OFFICE OF RAIL AND ROAD

2018 periodic review draft determination

Supplementary document – Charges and incentives: Infrastructure cost charges consultation

June 2018

Contents

Context

The 2018 periodic review is the process through which we determine what Network Rail[1] should deliver in respect of its role in operating, maintaining and renewing its network in control period 6 (CP6)[2] and how the funding available should be best used to support this. This feeds through into the:

- service that passengers and freight customers receive and, together with taxpayers, ultimately pay for; and
- charges that Network Rail's passenger, freight and charter train operator customers will pay for access to its track and stations during CP6.

This document forms part of our draft determination, which sets out our overall decisions on PR18 for consultation. We have also published an overview document, setting out:

- our proposed decisions in all the main areas of PR18 and next steps; and
- a summary of how we will regulate Network Rail's delivery in CP6.

In addition, there are high-level summaries of our main decisions for each of England & Wales and Scotland. The full set of documents that form the draft determination is set out in the diagram below. After taking account of consultation responses, we will publish our final determination in October 2018.

A map of our earlier consultations and conclusions that have led up to our draft determination is available here.

Responding to the consultation on our draft determination

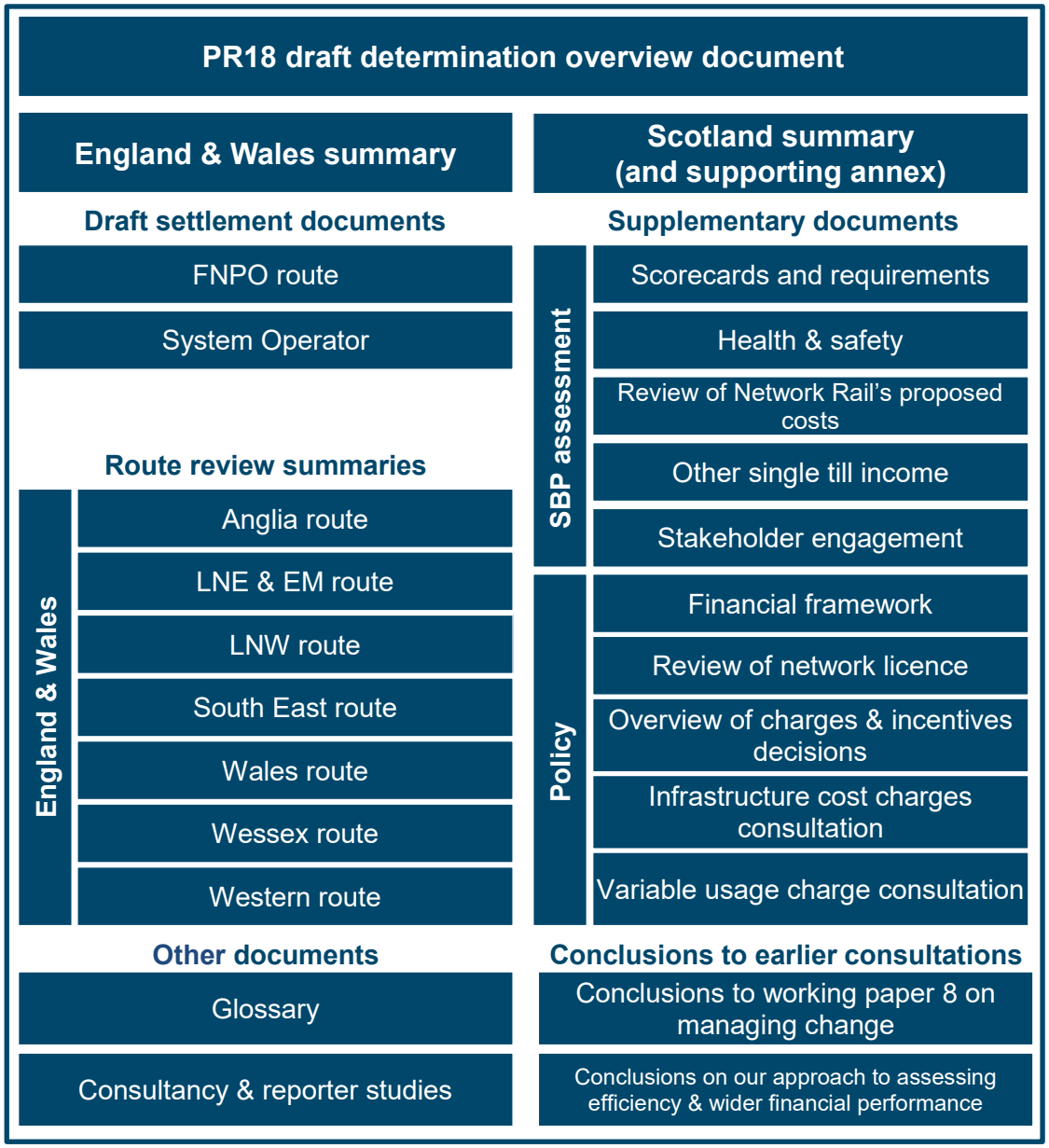
We welcome comments on this document and/or the other documents that form part of our draft determination by **Friday 31 August 2018**. Full details on how to respond are set out in Appendix B of our overview document. This includes how we will treat any information provided to us, including that which is marked as confidential. Subject to this, we expect to publish responses alongside our final determination in October 2018.

We have provided a pro-forma, should you wish to use this when responding. If you choose not to use the pro-forma, we would be grateful if you would make clear in your response that you are commenting on this supplementary document. This will assist our process for reviewing comments.

[1] All references to Network Rail in this document are to Network Rail Infrastructure Limited.

[2] CP6 will run from 1 April 2019 to 31 March 2024.

Our draft determination documents (includes weblinks)*



*Please note that some documents, including consultancy and reporter studies and impact assessments, will be published following 12 June 2018.

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 charging review, one of the reforms we have chosen to prioritise is 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. We have called these charges infrastructure cost charges (ICCs).The aims of this reform 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 (around £4bn/year), fixed charges paid by franchised passenger operators (around £500m/year), and mark-ups paid by freight services carrying specific commodities (around £2m/year). There are also charges which operators pay for use of stations on the network, which cover both variable and fixed costs.

In September 2017, we consulted on some areas of the infrastructure cost charging approach[3], including: the market segmentation for freight services; a potential approach for defining market segments for passenger services; and the design of ICCs for passenger services. We also consulted on the technical analysis undertaken by our consultants, CEPA and Systra[4]. In September 2017, Network Rail also consulted on the new methodology it has been developing for allocating fixed network costs to all services running on the network. This new cost allocation could inform ICCs in control period 6 (CP6, which will run from 1 April 2019 to 31 March 2024).We have been working to finalise proposals in all areas of the ICC policy. This has included commissioning additional analysis in relation to biomass services, following feedback received to our September 2017 consultation.

[3] *PR18 consultation on charges recovering fixed network costs*, Office of Rail and Road, September 2017. This may be accessed here.

[4] *PR18 Structure of charges review – Market can bear analysis: Freight services*, Cambridge Economic Policy Associates, September 2017. This may be accessed here. And *PR18 Structure of charges review – Market can bear analysis: Passenger services*, Cambridge Economic Policy Associates & Systra, September 2017. This may be accessed here.

In this consultation, which accompanies our draft determination, we are setting out final proposals on all outstanding areas of the infrastructure cost charging approach.

The key proposals we are consulting on are to:

- confirm the use of Network Rail's new cost allocation methodology, excluding the elements of the methodology that allocate non-avoidable costs to services, to set ICCs for CP6;
- continue to allow Network Rail to levy ICCs on freight services carrying electricity supply industry coal, iron ore and spent nuclear fuel in CP6. ICCs for these market segments will be set to maintain the overall level of charges constant (per thousand gross tonne mile) between CP5 and CP6 (excluding the impact of changes in our approach to indexation);
- confirm electricity supply industry biomass as a market segment able to bear ICCs in CP6, given the limited impact an increase in rail charges would have on the volume of electricity generated from biomass, or on the volume of biomass transported by rail. ICCs for biomass in CP6 will be set at a conservative level of £1.3/thousand gross tonne mile;
- not define any further market segments for franchised passenger operators;
- define two market segments for open access operator (OAO) services: interurban and other services. Interurban services would be defined as able to bear ICCs in CP6;
- not subject existing OAOs to ICCs in CP6, unless they apply for (and are granted) different access rights, based on an updated access policy;
- confirm that ICCs for new entrant interurban OAOs services will be phased in according to the profile set out in this consultation. The level of ICCs for interurban services will be set conservatively at £4/train mile; and
- vary ICCs (fixed track access charges) for franchised passenger operators based on variations in timetabled train miles (on an annual basis, and adjust them ex-post to reflect outturn). We are consulting on two options for limiting Network Rail's exposure on the downside.

Introduction

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

2. The charges train operators pay to access the network are a combination of:

   - charges recovering variable costs – e.g. the variable usage charge (VUC), or the electrification asset usage charge (EAUC); and
   - charges recovering fixed costs – e.g. the Freight Specific Charge (FSC) and the Freight Only Line (FOL) charge, or the fixed track access charge (FTAC) paid by franchised passenger operators.

3. This consultation covers charges that recover Network Rail's fixed costs, i.e. those costs that do not vary in the short-term. For control period 6 (CP6, which will run from 1 April 2019 to 31 March 2024), we have called these infrastructure cost charges (ICCs). These charges are levied as mark-ups on the directly incurred costs (which Network Rail recovers primarily through the VUC), in accordance with the requirements of the European and domestic legislation[5].

4. We have also made a number of other policy decisions in relation to the charging structure for CP6, which are set out in the PR18 draft determination supplementary document on charges and incentives[6]. Annex A of that document provides a high-level overview of the proposed charging structure for CP6, for different types of operators. This is based on policy decisions we have already made (as set out in the supplementary document), as well as policy we are currently consulting on in relation to the VUC and ICCs.

5. Applying charges to recover fixed costs from all operators has the potential to improve the incentives and information available to Network Rail, operators and 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 competition[7]. This approach has the potential to improve competition between passenger services over the longer-term. This is because it

[5] The requirements for setting railway access charges are 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).

[6] *PR18 draft determination - Supplementary document: Overview of charges and incentives decisions*, Office of Rail and Road, June 2018. This may be accessed here.

[7] *Competition in passenger rail services in Great Britain: A policy document*, Competition & Markets Authority, March 2016. This may be accessed here.

would allow open access operators (OAOs) to contribute an appropriate amount towards fixed costs where they are able to, in exchange for having greater access to the network.

6. We consulted on elements of our ICC policy in September 2017. We have since had discussions with stakeholders, and undertaken further analysis, in order to develop final proposals.

Purpose and scope of this consultation

7. This consultation sets out our final proposal in relation to ICCs for CP6. We are publishing this consultation alongside our draft determination, which sets out our expectations of what Network Rail should deliver over CP6, and the funding required to do so.

8. The key areas in which we are setting out proposals are:

   - how costs are allocated to services (cost allocation);
   - which services (i.e. market segments) are potentially subject to an ICC (determined through a market-can-bear (MCB) test);
   - the structure/design of ICCs; and
   - the level of the charge for each market segment.

9. Over the past year, we have been developing our approach in all of these areas, in consultation with Network Rail, governments and industry. We have consulted on proposals in some areas. In other areas (e.g. the cost allocation), Network Rail has been leading the consultation process, with our role being to take a final decision. In other areas, we have not yet set out firm proposals.

10. Table 1 provides an overview of what we have said to date in each of these areas, and what we are setting out as part of the draft determination.

Table 1: Position to date on ICCs

Area of proposals	Position to date
Approach to allocating costs	Network Rail consulted on its new cost allocation methodology in September 2017 – we have reviewed responses to its consultation, as well as feedback we received in relation to the new methodology in response to our September 2017 consultation. In April 2018, we published a letter updating industry on our review of charges and incentives. In this letter, we set out our intention to consult, as part of the draft determination, on using Network Rail's new cost allocation methodology, excluding the elements of the methodology that allocate non avoidable costs to services, to set ICCs in CP6. We are setting out a final proposal around the use of Network Rail's new cost allocation methodology in CP6, in **Chapter 1**.
Market segmentation	In 2017, we appointed consultants to undertake analysis to inform our PR18 MCB assessment for both freight and passenger services. This involved reviewing the MCB assessment for various freight commodities, and developing an approach to defining market segments for passenger services (not previously undertaken). **Freight** In September 2017 we consulted on: • retaining the existing approach to market segmentation; • continuing to define freight trains carrying electricity supply industry (ESI) coal, iron ore and spent nuclear fuel, as market segments able to bear ICCs in CP6; and • defining trains carrying ESI biomass as a market segment able to bear ICCs in CP6. In this consultation, we are setting out final proposals around which freight market segments should be in scope for ICCs, in **Chapter 2.** **Passenger** In September 2017, we set out emerging findings from our consultants' work on the types of services that appear to have the ability to pay ICCs. We said that these emerging results could inform a market segmentation. We are setting out final proposals around the passenger market segmentation, for both franchised operators and OAOs, in **Chapter 3**.
Structure/design of the charge	**Freight** In our June 2017 charges and incentives conclusions letter, we confirmed our decision to merge the two existing freight mark-ups. In our September 2017 consultation, we proposed not to make any other changes to the design of ICCs for freight services. **Passenger** In our September 2017 consultation, we proposed levying ICCs for open access services as a rate per train mile.

Area of proposals	Position to date
	We proposed to retain the existing approach to recovering fixed costs from franchised passenger operators – i.e. they would continue to pay a lump sum FTAC. However, we proposed to vary this lump-sum payment based on differences between forecast and actual timetabled train miles. In **Chapter 3**, we set out final proposals around the design of ICCs for passenger services.
Level of the charge for each market segment	The level of ICCs for each market segment would be informed by our assessment of what the market can bear, and by changes in the overall level of other charges. This includes ORR policy decisions around charges and incentives, recalibration of charges, and changes in Network Rail's cost base. We have developed a PR18 charges and incentives impact model, which has allowed us to understand the scale of changes in the level of charges for various segments (e.g. commodities) or types of operators (e.g. franchise passenger versus open access) resulting from policy changes and recalibration. In this consultation, we are setting out proposals on the level of ICCs for the market segments that we have proposed should pay these charges in CP6. These proposals are set out in the chapters relating to freight and passenger services respectively.

11. We outlined in our September 2017 consultation that, should we conclude to levy ICCs on all types of operators (including OAOs) in CP6, we will need to revisit our access policy (including the not-primarily abstractive test), to determine what changes might be needed. We provide more detail on this in Chapter 3.

Structure of this consultation

12. The rest of this consultation document is structured as follows:

- **Chapter 1** sets out a summary of our assessment of the new cost allocation methodology Network Rail has been developing. We also set out a proposal regarding the use of this methodology to set charges in CP6;
- **Chapter 2** sets out our proposals on ICCs for freight services in CP6, including which market segments should be in scope for ICCs, and proposals for the level of the charges for each market segment; and
- **Chapter 3** sets out our proposals on ICCs for passenger services in CP6, including on an approach to segmenting the market, approach to implementing ICCs for open access services, design of charges and the level of ICCs for passenger services.

13. We are also publishing a number of supporting documents alongside this consultation:

- draft impact assessment on the Network Rail cost allocation methodology[8];
- final impact assessment of units of traffic for levying ICCs on OAOs[9];
- final impact assessment on approach for levying ICCs on franchised passenger operators[10];
- draft impact assessment on the detailed design of franchised passenger operator ICCs[11];
- technical report assessing the impact of increases in track access charges on the transport of biomass by rail[12]; and
- responses to the September 2017 consultation[13].

[8] *Draft impact assessment on Network Rail's cost allocation methodology*, Office of Rail and Road, June 2018. This may be accessed here.

[9] *Final impact assessment of units of traffic for levying ICCs on OAOs*, Office of Rail and Road, June 2018. This may be accessed here.

[10] *Final impact assessment on approach for levying ICCs on franchised passenger operators*, Office of Rail and Road, June 2018. This may be accessed here.

[11] *Draft impact assessment on the detailed design of franchised passenger operator ICCs*, Office of Rail and Road, June 2018. This may be accessed here.

[12] *The potential impact of increases in track access charges on the transport by rail of biomass*, MDS Transmodal, April 2018. This may be accessed here.

[13] Responses to PR18 consultation on charges recovering fixed network costs, Office of Rail and Road, June 2018. This may be accessed here.

1. Network Rail's new cost allocation methodology

Introduction

1.1 In order to calculate the ICC for any market segment, the first step is to determine the level of fixed costs allocated to different types of services. The level of fixed costs allocated to a service is the maximum ICC payable.

1.2 This chapter considers how to allocate fixed costs to different types of services in CP6.

Existing approaches for allocating fixed costs to services

1.3 The current approaches used to allocate Network Rail's fixed costs to services vary by type of operator:

- **freight services**: in PR13, Network Rail appointed consultants 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)[14].
- **franchised passenger services**: FTAC is calculated by allocating Network Rail's net revenue requirement for each route[15] to franchised passenger operators based on their forecast usage of that route for each year of the next control period.
- **open access passenger services**: no fixed costs are currently allocated to open access passenger services (even notionally).

Network Rail's new cost allocation methodology

1.4 In 2014, Network Rail appointed Brockley Consulting to undertake a review of cost allocation approaches in the rail industry, and explore potential alternatives.

[14] *Estimating Freight Avoidable Costs*, L.E.K. Consulting, October 2012. This may be accessed here.

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

1.5 Network Rail first completed a pilot study for a new cost allocation methodology on the Wales route[16]. The methodology developed for the pilot study was subsequently applied to the rest of the network.

1.6 The focus of the new methodology is on allocating Network Rail's fixed costs (i.e. those costs that do not vary with use in the short-term) to train services. These include the costs of operating, maintaining, renewing and enhancing the rail network. For each cost category, the new methodology seeks to establish a link between use (specifically different types of use – e.g. heavy versus light trains) and how costs vary in the long-run. Where a link between use and costs can be established, the methodology talks about "avoidable costs" (i.e. because these costs could be avoided, in the long-term, if that specific type of traffic ceased to operate). Where a link cannot be established between a specific use and costs (i.e. costs are driven by the existence of a network in general, rather than by a specific type of traffic), the methodology talks about "non-avoidable costs".

1.7 The new methodology developed by Network Rail makes several refinements to the current (CP5) methodology for allocating FTAC (and Network Rail's fixed costs more generally) to franchised passenger operators. We provide a high-level overview of each of these refinements below. More detail on each refinement is available in the technical report produced by Brockley Consulting for Network Rail[17].

Allocate costs to all operators

1.8 Network Rail's fixed costs are allocated to all operators (i.e. including freight operators and OAOs), based on each operator's share of specified traffic metrics (the same metrics as those used as part of the CP5 FTAC allocation methodology)[18].

Geographical disaggregation of the cost base

1.9 The costs for each Network Rail route are allocated to smaller units of the network, specifically route sections. The costs of each route section are allocated to services

[16] *Cost allocation pilot study: modelling and results*, Brockley Consulting, June 2016. This may be accessed here.

[17] *A new method for allocating network fixed costs*, Brockley Consulting, September 2017. This may be accessed here.

[18] The methodology also allocates costs to all operators that run on the Scotland operating route, and franchised passenger operators specified by Transport Scotland are allocated costs on all the routes they run on. However, for franchised passenger services Network Rail has included a 'funding adjustment' to maintain the current approach of only allocating costs on the Scotland route to Scottish franchised operators and not to allocate any costs to Scottish franchised operators for the other routes they run on. This is to reflect the existing funding arrangement between DfT and Transport Scotland. It should be noted that even after the funding adjustment, costs on the Scotland route are allocated to freight and open access services.

running on each section using specified traffic metrics (the same metrics as those used as part of the CP5 FTAC allocation methodology).

Avoidable cost approach

1.10 The new Network Rail cost allocation methodology distinguishes between two types of avoidable costs:

- 'traffic characteristic' avoidable costs; and
- 'vanilla' traffic avoidable costs to services.

1.11 Network Rail has labelled these two cost categories, together, as "traffic related avoidable costs".

1.12 Traffic characteristic avoidable costs are the costs that would be avoided by removing traffic with specific characteristics, such as high-speed or electrified trains. The traffic characteristic avoidable costs are allocated only to the services with those characteristics, as part of the new cost allocation methodology. For example, the costs that would be avoided in the long-run by reducing the maximum line speed on a route section are allocated to fast services that run on that route section.

1.13 Vanilla traffic avoidable costs are costs that would be avoided in the long-run by removing traffic in general. For example, at minimal levels of traffic, only a single track would be needed and the cost of parallel tracks would, in the long-run, be avoided. These costs are allocated to services using each route section based on each service's share of the trains running on that route section.

1.14 Having identified traffic characteristic avoidable costs and vanilla traffic costs, the new methodology then considers the remaining costs associated with the rail network. These remaining costs are the costs that would be incurred on a "minimal traffic network". A minimal traffic network represents the assets required to facilitate minimum traffic levels (e.g. one train per day) and maintain the current connectivity of the network. Minimal traffic network costs are "non-avoidable" since they would be incurred regardless of changes to the type and volume of traffic that runs on the network.

1.15 The new cost allocation methodology allocates these non-avoidable costs (which Network Rail calls "minimum network fixed costs") to operators using two approaches:

- for cost categories where avoidable costs have been identified an "Equi-Proportional Mark-Up" (EPMU) approach is used to allocate these costs to services. The EPMU approach allocates non-avoidable costs to operators based on each operator's share of total avoidable costs (i.e. the sum of traffic characteristic and vanilla traffic avoidable costs); and

- for cost categories where no avoidable costs have been identified, costs are allocated to operators based on the operator's share of specified traffic metrics (the same metrics as those used as part of the CP5 FTAC allocation methodology for the majority of cost categories).

Allocate regulatory asset base (RAB) return on the basis of asset costs

1.16 Under the new cost allocation methodology, the RAB return is allocated to asset categories on the basis of estimated depreciated replacement cost. The current FTAC methodology allocates the RAB return to asset categories on the basis of the proportion of long-run renewals expenditure each category accounts for[19].

Revise the allocation of variable and third party income

1.17 The new Network Rail cost allocation methodology also makes changes to how Network Rail's variable and third party income is allocated to operators. For example, VUC income is allocated to operators based on forecasts of the amount each operator will pay in charges, as opposed to each operator's vehicle miles.

Revised allocations

1.18 The Brockley Consulting report shows how operators' fixed cost allocations would have been different in the final year of CP5, if the new cost allocation methodology had been used to allocate Network Rail's net revenue requirement to all operators.

1.19 Based on analysis undertaken by Network Rail, if the new cost allocation methodology was used to allocate fixed costs to services for CP6, fixed cost allocations increase in areas of the network that are inherently costly per mile, and for services that use those parts of the network. This includes urban services that run in areas that have a relatively high number of junctions and bridges. The main driver of this result is the geographical disaggregation of the cost base, which allocates the costs of more expensive assets (e.g. relating to bridges) only to the services using those assets, rather than all services using the route, as previously.

1.20 Conversely, fixed cost allocations decrease for services running on areas of the network that are relatively simple, such as inter-city services that tend to run on relatively flat and simple terrain.

1.21 The geographical disaggregation of the cost base in the new cost allocation methodology also increases the allocation for services that run on quieter areas of the network. This is due to the costs in these areas being spread across fewer

[19] We note that this methodology could apply in CP6 to Network Rail's forecast financing costs, as ORR will not calculate the RAB return as part of Network Rail's CP6 revenue requirement calculations.

services. The methodology has the opposite impact on the allocation for services running on busier parts of the network.

Network Rail's consultation

1.22 In September 2017, Network Rail consulted on its new methodology for allocating fixed costs to services[20].

1.23 The consultation sought stakeholder views on the proposal to use the new methodology to allocate fixed costs and variable and third party income to operators in CP6, including for the purpose of setting access charges.

Responses to the consultation

1.24 As well as responding to Network Rail's consultation, stakeholders also made comments on the new cost allocation methodology in response to our September 2017 consultation on charges recovering fixed network costs[21].

1.25 The responses to both consultations were generally supportive of allocating Network Rail's fixed costs using an avoidable cost approach. Most stakeholders agreed that this approach would increase the transparency around the drivers of fixed costs, and improve decision making in the rail industry.

1.26 However, stakeholders strongly opposed the proposal to allocate non-avoidable costs to services. Respondents explained that operators are unable to influence non-avoidable costs since these costs are not linked to any particular activity on the network and would still be incurred in order to maintain the current condition and connectivity of the network, even if no traffic was running. As a result, allocating non-avoidable costs to services would not provide any benefits in terms of increasing the transparency or knowledge around the drivers of fixed costs.

1.27 Stakeholders also raised concerns that the allocation of non-avoidable costs could create the impression that a high proportion of fixed costs could be avoided if certain services stopped running, which would not be the case.

[20] *Network Rail's consultation on its methodology for allocating fixed costs to train operators in Control Period 6 (CP6)*, Network Rail, September 2017. This may be accessed here.

[21] *PR18 consultation on charges recovering fixed network costs*, Office of Rail and Road, September 2017. This may be accessed here.

Network Rail's conclusions

1.28 Network Rail published its conclusions on the new cost allocation methodology on 4 May 2018[22].

1.29 In its conclusions document, following consideration of stakeholder feedback to its consultation, Network Rail revised its September 2017 proposal. The revised proposal is to allocate only traffic-related avoidable fixed costs to train operators in CP6. Network Rail proposes that the fixed costs associated with having a minimum network (i.e. non-avoidable costs) are allocated to funders, rather than train operators.

ORR review of Network Rail's new cost allocation methodology

1.30 We have undertaken an impact assessment of Network Rail's new cost allocation methodology, and as part of that have considered three options for allocating fixed costs to services in CP6:

- **'Do nothing' option**: Continue to use the existing approaches to allocate fixed costs to services[23].
- **Option 1**: Use the new Network Rail cost allocation methodology (as per Network Rail's September 2017 proposal).
- **Option 2**: Use the new Network Rail cost allocation methodology, excluding the allocation of non-avoidable costs to services (as per Network Rail's May 2018 proposal).

Summary of assessment

1.31 This assessment is based on our review of the methodology, and feedback from stakeholders. With the exception of the allocation of non-avoidable costs, stakeholders have not raised any significant concerns with the Network Rail cost allocation methodology.

1.32 FTAC recovers a large proportion of Network Rail's costs, and yet the methodology for calculating the charge is relatively simple and lacks cost reflectivity. Therefore, the main benefit of using the new cost allocation methodology (i.e. options 1 and 2) is

[22] *Network Rail's conclusions on its methodology for allocating fixed costs to train operators in Control Period 6 (CP6)*, Network Rail, May 2018. This may be accessed here.

[23] As stated previously, the FTAC methodology would be used to allocate fixed costs to open access services.

that it would improve the information available on the drivers of Network Rail's fixed costs.

1.33 The improved information on the drivers of fixed costs could help Network Rail identify ways to lower its fixed costs. For instance, the geographical disaggregation of the cost base would show how fixed costs vary in different areas of the network, allowing Network Rail to focus on areas of the network where long-run cost savings can be made.

1.34 This improved information could also be used by the bodies responsible for allocating capacity, such as ORR, funders and Network Rail, to better understand the long-run costs of different services joining the network. The traffic characteristic avoidable cost approach would show the long-run costs associated with adding different types of traffic to the network.

1.35 However, as stakeholders have highlighted, allocating non-avoidable costs to services would not improve the transparency of the drivers of fixed costs. The routine allocation of these costs to specific services could also lead to misunderstandings about the fixed costs different types of services cause. As a result, we consider that the information available on the drivers of fixed costs would be most improved under option 2, which does not allocate non-avoidable costs to any particular services.

1.36 There may, however, be times when it is useful to present an allocation of total Network Rail or industry cost, including of non-avoidable costs. It is, therefore, useful to have this information available, even it is not used to determine FTAC or the reported allocation of costs to each operator.

1.37 The three options have been considered in more detail in the accompanying impact assessment[24].

Final proposal

1.38 We are **proposing to use the new cost allocation methodology to allocate fixed costs to services, excluding the elements of the methodology that allocate non-avoidable costs to services (i.e. option 2).**

1.39 The fixed costs allocated to services under option 2 would be the upper bound for each service's ICC for CP6.

[24] *Draft impact assessment on Network Rail's cost allocation methodology*, Office of Rail and Road, June 2018. This may be accessed here.

2. Infrastructure cost charges for freight services

Introduction

2.1 In CP5, freight services carrying one of three commodities (ESI coal, iron ore or spent nuclear fuel) have been subject to ICCs (previously referred to as mark-ups, reflecting the language of the legislation). We determined which commodities would pay the FSC and FOL charge in CP5, and the level of these charges, based on an MCB test, which we undertook as part of our PR13 review of charges.

2.2 As part of our PR18 review of charges, we updated the MCB test for freight services, and also considered whether any changes should be made to the current approach to defining freight market segments.

Overview of September 2017 proposals

2.3 In our September 2017 consultation, we set 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 ICCs.

2.4 We proposed to retain the existing approach to market segmentation based on commodities carried and did not propose to define further market segments.

2.5 We proposed to allow Network Rail to continue to levy ICCs on freight trains carrying ESI coal, iron ore and spent nuclear fuel. In CP5, freight operators carrying these commodities have been subject to the FSC and FOL charge[25]. The analysis suggested that these commodities would still be able to bear these charges in CP6.

2.6 We also proposed that freight services carrying ESI biomass could bear an ICC in CP6. In PR13, we commissioned analysis that showed freight trains carrying ESI biomass[26] could potentially bear charges above directly incurred costs. However, given biomass was an emerging market with considerable uncertainty at the time, we concluded we would not allow Network Rail to levy a charge on these services in CP5. However, we stated we would revisit the issue in PR18.

2.7 High-level analysis undertaken by our consultants CEPA in 2017 (published alongside our September 2017 consultation[27]) suggested that freight services carrying ESI biomass could bear an ICC in CP6.

[25] In CP6 these two charges will be merged into one infrastructure cost charge.

[26] Biomass used in industries other than electricity generation tends to be transported by road.

[27] *PR18 Structure of charges review – Market can bear analysis: Freight services*, Cambridge Economic Policy Associates, September 2017. This may be accessed here

Summary of responses to September 2017 proposals

2.8 Respondents were largely supportive of retaining the existing freight market segmentation. Most respondents were also not opposed to continuing to levy ICCs on freight services carrying ESI coal, iron ore and spent nuclear fuel, at the existing level of charge.

2.9 However, most freight respondents were not supportive of levying ICCs on freight services carrying ESI biomass in CP6. The key arguments raised by respondents were:

(a) additional charges for biomass services would lead to higher costs for the biomass industry, which would result either in a switch to using road to transport biomass, or a switch away from burning biomass to other fuels. Respondents argued that both of these effects would lead to a reduction in biomass rail freight volumes and increased carbon emissions;

(b) additional charges for trains carrying ESI biomass would be contradictory to UK Government policy encouraging electricity generation from renewable sources; and

(c) additional charges for biomass services could be seen as penalising the industry for investing in rail. Some respondents were concerned that should biomass be categorised as a "captive" market, it may deter future investment in rail for freight purposes. There was also concern that the introduction of the charge could increase uncertainty for other rail freight industries that may also deter investment.

Further analysis in relation to biomass

2.10 In light of responses received from stakeholders around the proposal to allow Network Rail to levy ICCs on freight services carrying ESI biomass in CP6, we have undertaken further analysis and consideration of relevant evidence.

2.11 Having reviewed arguments made in response to our September 2017 consultation, we continue to consider that the economics of biomass generation mean that a change in rail transportation costs is unlikely to significantly affect the overall electricity generated from biomass. This means that biomass shipped would remain largely unchanged. In large part, this reflects the difference in the relative costs of shipping biomass by rail and by road, as explained below. It also reflects how long-term subsidy contracts for biomass generation are structured (providing strong incentives to maximise output). We note however that the fact that government directly subsidises biomass generation is not a justification on its own for levying ICCs on biomass.

2.12 In light of stakeholder concerns around a potential switch to carrying biomass by road, we appointed MDS Transmodal (MDST) to assess the impact of an increase in access charges on the carriage of biomass by rail, both in terms of the rail routes chosen by companies shipping biomass, as well as the substitutability between rail and road. This analysis is discussed below.

2.13 MDST's analysis was carried out on the assumption that any increases in rail access charges would be passed on by train operators to their customers. In light of this assumption, we investigated who would bear an increase in charges, and whether this would be the end customer, or the train operator. Based on the information available, we have a reasonable basis to conclude that increases in charges would be passed on to customers.

Who would bear increases in charges for the carriage of biomass

2.14 [Redacted – commercially sensitive information]

2.15 [Redacted – commercially sensitive information]

2.16 Our interpretation is based on an extract from contracts between users of biomass and rail freight operators. We welcome further conversations with potential affected parties on this topic, should they disagree with our interpretation.

Summary of MDST analysis

2.17 We commissioned MDST to assess the effect of introducing ICCs (modelled as increases on current access charges, and specifically the VUC) on the carriage of biomass by rail[28]. MDST investigated to what degree increases in charges would lead to a reduction in the amount of biomass carried by rail by 2023-24.

2.18 Drax is the main producer of electricity from biomass in the UK, therefore its business was a key focus in MDST's analysis[29]. Lynemouth power station, expected to become operational in 2018, was also included in the analysis.

2.19 MDST's analysis showed that, on a modelled basis, biomass carriage by rail is significantly cheaper than by road. Therefore a change in charges would be unlikely, all other things being equal, to result in a shift to carriage of biomass to power

[28] *The potential impact of increases in track access charges on the transport by rail of biomass*, MDS Transmodal, April 2018. This may be accessed here.

[29] Drax currently sources most of its biomass from North America with a smaller proportion from the Baltic region and less than 1% sourced domestically (which travels by road). Wood pellets from North America are primarily transported by ship to a deep sea port (Tyne, Immingham or Liverpool), then by train to Drax; and those from European origins are transported by ship to the port of Hull, then by train to Drax.

stations by road. Rather, increased rail charges would affect the mix of ports used in transporting biomass to minimise transportation costs[30].

2.20 MDST modelled a number of scenarios for increases in track access charges, including a central case estimate of a 100% increase. Based on the model MDST developed, they estimated that an increase of 100% in charges would result in a 10.2% reduction in rail freight traffic (tonne miles[31]) for Drax, and a 0.3% increase in the delivered cost of biomass (assuming no effect on quantity of biomass burned).

2.21 As part of its analysis, MDST also undertook a high-level estimation of the change in the amount of biomass burned, should rail charges increase. This was based on an estimate of the consumption elasticity of biomass, developed from a PR13 estimate of the consumption elasticity of coal (accounting for the lower calorific value per tonne of biomass). The analysis showed, on a modelled basis, that a 100% increase in charges would result in Drax reducing its biomass consumption by 1.8% and Lynemouth by 0.6%. Given how long-term subsidy contracts for biomass are structured, we consider that additional rail charges will have a minimal impact on biomass consumption (noting this modelling was based on the elasticity of coal, which was not subject to subsidy contracts such as the ones in place for biomass at the time of our PR13 analysis).

Final proposals on freight infrastructure cost charges in CP6

2.22 In this consultation, we are **confirming our previous proposals to retain the existing market segmentation for freight services, and continue allowing Network Rail to levy ICCs/mark-ups on freight trains carrying ESI coal, iron ore and spent nuclear fuel.**

2.23 Based on our consultations to date, and supported by the analysis undertaken by our consultants, we also **propose to allow Network Rail to levy ICCs on freight trains carrying ESI biomass in CP6.**

2.24 Based on MDST's analysis, it appears that biomass services have the ability to bear some level of charges above short-run marginal cost charges in CP6. The analysis showed that doubling the charges resulted in an 11% drop in tonne miles. However,

[30] Drax currently transports biomass via rail from a range of ports. Any change in the overall costs to a route, including an increase in track access charges, such as the proposed ICC, would likely change this mix. Lynemouth power station is expected to be supplied with biomass from the nearby port of Tyne. Because it is a short rail journey, rail charges make up a very small proportion of total costs. In addition, there are no other suitable nearby ports through which the power station could import biomass. Therefore, MDST determined that increases in rail charges would have little effect on delivered costs of biomass for Lynemouth.

[31] MDST's analysis was in thousand gross tonne kilometres. We converted this to gross tonne miles to be consistent with Network Rail's price lists.

this decrease in rail miles mostly reflected a change in use of ports, to minimise rail costs. Only a small amount (less than 2 percentage points) of the decrease was because of a reduction in biomass burned. This analysis looks likely to have significantly over-stated the magnitude of this reduction.

Level of infrastructure cost charges in CP6

Commodities currently subject to ICCs

2.25 We have not identified evidence that suggests the sensitivity to rail charges has materially changed for commodities currently subject to mark-ups, and see no strong argument for changing the overall charges that existing commodities face. Reflecting this, we propose to set ICCs for ESI coal, iron ore and spent nuclear fuel in CP6 to maintain the overall level of total charges in line with the CP5 exit levels for these commodities (on average).

2.26 We have also set out our view that in CP6 we will move from RPI to CPI for the inflation indexation of track access charges (and other payment rates where we set the method of indexation). The Office for Budget Responsibility (OBR) forecast annual RPI inflation to exceed CPI inflation by around1% per annum over the period of CP6[32]. This means that for indexed charges such as the VUC, train operators are forecast to pay lower nominal charges than would have been the case using RPI. By the final year of CP6, train operators are forecast to pay nominal rates which will be approximately 5% lower under CPI than RPI.

2.27 We are aware that due to changes in Network Rail's maintenance and renewals costs for CP6, the recalibration of the VUC is likely to result in significant increases in VUC rates. We have been working with Network Rail to understand the scale of the impact, and with stakeholders to explore the implications for them of such increases.

2.28 In another supplementary document accompanying the draft determination, we have set out a proposal to phase-in increases in VUC rates for freight and charter operators for CP6. For further detail on the background to the VUC and our capping/phasing proposal, please see our supplementary document on the VUC[33].

2.29 For freight services (as well as charter services), this proposal is:

- the increase in the VUC will be applied for freight and charter operators over a ten year period (CP6 and CP7);
- in years one and two of CP6, total variable charges (including forecast VUC, EUAC and EC4T) for freight and charter operators will be held constant

[32] RPI and CPI forecasts are available on the OBR's website here.

[33] *Charges and incentives: variable usage charge consultation*, Office of Rail and Road, June 2018.This may be accessed here.

(i.e. equal to the final year of CP5). The VUC charge will increase in year one to offset the fall in total variable charges due to the removal of the capacity charge and the coal spillage charge in CP6; and

- in the following eight years to the end of CP7, the VUC will increase on a straight line basis to full cost recovery (uncapped CP6 level).

2.30 We have considered how this proposal for the VUC will affect setting ICCs for ESI coal, iron ore and spent nuclear fuel in CP6. For the first two years of CP6, the VUC proposal means constant ICC rates for these three commodities, in nominal terms (i.e. excluding the impact of a change in approach to indexation). For the final three years, increases in VUC mean that ICCs for these three commodities should reduce, to maintain the same overall level of cost recovery (in line with our evidence regarding ability to bear for these commodities)[34].

2.31 In light of this, we have calculated average ICC rates for CP6 for each commodity, which take into account the planned increase in VUC for the last three years of the control period. Table 2.1 shows current (end of CP5) ICC (i.e. FSC and FOL) levels for the three relevant commodities, and proposed draft ICC rates for CP6 (based on the data we currently have available).

Table 2.1: Infrastructure cost charges in CP5 and CP6 for commodities currently subject to ICCs (or mark-ups)

2017-18 prices	End of CP5 FSC + FOL rate (£ / kgtm)	Draft CP6 ICC (£ / kgtm)	Average annual ICC income to Network Rail in CP6 (£m)
ESI coal	1.7	1.7	0.0[35]
Iron ore	1.8	1.5	0.3
Spent nuclear fuel	34.3	34.4	0.6

Note: thousand gross tonne mile (kgtm).

2.32 These figures are indicative and may change following the draft determination as a result of the ongoing recalibration work (including of the VUC) and quality assurance processes. We are including proposed rates in this consultation to provide industry with a view around the likely scale of ICCs in CP6. Network Rail will consult on draft CP6 price lists in due course (currently planned for July 2018). We will ask Network Rail to publish updated ICC rates as part of that consultation.

2.33 In addition, the move to CPI for the indexation of track access charges in CP6 is forecast to result in affected charges being inflated by around1% less per annum than would have been the case under RPI. By the final year of CP6, train operators

[34] Noting the removal of the capacity charge and the coal spillage charge in CP6.

[35] Network Rail has not forecast any ESI coal traffic in CP6. As such, we are not able to produce an estimate for annual ICC income from ESI coal services. Any remaining ESI coal traffic running in CP6 will be subject to ICCs as set out in this table, and therefore produce the equivalent income for Network Rail.

are forecast to pay nominal rates which will be approximately 5% lower under CPI than RPI. This impact has not been incorporated into the below figures which are presented in 2017-18 prices.

Biomass

2.34 We are maintaining our overall approach to setting ICCs for freight commodities (i.e. consistent with PR13 and previous periodic reviews). Therefore, we would set the charge at a level so as to not exclude a market segment from operating. As per our PR13 approach, we see this equivalent to setting an ICC such that there is a less than 10% modelled reduction in the gross tonne miles shipped by rail. We note that in the case of biomass, most of the modelled reduction is driven by likely changes in the pattern of rail use, rather than any change in total biomass generation.

2.35 As for other commodities, we will take into account changes in the other charges when setting the final ICC, including capping decisions in relation to the VUC, and the removal of the capacity charge.

2.36 For ESI biomass, there has not been an ICC charge in place in CP5. Based on MDST's modelling, and applying a conservative approach, we began by considering an ICC rate for ESI biomass that is equivalent to a 75% increase on the exit-CP5 variable charges (as a rate per thousand gross tonne mile) for this commodity. This is consistent with a less than 10% reduction in gross tonne miles for biomass.

2.37 We have then taken account of the increase in VUC (and reduction in other charges, due to the removal of the capacity charge), and we have modelled an average ICC rate for ESI biomass in CP6. Table 2.2 sets out proposed ICC rate for ESI biomass for CP6.

Table 2.2: Proposed ICC rates for ESI biomass

2017-18 prices	Draft CP6 ICC (£ / kgtm)	Average annual ICC income to Network Rail (£m)
ESI biomass	1.3	2.0

Note: thousand gross tonne mile (kgtm).

2.38 As above, these figures are indicative and may change following the draft determination as a result of the ongoing recalibration work (including of the VUC) and quality assurance processes. Charges for ESI biomass services would also be affected by the change from RPI to CPI, as described in paragraph 2.33.

3. Infrastructure cost charges for passenger services

Introduction

3.1 We have previously set out our intention to work 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 costs. We also need to consider how such charges should be levied (i.e. the design of the charges) for both open access and franchised passenger services.

3.2 In this chapter, we provide an overview of our September 2017 proposals, and feedback received from stakeholders. We also set out final proposals on:

- the market segmentation for passenger services, and the approach to implementing ICCs for OAOs in CP6;
- design of passenger ICCs in CP6; and
- level of ICCs for open access market segments in CP6.

Overview of September 2017 proposals

3.3 In our September 2017 consultation, we set out initial proposals around a potential approach to defining passenger market segments, for the purpose of levying ICCs. This was based on analysis undertaken by consultants CEPA and Systra[36].

3.4 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 or management contract), and other passenger services[37].

3.5 We had not previously undertaken a market segmentation exercise for passenger services. The FTAC franchised operators pay is based on an implicit MCB assessment. This takes into account the fact that operators bid for franchises based on a known level of FTAC at the time when they enter into the franchise. It also takes into account the fact that franchised passenger operators are generally held

[36] *PR18 Structure of charges review – Market can bear analysis: Passenger services*, Cambridge Economic Policy Associates & Systra, September 2017. This may be accessed here.

[37] 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 Regulations. We explained in our September 2017 consultation how we did so, and our proposals in relation to domestic versus international, and regular versus occasional services specifically.

harmless to any subsequent changes in the level of FTAC resulting from ORR's periodic review[38].

3.6 In order to develop a market segmentation for passenger services, CEPA and Systra began by looking at the characteristics of passenger services that impact demand (in a general sense), and therefore the costs and revenues associated with different types of services, as well as requirements for service quality. This was in order to establish which characteristics of services are most relevant when defining market segments. This is similar to the exercise we previously undertook for freight services, for which we determined in previous control periods that the key characteristic determining demand is the commodity carried. The commodity carried impacts the costs of providing the service, the revenues (through the prices customers are willing to pay) and the requirements for service quality (for example journey time expected by the customer, or rolling stock used).

3.7 The consultants considered a range of passenger service characteristics, as set out in the CEPA and Systra report. Based on their high-level analysis, they concluded that geography, time of day and journey purpose are likely to be the key determinants of demand for passenger services (at this time adopted as a hypothesis).

3.8 The next step in the analysis was to investigate, based on available industry data sources, the extent to which each characteristic determines demand in practice (and therefore enables us to differentiate between market segments).

3.9 Currently, there are few open access passenger services running on the network, and franchised operators provide the majority of passenger services[39]. As such, basing the analysis on data relating to existing OAOs only would have yielded limited results. Therefore, the consultants looked at all passenger services currently running on the network, in order to develop an approach to segmentation, which could be applied to either open access or franchised services[40].

3.10 Having identified the key determinants of demand, the consultants proceeded to investigate how each of these factors affected the costs, revenues and requirements for service quality associated with different services.

[38] We are aware that where services are sponsored by local funders, the arrangements for holding operators neutral might vary. We have been investigating issues in relation to non-central Government funders, and how they hold operators neutral. We continue to work through these issues with potential affected funders, as we finalise these proposals.

[39] OAOs account for less than 1% of passenger revenue, according to ORR's passenger rail usage statistics.

[40] In order to ensure comparability between open access and franchised services, data specific to franchised operators was not included in the analysis (e.g. franchise payments to funders or access charges only paid by franchised operators).

3.11 Existing industry data sources do not break down information relating to services based on the time of day. The lowest level of disaggregation available is the service code, which typically includes all services running between two stations during a day (and any intermediary stations the services call at). As such, the consultants did not investigate the time of day element further as part of this analysis.

3.12 Service groups, by definition, incorporate information about the geographic characteristics of services – i.e. which areas these services run in, and therefore whether these services could be described as suburban, inter-urban, regional, rural, etc. A service type (i.e. intercity, commuter or other) was assigned to each service code, as a proxy for journey purpose, using information from an industry demand-forecasting tool (MOIRA).

3.13 The analysis focused on estimating the net operating profit for each service code running on the network. This was calculated as the difference between the revenues earned by services within the service code, and the costs of running these services. The calculation of costs was on a modelled basis, taking into account the different requirements for service quality associated with different services (e.g. more comfortable rolling stock for longer distance services). The revenue associated with each service code was calculated based on actual train operator revenues, allocated to service codes using MOIRA service code revenue data.

3.14 Having calculated the net operating profit for each service code running on the network, the consultants ranked service codes based on this value, to investigate whether the service characteristics identified initially had an impact on demand, and could therefore be used to inform a market segmentation. Generally, the analysis showed that similar services tended to have similar net operating profit values. For example, regional and rural services had lower net operating profit values, while intercity services had higher net operating profit values. This confirmed that the characteristics identified in the first stage of analysis did have a material impact on the costs of providing the transport services, their market prices or their requirements for service quality, and justified using these characteristics to inform a market segmentation.

3.15 The conclusion based on this high level analysis was that services with high net operating profit values tended to be those running between major UK cities (major intercity) or between London and more developed urban centres around London (long-distance commuter). Other services, such as rural, suburban or regional services, had lower operating surplus values.

3.16 For the two types of services identified as having high operating surplus values (and therefore potentially being market segments able to bear ICCs), the consultants undertook case studies to assess ability to bear in more detail. Their approach is

explained in the consultancy report published alongside our September 2017 consultation[41].

Summary of feedback to September 2017 proposals

3.17 In response to our consultation, including the technical analysis by our consultants, stakeholders outlined a number of concerns and suggestions in relation to the market segmentation for passenger services:

- respondents were concerned that the consultants' analysis was not consistent with the legislative requirement that market segments be based on characteristics of services, rather than just on revenues and costs;
- respondents agreed that distinguishing between franchised and open access services (two market segments) was not enough. Several suggested that open access services should be split into several market segments, based on their different characteristics. Some respondents also suggested they be segmented based on when they entered the market (existing and new entrant OAOs); and
- some respondents suggested that a more granular approach should be employed in the analysis to pinpoint which journeys attract the highest revenue (noting distinction between train service and journey) – possibly going below service code level. In terms of granularity, some stakeholders also thought it was essential for the analysis to distinguish between peak and off-peak services (or time of day).

3.18 Stakeholders also wanted more clarity around any proposed transitional arrangements. Some respondents were particularly concerned about how these would affect existing and new entrant OAOs.

3.19 Respondents agreed that we should clarify the planned changes to the access policy in response to the introduction of mark-ups for open access services. They emphasised that the charging and access policy elements should be considered holistically.

3.20 Some stakeholders commented on the size of the OAO market relative to the charter market, and noted that despite its small size, we were proposing to introduce charges for OAO services, but not for charter services.

3.21 In the following sections, we set out our updated and final proposals on the market segmentation for passenger services, and implementation of ICCs for existing and

[41] *PR18 Structure of charges review – Market can bear analysis: Passenger services*, Cambridge Economic Policy Associates & Systra, September 2017. This may be accessed here.

new entrant OAOs. This includes how we addressed, or plan to address, the points raised by stakeholders in response to our consultation.

Proposals on market segmentation for passenger services

3.22 In September 2017, we consulted on an approach to developing a market segmentation for passenger services. In this section, we set out how, in light of responses received to our September 2017 consultation, and further thinking, we propose to define market segments for passenger operators in CP6.

3.23 The starting point for the segmentation is the two high level segments defined in the legislation, which we interpreted in the context of the GB rail industry as services under a franchise or concession contract, and open access passenger services.

3.24 We also needed to consider the pairs which are relevant to passenger services, from the list of pairs in paragraph 2(10) of Schedule 3 of the 2016 Regulations[42], namely:

- domestic versus international services;
- urban or regional versus interurban passenger services; and
- regular versus occasional train services.

3.25 We began by considering the two high-level segments identified in the legislation, and the merits of defining further sub-segments under each of these segments. For the high-level segment of "services within the framework of a public service contract", we considered defining the same sub-segments as we propose to define under the high-level segment of open access services (given the segments identified would be based on the same analysis), which is discussed below. This would likely involve reviewing all existing service codes run by franchised passenger operators, and allocating them to specific market segments.

3.26 This exercise would be very complex, and there would be few benefits in undertaking it. This is because our approach to assessing franchised passenger operators' ability to bear would continue to be at the train operator level, and based on the existing approach to franchising.

3.27 **As such, our final proposal is not to define further sub-segments under the high-level market segment of "services within the framework of a public service contract".**

[42] Annex VI in the 2012/34 Directive.

3.28 Based on CEPA and Systra's analysis, as well as our consideration of the legislative requirements in this area, we considered two options for defining sub-segments for open access services:

- **Option 1** – define three market segments: intercity; long-distance commuter; and other. The granularity of these market segments should allow for more accurate charging (particularly in the long-term); and
- **Option 2** – define two market segments: interurban and other.

3.29 Analysis and practical evidence suggests that the boundary between intercity and long-distance commuter services is not always very precise. As such, option 2 has the advantage that it does not require arbitrary boundaries to be drawn between these two kinds of services, when defining which services belong to which segment. In addition, the segmentation proposal under option 2 is consistent with one of the pairs set out in paragraph 2(10) of Schedule 3 of the 2016 Regulations, namely "urban or regional versus interurban passenger services"[43].

3.30 The CEPA and Systra analysis did not produce different estimates of ability to bear for intercity and long-distance commuter services. In the short-term, implementing option 2 will not result in less accurate charging compared with option 1. In the future, as more information and data becomes available, we could possibly distinguish between intercity and long-distance commuter services as part of our definition of market segments for open access services.

3.31 On balance, and in light of the arguments set out above, **we propose to define two market segments for open access services in CP6: interurban and other[44].**

3.32 As explained above, the time of day when services run is also an important determinant of demand. As stakeholders have outlined, distinguishing between peak and off-peak services could allow for a market segmentation to be developed that more accurately reflects how demand varies across different types of services. However, as discussed previously in this chapter, the lowest level of disaggregation available for industry data is the service code. Service codes do not generally distinguish between peak and off-peak services. Should industry data systems become more refined in the future (or should data on peak and off-peak services become available from another source), we could seek to reflect this dimension as part of the market segmentation.

[43] Given we are proposing to set the charge for services which are not interurban services to zero in CP6, we are proposing to simply call the market segment of urban or regional services as 'other'.

[44] We note that service codes are the lowest level at which Network Rail can bill passenger operators. As such, we will define service codes (rather than individual services) as belonging to a particular market segment.

3.33 Our proposed market segmentation for open access services relates directly to one of the pairs listed in paragraph 2(10) of Schedule 3 of the 2016 Regulations. Our consultants also considered the relevance of the two other pairs identified, and we set out our emerging views in relation to each of these in our September 2017 consultation.

3.34 With respect to the domestic versus international services pair, international services mostly run on the HS1 network (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.

3.35 Similarly, with respect to the regular versus occasional pair, charter services 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.

3.36 Consequently, in our September 2017 consultation, we did not propose to undertake any further work as part of PR18 to quantify ability to bear for these market segments. **We are confirming this proposal as final.**

Infrastructures cost charges and our access policy

3.37 A key driver of our reforms to access charges for passenger services has been facilitating more competition in the provision of these services (on-rail competition). This builds on the recommendations of the Competition and Markets Authority[45].

3.38 In CP5, OAOs have not been subject to access charges that recover Network Rail's fixed costs. In addition, we currently use the "not primarily abstractive" (NPA) test when approving access rights to both OAOs and franchise services, which looks at how much of the forecast income for the proposed services is newly generated versus income abstracted from other existing services.

3.39 As we have outlined in previous consultations, should we conclude to levy ICCs on OAOs in CP6, we will need to revisit our access policy (including the NPA test), to determine what changes might be needed.

3.40 In April 2018, we published a letter updating industry on our review of charges and incentives. In this letter, we outlined that the passenger MCB analysis supporting our September 2017 consultation produced estimates that would inform the level of ICCs that different passenger market segments could bear. However, there is a high

[45] *Competition in passenger rail services in Great Britain: A policy document*, Competition & Markets Authority, March 2016. This may be accessed here.

degree of averaging in the analysis (due to the available data and tools). As such, our consultants produced conservative estimates of ability to bear, which implies that charges based on this analysis would be somewhat conservative for any market segment deemed to be able to bear ICCs.

3.41 In addition, DfT has now published the response to its consultation on the passenger rail public service obligation (PSO) levy. We are continuing to work with DfT on this issue; however, it appears unlikely that a levy will be introduced in the short-term.

3.42 In light of the issues highlighted around the likely scale of ICCs, and the lack of a PSO levy, it would appear at this stage that our charging reforms will only support very limited changes to our access policy (and only limited amendments to the NPA test). We will consult on any such changes in due course.

3.43 Our current view is that the forecast revenue generated through ICCs should be included in the calculation of the revenue generated by proposed services. This would tend to increase the calculation of the NPA ratio. We would retain the existing threshold value of 0.3, as it currently features in our overall analysis of access applications.

Implementing infrastructure cost charges for open access services

3.44 We have considered how to balance the objective of facilitating more new entry in CP6, while having regard to the position of OAOs already operating in the market. We have specifically considered what kind of arrangements we should put in place for existing and potential new entrant OAOs in CP6.

Existing open access operators

3.45 OAOs currently operating services were granted access based on our previous access policy, which we are planning to update for CP6. This policy had restricted OAO's use of the network.

3.46 In addition, CEPA and Systra analysis of services showed that existing OAOs have low net operating profit. Therefore these services are unlikely to be able to bear increased charges, despite technically belonging to the market segment we have identified as able to bear ICCs, interurban services.

3.47 To protect the existing level of competition provided by these services, we **propose to provide relief from any increase in charges prompted by the introduction of ICCs for the whole of CP6, for existing OAOs**.

3.48 If existing OAOs continue to operate their current services, they would not see an increase in their charges over CP6. Changes in the level of other charges faced in

CP5 by OAOs, namely the potential increases in VUC and the removal of the capacity charge, mean that we do not expect the overall level of charges to reduce in CP6 relative to CP5 for existing OAOs (differences will be small).

3.49 If existing OAOs propose significant variations to their services, the new service will be subject to an ICC. We will assess these modified access rights using our updated access policy.

3.50 Unlike new entrant OAOs, we propose that existing OAOs will be subject to the full charge from year one of their modified operation. This is consistent with our reasoning outlined in the next section, discussing relief for new entrant OAOs. As existing OAOs already have established operations and a recognisable brand on that service, their new services are likely to face significantly lower risks than new entrants. Reflecting this, existing OAOs introducing new services will not be provided relief from charges.

3.51 We define existing OAOs as operators of services who had access agreements approved before we set out our intention to review the charges levied on OAOs as part of PR18. We formally set out this intention in our letter responding to the Competition and Market Authority Report on on-rail competition published on 26 November 2015[46] and our consultation on network charges published on 10 December 2015[47]. For the avoidance of doubt, the open access application we approved from First Group to run services between London and Edinburgh, falls after these dates and consequently the services will be treated as new services for charging purposes.

New entrant open access operators

3.52 New entrants typically require time to build up their business. This involves promoting and marketing services, in order to reach target load factors, which can take several years. Therefore, we recognise that new entrants generally do not expect to be very profitable in the early years of operation. This implies that the risks faced by these new entrants are significantly higher than those facing existing operators (both existing open-access and all franchise operators).

3.53 In light of this, **we propose to phase in ICCs for new entrant OAOs. The proposed phase-in profile is outlined in Table 3.1.** The phasing-in is with reference to when a new entrant has started operating services, rather than the

[46] *Letter to CMA: Competition in Passenger Rail Services in Great Britain*, Office of Rail and Road, November 2015. This may be accessed here.

[47] *Network Charges: A consultation on how charges can improve efficiency*, Office of Rail and Road, December 2015. This may be accessed here.

specific year of a control period when the operator starts operating services, or when the operator's rights have been approved.

Table 3.1: Proposed transitional arrangements for new entrants

Year of operation of new entrant	Year 1	Year 2	Year 3	Year 4	Year 5
% of ICC set at periodic review prior to start of operation	0%	0%	25%	50%	100%

3.54 In terms of a practical definition of a new entrant, we propose to define a new entrant OAO in a consistent way to how it was defined in the transitional arrangements for the capacity charge in PR13[48]. See Annex A for our proposed definition.

3.55 As discussed previously in this chapter, the NPA test will take into account potential ICC charges when a new entrant OAO applies for access.

3.56 When deciding on access applications, we also look at the overall level of abstraction associated with an application. We would expect to reflect the additional income generated by ICCs in this assessment (as income to Network Rail ultimately offsets costs to taxpayers).

Design of passenger infrastructure cost charges

3.57 In September 2017, we consulted on our proposed approaches for levying ICCs on open access and franchised passenger operators in CP6. In the consultation we proposed to:

- levy ICCs on OAOs as a rate per train mile; and
- annually adjust franchised passenger operators' ICCs (i.e. the FTAC), to reflect changes in timetable traffic.

Charging unit for open access operators

Overview of September 2017 proposal

3.58 We proposed to levy ICCs on OAOs as a rate per unit of traffic, rather than a lump-sum charge fixed for the control period, due to OAOs' ability to enter and exit the market more easily than franchised passenger operators. In the consultation in September 2017 we considered three options for levying OAOs' ICCs, namely as a rate per: train mile; vehicle mile; or passenger kilometre.

3.59 We proposed a rate per train mile due to: the signals it would send to operators about making efficient use of capacity on the network; the evidence on the link between

[48] *Decisions on implementation of CP5 capacity charge for new open access operators*, Office of Rail and Road, September 2014. This may be accessed here.

train miles and long-run fixed costs on the network; and the ability for Network Rail to easily bill operators using this unit of traffic.

Consultation responses

3.60 The responses to the consultation generally supported levying ICCs as a rate per unit of traffic.

3.61 In terms of a rate per train mile, several stakeholders agreed with our assessment that a rate per train mile would be simple to implement and provide operators with an incentive to make the best use of the capacity they are allocated.

Proposal

3.62 **We propose to levy ICCs on OAOs as a rate per train mile.**

3.63 We updated the draft impact assessment published alongside the consultation in September 2017 to reflect additional evidence we received from stakeholders[49].

Approach for levying infrastructure cost charges on franchised passenger operators

Overview of September 2017 proposal

3.64 In our September 2017 consultation, we proposed to adjust franchised passenger operators' ICCs for changes in timetabled traffic on an annual basis. Under this proposal, franchised passenger operators would pay a lump sum ICC (which will continue to be known as FTAC) based on forecasts of their traffic levels for each year of the control period. However, unlike the current FTAC approach, each operator's charge would be re-calculated at the end of each year of the control period, to reflect the difference between their forecast traffic, and services included in the timetable for each year.

3.65 We made this proposal for two main reasons. Firstly, compared to the current FTAC, this approach would increase the revenue Network Rail receives when new (franchised) services join the network during a control period. As a result, Network Rail would have a stronger financial incentive to add traffic to the network during a control period. This is an important consideration given the decisions to remove the capacity charge and the financial aspect of the volume incentive for CP6[50].

[49] *Final impact assessment of units of traffic for levying ICCs on OAOs*, Office of Rail and Road, June 2018. This may be accessed here.

[50] *Letter to Network Rail: Volume incentive – conclusions to working paper*, Office of Rail and Road, May 2018. This may be accessed here.

3.66 Secondly, although franchised passenger operators would be held neutral through their franchise agreements to changes in their ICCs for the baseline level of services in their franchise agreements, they would pay additional charges (in addition to short-run variable charges) for services they add to the timetable during the control period. This would provide franchised passenger operators with an incentive to consider the long-run fixed costs caused by adding new services to the network.

3.67 We proposed to reflect changes in timetabled traffic, as opposed to changes in actual traffic, in order to mitigate the risk of Network Rail facing a revenue shortfall within a control period when operators run fewer services than they have planned to, due to, for example, the cancellation of services as a result of severe weather. It also prevents a potential unintended consequence that franchise operators might seek to cancel trains to reduce their FTAC charge.

3.68 In the consultation and accompanying impact assessment, we explained that if we decided to take this proposal forward, we would need to consider a number of aspects of the proposal in more detail, such as the unit of traffic to use for the annual adjustment.

Consultation responses

3.69 Stakeholders generally expressed support for the proposal to annually adjust franchised passenger operators' ICCs for changes in timetabled traffic.

3.70 However, respondents raised three main concerns with the proposal, these were: the potential for the proposal to increase the volatility of Network Rail's income; uncertainty for franchised passenger operators; and the availability of timetable traffic data.

Volatility of Network Rail's income

3.71 The proposal in the September 2017 consultation would decrease a franchised passenger operator's annual ICC if it reduced its timetabled traffic. Stakeholders raised the concern that this could result in a revenue shortfall within a control period for Network Rail, affecting the funding available to maintain and renew the network. For example, based on Network Rail's Strategic Business Plan numbers, a 1% reduction in franchised operators' timetabled traffic would result in a reduction of around £10m.

3.72 Respondents proposed several approaches to limit the risk of income volatility faced by Network Rail under this proposal. The suggestions included limiting the downside risk that Network Rail faces and limiting Network Rail's exposure to only a proportion of its fixed costs.

Uncertainty for franchised passenger operators

3.73 The responses to the consultation explained that in practice, funders may not be able to hold franchised passenger operators neutral to changes in their ICCs at each periodic review for services already included in the timetable.

Timetabled data

3.74 To adjust franchised passenger operators' ICCs based on changes in timetabled traffic, each operator's services in the timetable would have to be converted into the unit of traffic, such as train or vehicle miles.

3.75 The responses to the consultation highlighted that there may be difficulties finding a reliable and stable data source to convert timetable traffic data into a unit of traffic.

Proposal

3.76 We continue to propose to **annually adjust franchised passenger operators' ICCs for changes in timetabled traffic.** However, since consulting in September 2017, we have developed a more detailed proposal and considered ways to address the main concerns raised by stakeholders. This is set out below.

Proposal to limit Network Rail's exposure on the downside in relation to franchised passenger operators' infrastructure cost charges in CP6

3.77 Annually adjusting franchised passenger operators' ICCs in timetabled traffic would increase the financial risk Network Rail is exposed to for decreases in franchised operator timetabled traffic. Although we consider the likelihood of a reduction in franchised passenger operator timetabled traffic to be low under the current franchising model, the franchising model could change or franchise agreements could be renegotiated during CP6. Therefore, to limit Network Rail's exposure to this risk we have considered two options:

- set a floor of 5% (over the control period) for the percentage decrease in a franchised passenger operator timetabled traffic that is reflected in its ICC adjustment; or
- do not adjust a franchised passenger operator's ICCs for decreases in its timetabled traffic (i.e. the adjustment would be upside-only).

3.78 We are proposing to **set a floor of 5% for the percentage decrease in a franchised passenger operator timetabled traffic that is reflected in its ICC adjustment. This is a cumulative floor for the whole control period.**

3.79 Under this proposal the maximum a franchised passenger operator's ICC could decrease for decreases in timetabled traffic would be 5% for the whole control period. For example, in a situation where a franchised passenger operator's timetabled traffic

was 8% below their forecast level of timetabled traffic, their ICC would only decrease by 5%.

3.80 Although this proposal would still expose Network Rail to financial risk for decreases in franchised passenger operators' timetabled traffic, it would provide certainty about the maximum amount franchised passenger operators' ICCs could decrease over the control period.

3.81 We also consider it preferable to the option of not adjusting franchised passenger operators' ICCs for any decreases in their timetabled traffic. Allowing ICCs to vary in response to decreases in timetabled traffic, even if capped, would still provide franchised passenger operators with an incentive to consider removing services that do not maximise the value of capacity.

3.82 We are specifically proposing a cumulative floor for the whole control period of 5% to ensure that even if the franchised passenger operators' timetabled traffic decreased by the maximum amount, the decrease in Network Rail's revenue would not significantly impact its ability to maintain and renew the network. Based on Network Rail's Strategic Business Plan a 5% decrease in franchised passenger operators' timetabled traffic would decrease Network Rail's overall ICC income by approximately £280m over the control period. This represents 0.6% of Network Rail's total CP6 forecast expenditure on operations, maintenance, renewals and enhancements expenditure (£47bn as per Network Rail's Strategic Business Plan published in February 2018). Network Rail analysis indicates that actual passenger operator traffic regularly varies by only ±1% each year[51].

3.83 We recognise that the financial risk that Network Rail is exposed to under this option also depends on the baseline level of timetabled traffic assumed for each franchised passenger operator. We will continue to engage with Network Rail on the forecasts used for each operator's timetabled traffic, to ensure any baselines we set reflect the best data available about expected traffic levels.

3.84 We have also considered other aspects of the design of franchised passenger operators' ICCs. Our proposals for the other aspects of the design are:

- **Annually adjust franchised passenger operators' ICCs based on variations in timetabled train miles.**

[51]The figures in this paragraph are based on data from Network Rail's February 2018 Strategic Business Plan, available here. These figures will change between the draft and the final determination, to reflect our final decisions on PR18, as well as more up to date information on the level of income Network Rail can expect to receive from other sources (e.g. recalibration of variable charges charges), and updates to traffic forecasts.

- **Apply the annual adjustment to franchised passenger operators' ICCs at the operator level (rather than at a lower level, e.g. the service group).**
- **Annually adjust franchised passenger operators' ICCs by the percentage change in their annual timetabled traffic.**

3.85 More detail on all of these proposals and our rationale for them (including the other options we considered in each area) is available in the accompanying impact assessment[52].

3.86 We have discussed stakeholders' concern that franchised passenger operators may not be held neutral to changes in their ICCs at each periodic review for services already included in the timetable with DfT and Transport Scotland. These franchise authorities explained they expect to be able to use the approach they currently have to hold franchised operators neutral to changes in variable charges. We will continue to engage with DfT and Transport Scotland so that these changes allow an orderly change to the franchises.

3.87 To convert timetabled traffic into train miles, it is clear that Network Rail's NETRAFF database is not robust enough to use. Since the consultation, Network Rail has identified an alternative database, PSS. PSS appears to be a more reliable and stable data source than NETRAFF. We are engaging with Network Rail to identify and resolve any issues with PSS, or any other system it identifies as an appropriate basis for levying ICCs.

Level of infrastructure cost charges in CP6

3.88 As outlined above, we are not proposing a fundamental change to the current approach to calculating the level of ICCs for franchised passenger operators. We have proposed to retain the current high-level approach for calculating FTAC, updated for the new cost allocation methodology.

3.89 We note that changes in Network Rail's funding might affect the balance between FTAC and Network Grant, and we will continue to work with funders and Network Rail to understand how these changes impact individual operator FTAC values.

3.90 As discussed above, we are also proposing that during the control period, franchised operators' FTACs are adjusted to reflect changes in timetabled train miles.

3.91 For OAOs, we have proposed that any ICC charge is levied as a rate per train mile.

[52] *Draft impact assessment on the detailed design of franchised passenger operator ICCs*, Office of Rail and Road, June 2018. This may be accessed here.

3.92 For any market segment, the level of ICCs will be informed by two key parameters:

- our assessment of what level of charges those services can bear; and
- the level of all other charges in CP6.

3.93 As explained above, the second stage of CEPA and Systra's analysis looked in more detail at some of the services that were identified in the first stage of the analysis as having a high net operating profit. The analysis sought to model the maximum level of charge that could be levied without deterring an unconstrained operator from operating a service. This was measured as the difference between the surplus earned by an unconstrained operator for its worst performing train "diagram" (the full set of movements of a train during the day), and the average surplus earned by existing OAOs. A more detailed explanation of the approach used is set out in the CEPA and Systra report.

3.94 All the assumptions used in the modelling sought to produce a conservative estimate. The results from the case studies indicated a minimum range of £6-7 per train mile for an ICC for intercity and long-distance commuter services (and some of the services the consultants looked at had substantially higher surplus values). The baseline for the analysis (against which increases were modelled) was CP5 charge levels, excluding the capacity charge.

3.95 This approach effectively provides us with an upper limit for any ICCs for new entrant OAOs in CP6. Given this is a new approach, and this is the first time we have undertaken this type of analysis, we believe that an overall conservative approach for the setting of ICCs is appropriate.

3.96 We are also aware that increases in VUC for open access services are broadly offset by the removal of the capacity charge.

3.97 **As such, we are proposing to set the ICC for interurban OAOs in CP6 at £4/train mile.**

Annex A: Proposed definition for new entrant open access operators

1. In order to be treated as a new entrant OAO in relation to the phasing-in of ICCs, an OAO needs to:

   (a) have a company number distinct from any other OAO, with its first ever track access agreement entered into in CP6; and

   (b) at the time our initial track access approval takes effect, meet one of the following criteria:

      (i) it is a completely new entrant OAO with no affiliation to an existing OAO at any point in its group company structure[53]; or

      (ii) if it is affiliated in any way to an existing OAO, it does not have any service codes[54] with more than one station overlapping with the stations called at by any individual service code of that existing OAO[55].

2. We seek to ensure that the implementation of our proposals results in a clear and objective definition of new entrant OAO, and balances the following two considerations:

   (a) we do not want a new entrant OAO that is affiliated to an existing OAO to be unfairly discriminated against relative to a completely new entrant OAO with no connection to an existing OAO at any point in its group company structure[56]; and

[53] For these purposes, "affiliate" means in relation to the existing OAO: a subsidiary or a parent company (or ultimate parent company) of the existing OAO; or a subsidiary of a parent company (or ultimate parent company) of which the existing OAO is itself a subsidiary. The terms "parent company" and "subsidiary" for these purposes are as defined in the Companies Act 2006.

[54] If the OAO subsequently has an additional service code approved, this will not affect whether or not the operator is defined as a new entrant OAO (for the purposes of the ICC rates it pays), regardless of the stations that the additional service code calls at. However, any remaining threshold cannot be allocated to any service code subsequently approved that, if included as part of the initial approval, would have meant the OAO would not have been treated as a new entrant OAO for ICC purposes.

[55] These criteria regarding overlapping stations can be illustrated by the following examples. If there are two service codes: service code 1 stops at stations A, B and C, and service code 2 stops at B, C and D, then service code 1 would be considered as having more than one station overlapping with service code 2. If there are three service codes: service code 3 stops at stations E, F and G, service code 4 at F, H and I and service code 5 at G,J and K, then service code 3 would not be considered as having more than one station overlapping with the stations in another service code.

[56] For example, if train company A is a completely new entrant OAO with no affiliation to an existing OAO, train company B is owned by the same owner group as an existing OAO and they both start to run open access services to somewhere that currently does not have a service run by an OAO, then we would expect both companies to be treated equally through the charges system.

(b) we do not want an existing OAO or its owner group to create an affiliate in order to benefit from phased-in ICCs on what amounts to an expansion of their existing services[57]

[57] For example we would wish to avoid an owner group of an existing OAO, train company C, setting up a new entrant OAO, train company D, to run very similar services to train company C in order to benefit from phased-in ICC rates.

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