would improve its incentives to add new traffic to the network (noting that any significant reduction in this traffic within the control period would reduce Network Rail's income).
- 4.57 The strength of the incentives sent to franchised passenger operators and Network Rail under this option would depend on how the rate per unit of traffic for additional services is set. The incentives would be strongest if the rates per unit of traffic were based on the full fixed costs allocated to each service. The cost for franchised passenger operators and the revenue for Network Rail for each new franchised service added during a control period would be highest under this approach.
- 4.58 Franchised passenger operators' infrastructure cost charges, and the income Network Rail receives from these charges would be more volatile under this option, compared to if the charges were levied as a fixed lump-sum.
- 4.59 However, in practice we do not expect infrastructure cost charges to be significantly more volatile under this option. This is primarily because franchise agreements specify the number of services franchised passenger operators have to run, this means the actual number of franchised services run should be similar to the level forecast.
- 4.60 There is a risk that factors outside franchised passenger operators and Network Rail's control significantly affects the actual number of services that franchised passenger operators run in a year. For example, severe weather could cause franchised passenger operators to cancel a significant number of services. In such a scenario the annual adjustment under this option would lower franchised passenger operators' infrastructure cost charges and Network Rail may be unable to recover its total costs.
- 4.61 Franchised passenger operators and Network Rail could be protected to some extent against this risk by capping the number of additional services they pay for when they run more services than forecast, and capping the number of services they receive a rebate for when they run fewer services than forecast. We will consider the implications of capping further if we conclude franchised passenger operators'

infrastructure cost charges should be adjusted annually to reflect changes in actual traffic.

Annually adjust franchised operators' infrastructure cost charges to reflect changes in timetabled traffic

Description of option

- 4.62 As with the previous option, franchised passenger operators' lump-sum infrastructure cost charges would be adjusted annually during the control period. The difference with this option is that the annual adjustment would be based on the difference between operators' forecast traffic and services included in the timetable for each year, as opposed to actual traffic run.
- 4.63 If a franchised passenger operator included more services in the timetable than forecast, they would pay a rate per unit of traffic for each additional service. While if timetabled traffic was below the level forecast, their infrastructure cost charge would be lowered, by a rate per unit of traffic.
- 4.64 As with the two options already discussed, fixed costs would be allocated to franchised passenger operators, potentially using the new cost allocation methodology Network Rail is developing.
- 4.65 In terms of the rate per unit of traffic we recommend using a rate per train mile, based on our assessment of unit of traffic to use for OAOs' infrastructure cost charges.
- 4.66 The choices around the approach to set the rate per unit of traffic and the level of disaggregation of the charge, are the same as for the option in which franchised passenger operators' infrastructure cost charges are adjusted for actual services run.

Assessment of option

- 4.67 Our assessment of this option so far has not considered in detail what unit of traffic should be used, the approach to setting the rate per unit of traffic or the level of disaggregation of the charge. We will consider all these areas thoroughly if we conclude this option should be taken forward.
- 4.68 As franchised passenger operators would pay a rate per unit of traffic for adding new services to the timetable during a control period, it would provide them with an incentive to consider the long-run fixed costs these services cause on the network.
- 4.69 The rate per unit of traffic for franchised services added to the timetable during a control period would also provide Network Rail with more revenue than they currently receive in relation to such additional services (i.e. Network Rail currently only receives additional variable charging income), increasing Network Rail's incentives to add traffic to the network.

- 4.70 As with the previous option, the strength of these incentives for franchised passenger operators and Network Rail depends on the approach used to set the rate per unit of traffic for new services added to the timetable during a control period. Under this option, the incentives would also be strongest if the rate per unit of traffic was based on the full fixed costs allocated to each service.
- 4.71 Compared to levying infrastructure cost charges as a fixed lump-sum which does not vary during the control period, this option would also increase the volatility of the infrastructure cost charges franchised passenger operators pay and the income Network Rail receives.
- 4.72 However, franchised passenger operators' infrastructure cost charges and Network Rail's income should remain relatively stable due to franchise agreements specifying the level of services franchised passenger operators are required to run.
- 4.73 In addition, Network Rail would not face the risk of a revenue shortfall if a significant number of franchised services were cancelled due to disruption on the network. As cancelled services are included in the timetable franchised passenger operators' infrastructure cost charges would not be lowered due to cancelled services.
- 4.74 To adjust franchised passenger operators' infrastructure cost charges based on changes in timetabled traffic, each operators' services in the timetable would have to be converted into the unit of traffic used for the payment rate. A possible option is to use Network Rail's NETRAFF database. NETRAFF records operators' train miles based on timetabled traffic. The most recent years of timetabled data from NETRAFF show significant year-on-year fluctuations in train miles. Therefore, before proceeding with this option we would need to work with Network Rail in order to better understand whether the data contained in the NETRAFF system (or any other system) can be used to underpin an annual adjustment to franchised passenger operators' infrastructure cost charges.

Summary of assessment

- 4.75 The table below summarises our assessment on the options for levying infrastructure cost charges on franchised passenger operators.
- 4.76 These three options have been considered in more detail in the accompanying impact assessment³⁸.
- 4.77 The three options have been assessed against our PR18 outcomes and objectives relative to levying infrastructure cost charges on franchised passenger operators as a lump-sum that does not vary in response to changes in the level of franchised services during a control period, i.e. the current approach for levying FTAC.

³⁸ Our draft impact assessment of these three options is available [here](#).

	Options		
	Rate per unit of traffic on all services run by franchised passenger operators	Annually adjust franchised operators' infrastructure cost charges to reflect changes in <u>actual</u> traffic	Annually adjust franchised operators' infrastructure cost charges to reflect changes in <u>timetabled</u> traffic
<p>Outcome: The network is efficient</p> <p>Objective: Ensure Network Rail can recover its total costs</p>	<p>Increase proportion of Network Rail's income that varies with traffic.</p> <p>Franchise agreements reduce risk of Network Rail's income becoming significantly more volatile.</p>	<p>Increase proportion of Network Rail's income that varies with traffic.</p> <p>Franchise agreements reduce risk of Network Rail's income becoming significantly more volatile.</p> <p>Circumstances outside operators and Network Rail's control may affect number of services actually run. A cap on services included in the adjustment could mitigate this risk.</p>	<p>Increase proportion of Network Rail's income that varies with traffic.</p> <p>Franchise agreements reduce risk of Network Rail's income becoming significantly more volatile.</p> <p>NETRAFF data shows timetabled train miles vary significantly each year. This appears to be an error in the database, which Network Rail is investigating.</p>
<p>Outcome: The network is better used</p> <p>Objective: Provide effective incentives for Network Rail to add traffic to the network</p>	<p>Network Rail would have a more effective incentive to add franchised services to the network during a control period.</p>	<p>Network Rail would have a more effective incentive to add franchised services to the network during a control period.</p> <p>Strength of the incentive depends on proportion of fixed costs recovered from each additional service.</p>	<p>Network Rail would have a more effective incentive to add franchised services to the network during a control period.</p> <p>Strength of the incentive depends on proportion of fixed costs recovered from each additional service.</p>
<p>Outcome: The network is better used</p> <p>Objective: Ensure operators take costs of service into account when using the network</p>	<p>Franchised operators incentivised to consider fixed costs caused by services they add during a control period.</p> <p>Incentive weakened if franchised operators held neutral to changes in infrastructure cost charges, or if charge does not reflect full fixed costs caused by additional services.</p>	<p>Franchised operators incentivised to consider fixed costs caused by services they add during a control period.</p> <p>Incentive weakened if franchised operators held neutral to changes in infrastructure cost charges, or if charge does not reflect full fixed costs caused by additional services.</p>	<p>Franchised operators incentivised to consider fixed costs caused by services they add during a control period.</p> <p>Incentive weakened if franchised operators held neutral to changes in infrastructure cost charges, or if charge does not reflect full fixed costs caused by additional services.</p>
<p>Outcome: The network is better used</p> <p>Objective: Ensure capacity is allocated on the basis of the cost of provision and value of use</p>	<p>Network Rail could allocate capacity based of long-run cost of provision if charges are informed by accurate information on the fixed costs caused by each service.</p>	<p>Network Rail could allocate capacity based of long-run cost of provision if charges are informed by accurate information on the fixed costs caused by each service.</p>	<p>Network Rail could allocate capacity based of long-run cost of provision if charges are informed by accurate information on the fixed costs caused by each service.</p>

	Options		
	Rate per unit of traffic on all services run by franchised passenger operators	Annually adjust franchised operators' infrastructure cost charges to reflect changes in <u>actual</u> traffic	Annually adjust franchised operators' infrastructure cost charges to reflect changes in <u>timetabled</u> traffic
General objectives	<p>Low information requirements if levied as a rate per train mile.</p> <p>Transitional costs for Network Rail to update its billing system.</p> <p>Transitional costs for franchise authorities to change approach to holding franchised passenger operators neutral to changes in charges intended to recover fixed costs.</p>	<p>Low information requirements for Network Rail as TABS database records actual traffic.</p> <p>Transitional costs for Network Rail to update its billing system.</p> <p>Transitional costs for franchise authorities to change approach to holding franchised passenger operators neutral to changes in charges intended to recover fixed costs.</p>	<p>Network Rail to address issues with NETRAFF database, or find another data source that expresses timetabled data as a unit of traffic.</p> <p>Transitional costs for Network Rail to update its billing system.</p> <p>Transitional costs for franchise authorities to change approach to holding franchised passenger operators neutral to changes in charges intended to recover fixed costs.</p>

Proposal

4.78 Based on our assessment of the three options, we are proposing to **adjust franchised operators' infrastructure cost charges to reflect changes in timetabled traffic, on an annual basis.**

4.79 This proposal is subject to the availability of a robust data source on franchised passenger operators' timetabled traffic. We will continue to work with Network Rail to investigate if the NETRAFF database could be used to measure franchised passenger operators' annual timetabled traffic, or if there is another data source available.

Consultation questions

Question 4.1: Do you have any comments on our proposal to levy any infrastructure cost charges on open access operators as a rate per train mile? Do you think there are any additional considerations we should include in our assessment of the different metric options?

Question 4.2: Do you have any comments on our proposed approach to varying franchised passenger operators' infrastructure cost charges in response to changes in traffic, on an annual basis. Do you have any comments on the particular approach we have proposed, which is based on changes in timetabled traffic, or any of the other options we have considered in our assessment?

Annex A: overview of legislative requirements for a market-can-bear test

1. The requirements for setting railway access charges are to be found in the Railways (Access, Management and Licensing of Railway Undertakings) Regulations 2016 (the “2016 Regulations”), which implement the underlying European directive 2012/34/EU (“Directive 2012/34”) establishing a single European railway area (recast). According to Schedule 3 of the 2016 Regulations, charges for the minimum access package should be set to reflect the “cost that is directly incurred as a result of operating the train service”. In practice, we have interpreted this to mean that charges should reflect the short-run (marginal) costs imposed on Network Rail by a service. Our existing charging framework includes a number of charges that reflect directly incurred costs, such as the variable usage charge (VUC).
2. However, the legislation also allows exceptions to this charging principle. The exception relevant to the recovery of infrastructure cost charges is the one allowing the infrastructure manager to levy a mark-up on charges (as specified in paragraph 2, Schedule 3 of the 2016 Regulations).
3. That paragraph 2 of Schedule 3 to the 2016 Regulations sets out the purpose of a mark-up, in that “in order to obtain full recovery of the costs incurred the infrastructure manager may levy mark-ups on the basis of efficient, transparent and non-discriminatory principles, whilst guaranteeing optimum competitiveness, in particular in respect of rail market segments”. It goes on to explain that the effect of the mark-up “must not be to exclude the use of infrastructure by market segments which can pay at least the cost that is directly incurred as a result of operating the railway service, plus a rate of return which the market can bear”.
4. We also have a number of statutory duties, set out in section 4 of the Railways Act 1993 and other legislation. We consider particularly relevant duties in this context to be:
 - (a) To promote the use of the railway network in Great Britain for the carriage of passengers and goods, and the development of that railway network, to the greatest extent that it considers economically practicable;
 - (b) To contribute to the achievement of sustainable development;
 - (c) To enable persons providing railway services to plan the future of their businesses with a reasonable degree of assurance;
 - (d) To promote competition in the provision of railway services for the benefit of users of railway services;

- (e) To have regard to the funds available to the Secretary of State for the purposes of his functions in relation to railways or railway services;
 - (f) Our duty which, in summary, requires that we have regard to the expenditure that is to be incurred by Scottish Ministers;
 - (g) To provide efficiency and economy on the part of persons providing railway services; and
 - (h) Otherwise to protect the interests of users of railway services.
5. We have previously (in PR08 and PR13), interpreted the requirements of the legislation as a test to be applied to determine relevant freight market segments, and which of those market segments should be subject to mark-ups. This is what we have referred to as the market-can-bear (or MCB) test throughout our PR18 policy documents.³⁹
 6. Schedule 3 of the 2016 Regulations sets out the market segments that should be defined as a minimum: freight services, passenger services within the framework of a public service contract, and other passenger services. However, in practice, this would be a high-level segmentation, and the resulting ability to bear assessment would be highly averaged (reflecting the varying ability to bear associated with services within each of the three high-level market segments).
 7. Previously, for freight services we have categorised services into market segments based on commodities carried. This ensures that the assessment of ability to bear costs reflects the specific commercial position of the services within each market segment.
 8. The initial proposals set out in this consultation on passenger market segmentation have been developed taking as a starting point the requirements in the legislation, and interpreting them to develop a bottom-up approach based on data sources and models available in the industry. Our proposals set out our current views informed by the technical work done to date. However, we will need to undertake more work in order to define specific passenger market segments, which we plan to do over the next few months, in advance of setting out final proposals for a passenger market segmentation in our June 2018 draft determination document.

³⁹ In PR08 we developed specific criteria for this test, while in PR13 we focused on explaining more explicitly how our policy proposals are consistent with the legislation and are an appropriate balancing of our statutory duties. The technical analysis undertaken in both periodic reviews was based on the principles set out in PR08 and the same methodology was used by our consultants.

9. We believe there is value in consulting on our work to date at this stage, to gather views from stakeholders particularly in terms of the technical analysis our consultants have done (e.g. data sources used etc.).

Annex B: ORR's role and approach in relation to track access applications

1. Under the Railways Act 1993 (the Act), we have an approval function in relation to track access contracts between Network Rail and train operators and amendments to them. If Network Rail and a train operator cannot agree the terms of a contract, the train operator can apply to ORR to issue directions requiring Network Rail to enter into a contract as determined by ORR under section 17 of the Act. T
2. We must decide track access applications in accordance with our duties as set out in section 4 of the Act and take the decision we consider is best calculated to result in the right balance of those duties. The weight we place on each duty is a matter for us depending on the circumstances of each case. Where the duties conflict we balance them against each other to help us reach a decision.
3. Although our duties are wide ranging, our experience generally is that a subset tend to be especially relevant to access decisions with the others not pointing strongly one way or the other. In this case, we considered all our duties; these were the most relevant:
 - promote improvements in railway service performance;⁴⁰
 - protect the interests of users of railway services;
 - promote the use of the network for passengers and goods;
 - promote competition for the benefit of rail users;
 - have regard to the funds available to the Secretary of State for certain purposes and his guidance; and
 - enable operators to plan the future of their businesses with a reasonable degree of assurance.

4. Our criteria and procedures⁴¹ state:

“We would not expect to approve competing services that would be primarily abstractive of an incumbent’s revenue without providing compensating economic benefits. To enable us to consider whether the proposed rights are primarily abstractive in nature we have established a five-stage test which we would apply when:

⁴⁰ Defined as reliability, avoidance or mitigation of overcrowding and journey times being as short as possible.

⁴¹ Paragraph 4.43.

- (a) a new open access service would compete with franchised services and so impact on the public sector funder's budget;
- (b) a new franchised service would compete with an existing franchised service where the competing services are supported by different funders or there are other concerns over the impact on a funder's budget; or
- (c) a new open access or franchised service would compete with an existing open access service, where that new service could force the existing open access operator to withdraw from the market and reduce overall competition on the network."

5. The five stages of the 'not primarily abstractive' test are:

- (a) Stage 1: using standard industry models (such as MOIRA14 and the passenger demand forecasting handbook) to make a broad estimate of the likely level of abstraction;
- (b) Stage 2: review the estimate established in Stage 1 with input from the applicant, potentially affected incumbent operators, funders and any other interested parties;
- (c) Stage 3: using benchmarking and survey information from other comparable situations to refine estimates produced by Stages 1 and 2;
- (d) Stage 4: assessing the likely impact of services one to two years after introduction to identify material impacts that would not occur immediately after introduction of the new services; and
- (e) Stage 5: will consider other relevant factors against quantitative assessment produced under Stages 1 – 4.

Annex C: list of consultation questions

Question 2.1: Do you have any views on our proposal to retain the existing freight market segmentation by commodity, and not introduce further market segments for any of the existing commodities?

Question 2.2: Do you have any views on our proposal to continue allowing Network Rail to levy infrastructure cost charges on freight trains carrying ESI coal, iron ore and spent nuclear fuel? Do you have any views on our proposal to allow Network Rail to levy infrastructure cost charges on trains carrying ESI biomass in CP6?

Question 2.3: Do you have any additional evidence around the ability to bear of any of the freight market segments reviewed by our consultants, which you would like to provide us to inform our final decision around which freight market segments are able to bear infrastructure cost charges in CP6?

Question 3.1: Do you have any views on the results of the technical analysis undertaken to date on passenger market segmentation (and ability to bear)? Do you have any views around how these emerging findings could inform a passenger market segmentation?

Question 4.1: Do you have any comments on our proposal to levy any infrastructure cost charges on open access operators as a rate per train mile? Do you think there are any additional considerations we should include in our assessment of the different metric options?

Question 4.2: Do you have any comments on our proposed approach to varying franchised passenger operators' infrastructure cost charges in response to changes in traffic, on an annual basis. Do you have any comments on the particular approach we have proposed, which is based on changes in timetabled traffic, or any of the other options we have considered in our assessment?



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