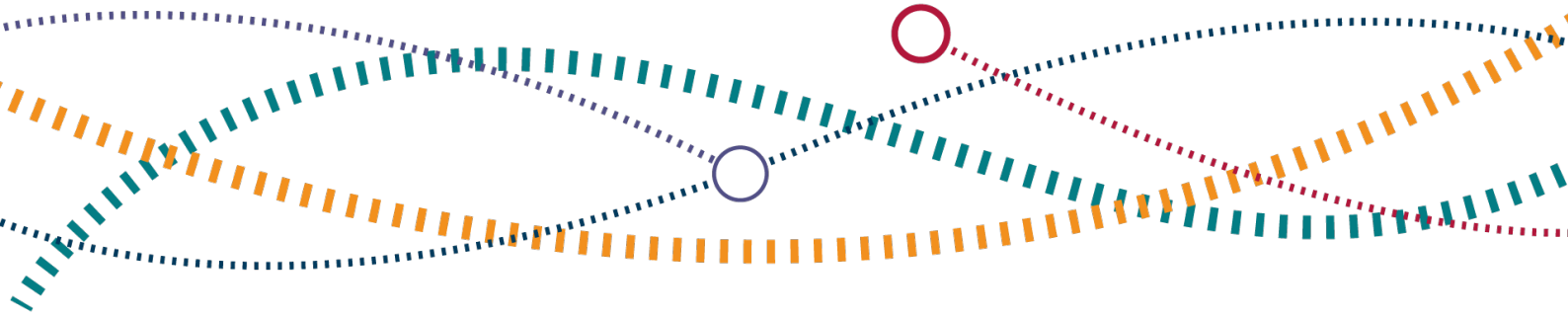
PR23 – Review of Network Rail's access charges

Technical consultation

Further proposals

14 April 2022



Contents

Executive Summary

Access charges are paid by train operators (passenger, freight, and charter) for use of Network Rail's track and stations. They ensure that Network Rail recovers the costs of maintaining and renewing the network fairly from different users (and taxpayers). They can also influence the decisions that Network Rail, train operators and funders make, which affect the overall cost of the network and how efficiently it is used. Charges can therefore play a role in improving outcomes for passengers, freight customers and taxpayers.

As part of PR23, we are reviewing Network Rail's access charging framework. This review is taking place at a time of change for the rail industry. In particular, the UK Government is progressing its rail reform programme and intends to create a new body – Great British Railways (GBR) – that will in future own the railway infrastructure and let and manage the passenger rail contracts currently awarded by the UK Government. It has also been developing arrangements for accessing the network, and the related approach to charging, that will be applied by GBR to its future operators as well as to other operators.

We published our initial consultation on the PR23 charges review in July 2021. In that consultation, we proposed to retain the existing charging framework broadly in its current form for the next control period (CP7), while making some incremental changes to this framework to ensure that it remains fit for purpose. We are now confirming this approach for PR23. This reflects that any changes we make must align with current legislative requirements governing access charging, which establish certain important principles for how access charges should be set. Furthermore, while some features of GBR are now better understood, there remains uncertainty over the specific access and charging arrangements that will be applied, which we cannot anticipate at this stage of PR23.

Given this context, we intend to proceed with a subset of the changes to the charging framework that we set out in our initial consultation (or were suggested by stakeholders in response to that consultation). The main changes that we propose to take forward are:

- removing the 'wash-up mechanism' for the fixed track access charge (FTAC) that is paid by operators on concession-style agreements (while maintaining this charge)[1];
- simplifying some aspects of the traction electricity (EC4T) charge;

[1] This mechanism has already been suspended for the rest of CP6.

- allowing variable usage charge rates to be modified during CP7 if Network Rail withdraws heavy axle weight capability during CP7; and
- amending how the long-term charge for some franchised stations is calculated.

Separately, we have reviewed the infrastructure cost charges (ICCs) that are levied on freight and open access operators, to reflect market developments that have occurred since the last periodic review. We are proposing to retain these charges for CP7, and we intend to maintain the existing market segmentation that underpins the scope of these charges, though we are seeking views on whether to remove the ICC for ESI coal (in respect of freight) and whether to remove the existing relief from the open access ICC that is currently provided to some operators (in respect of open access).

We are not proposing to make significant changes to how variable charges are calculated and applied. We also intend to maintain the inflation index (CPI) that is used to update Network Rail's access charges (and payment rates in other mechanisms).

Taken together, we consider these proposals will ensure that the charging framework remains effective in CP7, as the planned transition from Network Rail to GBR takes place.

We are seeking views from industry on these proposals – specifically, those where we have developed further details since our initial consultation.

Structure of this document

In the rest of this consultation, we first recap the context for the PR23 charges review and confirm our overall approach to this review (Chapter 1). Chapters 2 to 4 set out our specific proposals for each existing charge, taking account of responses to our initial consultation and further work carried out since then, ordered as follows: ICCs (Chapter 2); variable charges (Chapter 3); and station charges (Chapter 4). Chapter 5 sets out our position on the appropriate inflation index to apply to Network Rail's charges.

Responding to this consultation

We welcome views on the proposals set out in this consultation. Please send responses by email to pr23@orr.gov.uk by **Friday 1 July 2022.**

A full list of consultation questions is set out in **Annex 3**. We have also made available a consultation response template which contains further information on how to respond, as well as on the publication of these responses.

Overall timetable for review of charges

We intend to issue a charges conclusions document in autumn 2022, at which point we will confirm which changes to the charging framework we will implement for CP7. Network Rail will then consult separately on detailed aspects of the recalibration of each charge. We will audit and approve the final charges towards the end of PR23 (i.e. autumn / winter 2023).

We note that although we intend to conclude on changes to the overall structure of charges later this year, the **level of charges** can only be determined at this later stage of PR23. This is because it is informed by traffic volume forecasts and Network Rail's overall funding settlement for CP7, which are finalised at this point in the periodic review. Some charges will also be affected by Network Rail's recalibration exercise.

A timetable for the rest of the PR23 charges review is set out in **Annex 1**. We note that these milestones may change as the review progresses. Furthermore, reflecting the wider context of rail reform, we will continue to remain flexible to respond to industry developments as GBR is established and as transition and implementation plans become clearer.

1. Introduction and overall approach

1.1 We are currently undertaking our periodic review 2023 (PR23). The PR23 programme will determine the level of funding that Network Rail should receive for its infrastructure management activities, and what it should deliver over the five years from April 2024, known as Control Period 7 (CP7). It is also the vehicle through which the access charges for use of its infrastructure are determined.

1.2 The UK Government's rail reform programme is progressing alongside PR23. As set out in the Williams-Shapps Plan for Rail, Great British Railways (GBR) will adopt, and be held accountable for, delivering the commitments made in PR23 when it succeeds Network Rail. This Plan does not seek to change the powers and responsibilities held by the Scottish and Welsh Governments and other devolved rail authorities in relation to rail.

1.3 As part of PR23, we are reviewing the structure of the access charges that are paid by train operators (passenger, freight, and charter) for use of Network Rail's track and stations. Network Rail received £2.3bn in access charges revenue in 2020-21 (24% of total income), with the balance made up of network grant funding (£6.6bn) and other commercial income such as property rental (£0.6bn)[2].

1.4 Access charges serve a number of purposes, besides ensuring that Network Rail recovers an appropriate level of costs from rail users. In particular, charges can provide incentives for operators to reduce network costs and make efficient use of the network. The information revealed by charges can also support better decision-making by Network Rail and wider industry, and can allow for a greater degree of scrutiny of Network Rail. Charges can therefore play a role in making the rail industry more efficient and improving outcomes for end users and taxpayers.

1.5 The key principles of access charging – and exceptions to those principles – which underpin Network Rail's charging framework and specific charging rules are set out in Schedule 3 of the Railways (Access, Management and Licensing of Railway

[2] ORR analysis of Network Rail's Regulatory Financial Statements, 2020-21, Statement 2, available here. Commercial income includes the Schedule 4 access charge supplement. The largest single charge is the fixed track access charge, which accounted for £1.3bn in charges revenue in 2020-21. As explained in Chapter 2, the level of this charge is affected by the level of network grant funding.

Undertakings) Regulations 2016 ("the 2016 Regulations"), and summarised in Chapter 1 of our initial consultation on the PR23 charges review.

July 2021 consultation

1.6 We published our initial consultation on the PR23 charges review in July 2021 ("the July 2021 consultation"). In that consultation, we proposed not making any fundamental changes to Network Rail's charging framework through PR23. This reflected the fact that the UK Government's rail reform programme is considering the future access and charging arrangements for GBR, which we said could supersede the existing charging framework, including any changes made as part of PR23. Furthermore, given uncertainty over the timing and scope of reform, we said any such changes must continue to align with existing legislative requirements, which limit the extent to which we can make major changes to the structure of charges.

1.7 We instead identified a limited number of incremental changes to the current charging framework that we could take forward through PR23. We considered these changes would ensure the overall charging framework remains as effective as possible, both in an interim period (until any new legislation is passed and fully implemented), but also potentially on a more enduring basis if the current framework was to be adopted within the access system that applies for GBR.

1.8 We also committed to reviewing some specific decisions made during the last periodic review (PR18) that we said we would revisit in future (e.g. the suitability of caps on existing charges), as well as reviewing the evidence underpinning which types of operator can bear infrastructure cost charges (ICCs), to ensure these charges comply with relevant legislative requirements.

Confirming our approach to PR23

1.9 In general, there was broad support across industry for the proposed approach to the PR23 charges review. Respondents emphasised the need to take a proportionate approach, given the uncertainty about the future access and charging framework, and agreed that we should focus only on changes which are consistent with existing legislation. At the same time, there was also support for making some proportionate changes to existing charging arrangements, where it can be demonstrated that this would deliver clear benefits (particularly by reducing unnecessary complexity with current arrangements).

1.10 There were two major areas where some respondents suggested we could look to go further through PR23:

(a) Adapting to industry change. Some respondents considered that we could do more to align the charging framework with expected future industry arrangements. In particular, some respondents suggested we should consider exempting operators from certain charges, in light of the possibility that passenger operators who are awarded contracts to operate services on behalf of GBR may not be required to pay access charges in future.

(b) Supporting environmental outcomes. Some respondents said we could do more within the existing legislative framework to set access charges to incentivise better environmental outcomes. They said this would align the PR23 charges review more closely with aspirations in the Williams-Shapps Plan, particularly relating to rail freight and decarbonisation.

1.11 We discuss these areas in more detail below.

Adapting to industry change

1.12 PR23 is taking place amid significant on-going change and uncertainty. As noted in our July 2021 consultation, governments have already replaced franchises with concession-style agreements, as well bringing some passenger services under greater direct control. This has been driven in part by the significant decline in passenger revenues following the Coronavirus (COVID-19) pandemic.

1.13 Furthermore, as set out above, the UK Government is progressing implementation of its Williams-Shapps Plan for Rail. This Plan intends to establish a new body – GBR – that in future will both own the railway infrastructure and let and manage the passenger rail contracts currently awarded by the UK Government. We understand that the UK Government intends to issue a consultation on legislation to implement this Plan, and we recognise this may propose some changes to the regulations around access charging.

1.14 Where possible, it is important that our PR23 charges review takes account of changes to industry arrangements and the commercial dynamics that are likely to be present during CP7. We said in our July 2021 consultation that we will remain flexible in PR23 to respond to industry developments – particularly in relation to the UK Government's rail reform programme.

1.15 However, at this stage, we still cannot accurately anticipate which regulations that currently underpin how we set Network Rail's charging framework, would continue to apply to GBR[3]. We are unlikely to have full clarity on this before autumn 2022, the point at which we need to conclude on key changes to the charging framework (to allow time for the recalibration process[4] and to make the required changes to track access contracts for the start of CP7). For this review, our approach must therefore continue to reflect the existing regulations governing access charging.

1.16 An important principle contained within the existing regulations is that they require an infrastructure manager to determine and collect fees for using its infrastructure. The regulations also establish the charging principle that train operators must pay the costs directly incurred in running train services. This means that we need to proceed on the basis that all train operators would continue to be required to pay charges for the minimum access package in CP7[5]. This would include operators which provide services that may be let and managed by GBR in future, through passenger service contracts (PSCs).

1.17 As noted by some respondents to our July 2021 consultation, the existing regulations allow for some flexibility in respect of Network Rail levying mark-ups (i.e. ICCs). We have set out in Chapter 2 of this consultation our view on how ICCs should be set in CP7, in light of the wider industry context. This includes the fixed track access charge (FTAC), which is currently paid by operators on concession-style agreements (some of which may move onto PSCs in future)[6].

1.18 Furthermore, under any future system, GBR will require an effective framework for charging other operators who use the network. This includes freight, open access and charter operators, as well as passenger operators contracted by other rail authorities. Many of the issues that we consider in this consultation relate to the charges faced by these operators, and are therefore likely to continue to be relevant in a reformed industry structure.

[3] Specifically, Part 4 and Schedule 3 of the 2016 Regulations.

[4] This stage of the review will involve updating charges to reflect new data for CP7 (particularly on costs and volumes), and potentially making some changes to the detailed methodology and calculations.

[5] The minimum access package is those services set out in Schedule 2 of the 2016 Regulations, essentially the services necessary to access the infrastructure. Network Rail sets its variable charges in accordance with this.

[6] We use this term to refer to all operators that are commissioned by funders and other devolved rail authorities to provide passenger services, as well as directly operated services (e.g. ScotRail Trains Limited).

Environmental factors

1.19 In our July 2021 consultation, we recognised the growing importance of delivering a more environmentally sustainable rail network to support governments' roadmaps to net zero carbon and other environmental objectives[7]. However, we said the existing legal framework establishes that charges should be set to reflect the costs to the infrastructure manager (i.e. Network Rail) of providing network access, rather than wider costs to the environment[8]. We did not therefore propose to amend any existing charges to explicitly reflect the environmental costs associated with network use.

1.20 Several respondents said we should reconsider what scope may be available within current legislation to support better environmental outcomes. Respondents noted that some European countries had recently reduced freight access charges with the intention of supporting modal shift from road to rail and reducing overall carbon emissions from their transport sectors. However, as acknowledged by some respondents, these countries operate under a different legislative framework[9]. We remain of the view that setting charges below the level which allows Network Rail to recover its directly incurred costs (for example, by way of a discount on charges), to reflect any environmental benefits of rail, would not be consistent with the 2016 Regulations. Likewise, we do not consider that charges can be differentiated on the basis of traction type (e.g. diesel or electric) unless they have different impacts on the network.

1.21 Respondents suggested that our existing phasing-in policy for freight variable usage charges (VUCs) is a specific lever available to us to support environmental objectives, that is permissible within the current legislative framework. They said that pausing or phasing-in VUC increases over a longer time period would encourage greater use of rail freight over less environmentally friendly transport modes, which supports wider decarbonisation objectives for the UK. We have considered this, but we disagree that our VUC phasing-in policy can be amended in these ways. Our full position on VUC phasing-in is set out in Chapter 3.

[7] We noted that DfT and Transport Scotland have both published transport decarbonisation plans, which consider a range of possible policy measures to support this objective.

[8] Schedule 3 of the 2016 Regulations, paragraphs 1(4,5) and 2(1).

[9] Specifically, Article 31.5 of Directive 2012/34/EU which states that infrastructure charges may be modified to take account of the cost of environmental effects caused by the operation of the train. These elements of the EU legislation were not transposed into UK legislation.

1.22 As noted above, it is possible that future amendments to charging regulations may affect this position. If such changes are considered by the UK Government, environmental impacts could be a specific focus for consideration[10]. However, we cannot anticipate any such changes as part of this review.

1.23 Notwithstanding this, for PR23, we have continued to have regard to environmental outcomes where we consider this is appropriate. Our proposals to encourage greater use of on-train metering for EC4T (see Chapter 3) have been developed with this in mind. We have also taken environmental impacts into account in our review of current freight ICCs (see particularly paragraph 2.78). We will continue to have regard to these impacts, alongside our wider duties under Section 4 of the Railways Act, in deciding how these charges should be set.

1.24 We consider that this approach will ensure the PR23 charges review reflects governments' aspirations in respect of the environment.

Overall approach

1.25 In light of the considerations set out above, we have continued to focus on making some incremental changes to Network Rail's existing charging framework. We do not intend to pursue any more fundamental changes to this framework for CP7. We consider this will provide industry – primarily those sectors which are commercially exposed to charges – a degree of certainty and stability over the charges they will face in CP7.

1.26 We have developed our more detailed proposals for this consultation on this basis. We have given particular focus to areas where is scope to reduce the complexity and administrative burden of aspects of some charges, where this no longer appears proportionate. We have also developed the detail of some areas for which we highlighted we would undertake further work in our July 2021 consultation (in particular, reviewing the ICCs relevant to freight and open access operators).

1.27 As we refine and finalise these specific proposals during the next phase of this review, we will continue to work closely with the Department for Transport (DfT), Transport Scotland, Transport for Wales, other devolved authorities and wider

[10] In our July 2021 consultation, we noted that the Rail Safety and Standards Board (RSSB) had commissioned a study on the feasibility of different incentive schemes that can support the business case for deploying carbon emissions reduction and mitigation technologies on trains. We have engaged with RSSB on this work. This study, which concluded in March 2022, has considered the impact of a scheme whereby track access charges are differentiated based on emissions standards. However, as explained above, RSSB notes that such a scheme would require changes to track access charging regulations.

industry to understand how any transitional arrangements may work as GBR is established, and how this may affect the charging framework. We expect this work to continue in parallel with the rest of the PR23 programme.

Summary of proposals

1.28 Our detailed set of proposals for Network Rail's charging framework is summarised in Table 1.1 below. This table distinguishes between proposals which we are minded to take forward, based on responses to our July 2021 consultation, and proposals for which we are specifically seeking further views from industry.

1.29 The proposals are explained in more detail in the rest of this consultation. We also explain where we have decided not to take forward a July 2021 consultation proposal, and the reasons for this.

Table 1.1: Summary of further proposals for PR23 charges review

	Proposals we are minded to take forward	Proposals for further consideration
ICCs	• Continue to use Network Rail's existing cost allocation methodology as the basis for allocating fixed costs to operators • Remove the 'wash-up mechanism' for the fixed track access charge (FTAC) that is paid by operators on concession-style agreements (while maintaining this charge)	• Retain the freight ICC for iron ore; spent nuclear fuel; and ESI biomass, but remove the ICC on ESI coal (subject to further review later in PR23) • Retain the existing market segmentation which underpins the scope of the ICC for open access services
Variable charges	• Maintain the existing phasing-in of VUC increases for freight and charter operators (subject to further review later in PR23) • Simplify the EC4T charge, by removing: (i) the partial fleet metering charging approach; and (ii) the loss incentive mechanism used in the EC4T reconciliation process • Retain the EAUC in its current form	• Maintain the existing cost categories and track damage formulae that are used to calculate VUC rates • Allow VUC rates to be modified during CP7 if Network Rail withdraws heavy axle weight (HAW) capability during CP7 • Remove the facility to obtain EC4T modelled consumption rates for new train services
Station charges	• Work with Network Rail on improving published guidance and explanatory notes on station LTCs	• Amend how the long-term charge for some franchised stations is calculated, by: (i) expanding the number of station LTCs set using station-specific forecasts (to include the largest franchised stations); and (ii) classifying new franchised stations as 'new' for a fixed five-year term from the date of opening
Inflation indexation	• Maintain the inflation index (CPI) that is used to update Network Rail's access charges (and payment rates in other mechanisms)	

2. Infrastructure cost charges

Summary

We are minded to retain the fixed track access charge (FTAC) for all passenger operators on concession-style agreements, as an annual lump-sum charge. The FTAC paid by each operator (net of any network grant payments) would continue to be based on Network Rail's existing fixed cost allocation methodology developed for CP6.

For freight operators, we are proposing to maintain the ICC for services transporting iron ore, spent nuclear fuel, and ESI biomass. We are seeking views on the appropriate level of these ICCs for CP7. We propose to remove the ICC for ESI coal on proportionality grounds, pending a further review of forecast volumes for this commodity later on in PR23.

For open access operators, we intend to maintain the existing market segmentation that underpins the scope of this ICC. The level of the ICC is subject to further analysis, which we will take forward in the next stage of this review. We are also seeking views on whether or not the existing relief from this charge for some operators should continue for CP7.

Introduction

2.1 This chapter discusses our approach to ICCs, which recover a portion of Network Rail's fixed costs. In CP6, the following ICCs are paid:

(a) Operators on concession-style agreements pay the **fixed track access charge (FTAC)**. The FTAC is an annual lump-sum charge, allocated to each operator based on forecast traffic levels for the control period.

(b) Freight operators pay **ICCs for carrying certain commodities** (which for billing purposes is known as the freight-specific charge, or FSC). The commodities that are liable to pay ICCs, and the level of the charge, are based on an assessment of operators' ability to bear the charge.

(c) Open access operators are liable to pay **ICCs on new interurban services**, phased-in over the first five years of the operation of new services. As with the ICC for freight services, this charge is based on an assessment of operators' ability to bear the charge.

2.2 In the rest of this chapter, we firstly consider the approach to allocating fixed costs between different operators, which underpins the calculation of ICCs (particularly FTACs). We then set out our preferred approach in respect of the specific ICCs paid by each type of operator, taking account of responses to our July 2021 consultation and further work undertaken since then.

Approach to allocating fixed costs

2.3 In order to set ICCs for train operators, it is firstly necessary to allocate Network Rail's fixed costs to operators. During PR18, Network Rail revised its fixed cost allocation methodology to allocate costs in a way which more closely reflects the causes of costs in terms of operators' different service characteristics or patterns of use. This methodology is described in more detail in ORR's access charging user guide and Annex 3 of our July 2021 consultation[11].

2.4 Network Rail's fixed cost allocation methodology underpins the FTAC that is paid by operators on concession-style agreements[12]. However, the actual FTAC is lower than their total allocation of (avoidable) fixed costs because Network Rail recovers a proportion of fixed costs through network grant payments from funders. These payments are subtracted from each operator's "pre-grant" FTAC, in proportion to their share of total FTAC.

July 2021 consultation

2.5 In our July 2021 consultation, we said that Network Rail's existing cost allocation methodology remains an appropriate basis on which to allocate fixed costs to operators. We also noted that Network Rail is planning to review the traffic characteristics that are currently used to allocate these costs[13]. We said we would work with Network Rail to understand the implications of any proposed refinements to this methodology, which will inform our view on whether to incorporate these changes in determining ICCs for CP7.

[11] Under this methodology, only traffic-avoidable fixed costs are allocated to operators, i.e. costs which could potentially be saved in the long-run by reducing the volume and type of traffic running over the network. Non-avoidable fixed costs (costs associated with assets required to maintain the current connectivity of the network) are allocated directly to funders and recovered through network grant funding.

[12] The level of ICCs for freight and open access operators is primarily determined by their ability to bear mark-ups, rather than deriving directly from cost allocations.

[13] These include speed, axle load, unsprung mass, curving class, electrification, and depot usage.

Summary of responses

2.6 Stakeholders generally agreed that Network Rail's existing cost allocation methodology is an appropriate basis on which to continue to allocate fixed costs. Several respondents said that we should avoid increasing the complexity of this methodology during this review. One respondent said that it has no issue with increasing complexity if it were to improve cost reflectivity and understanding of long-run cost drivers, but agreed that now would not necessarily be the optimum time for implementing material changes.

2.7 Transport Scotland said it is not content with the existing cost allocation methodology in respect of the absence of costs being allocated to cross border operators whose services run in Scotland. It said these arrangements are inconsistent with the principle of cost-reflective charging.

2.8 Network Rail agreed that the existing fixed cost allocation methodology should continue to be applied in CP7 without any fundamental changes. It also confirmed that it intends to consider potential minor changes to the methodology, focusing on: the traffic characteristics used to allocate costs; and simplifying the model in certain areas (e.g. in respect of how costs are allocated to route sections on the network). Network Rail said that a simpler model would be easier for stakeholders to understand, enhancing the effectiveness of stakeholder engagement.

Our assessment and preferred approach

2.9 In light of consultation responses, and given the significant work undertaken in PR18 in this area, we do not intend to make any major changes to Network Rail's existing fixed cost allocation methodology. The ICCs paid by operators in CP7 will therefore continue to be underpinned by the existing methodology (though, as explained above, the actual level of ICCs paid by operators will be different to these cost allocations).

2.10 In relation to Transport Scotland's views on the treatment of cross-border operators, we note that this issue was raised in previous access charges reviews. This aspect of the methodology was designed when the current funding arrangements between funders were agreed, whereby Transport Scotland specifies the network in Scotland, and DfT in England and Wales. We do not consider the current cost allocation methodology can be reviewed for the issue raised by Transport Scotland unless these arrangements are also reviewed, and

we understand that there are no plans by funders to revisit these funding arrangements for PR23.

2.11 We remain supportive of Network Rail reviewing its fixed cost model and considering some potential minor changes to the methodology, including as a way of simplifying the model, provided that these do not result in a material loss of transparency over fixed cost drivers or a less appropriate allocation of fixed costs. We welcome Network Rail's confirmation that it will consult on any changes as part of its recalibration exercise for CP7, and we will work with Network Rail to understand the impact of any changes as this work develops.

Fixed Track Access Charge

2.12 All operators on concession-style agreements pay the **FTAC**[14]. The FTAC for each operator is based on the cost allocation methodology described above, adjusted to reflect network grant income from funders.

2.13 The FTAC is an annual charge set as part of our periodic review before the start of each control period. In PR18, we decided to introduce a volume incentive mechanism known as the "FTAC wash-up", which adjusts an operator's annual FTAC in proportion to variations in timetabled train miles. However, in 2020 we decided not to implement this mechanism in CP6.

July 2021 consultation

2.14 In our July 2021 consultation, we proposed to retain the FTAC for all operators on concession-style agreements. We said that we would work with both DfT and Transport Scotland to understand the grant funding that they will make available for CP7, and how this will affect the FTACs paid by operators.

2.15 We also proposed to remove the FTAC wash-up mechanism. We considered that introducing this mechanism for CP7 would involve additional time and resource for industry, without creating meaningful incentives for operators (both now and under a reformed industry structure).

[14] This also includes directly operated services (e.g. ScotRail Trains Limited), as explained in Chapter 1.

Summary of responses

2.16 Several respondents said we should review the suitability of current FTAC arrangements as a way of recovering a portion of Network Rail's fixed costs:

(a) DfT said we should keep open the question of whether DfT-contracted operators are subject to FTAC until further reform work has been completed. It said there may be opportunities for alternative funding arrangements which ensure that the fixed costs of the railway are met while ensuring a practicable and effective process, which is not discriminatory in effect. Likewise, Transport Scotland said there may be simpler and more efficient funding arrangements than the current approach, where all operators pay FTAC.

(b) Network Rail also said we should keep open the option of exempting operators commissioned by DfT and Transport Scotland from paying access charges, where contractual arrangements hold those operators harmless against a charge. Network Rail noted there is a requirement under existing legislation for non-discriminatory charges, but said such an approach cannot reasonably be considered discriminatory if it does not have any effect on operators' behaviour, and cannot result in any advantage to those operators.

(c) Transport for London and MTR said the FTAC introduces significant financial risk to funders outside central government, as the level of FTAC depends on external factors such as the level of network grant funding. Transport for London said it would be fairer for government to fund Network Rail's fixed costs entirely through the network grant.

(d) Arriva and the Rail Delivery Group (RDG) said current FTAC arrangements lack transparency, due to the interaction with the network grant mechanism. Arriva suggested that FTAC should be removed altogether, with all operators paying an ICC on a consistent basis using a common test of "ability to bear".

2.17 On the basis that the FTAC continues to be paid in CP7, most respondents agreed that we should remove the FTAC wash-up mechanism. West Midlands Rail Executive agreed with our proposed approach, but said we should consider how GBR (or Network Rail's System Operator in the interim) is incentivised to accommodate additional publicly contracted services, while not unduly affecting performance. Transport for London and MTR said that in the absence of this mechanism, consideration should be given as to how to incentivise industry to reduce fixed costs.

Our assessment and preferred approach

2.18 The FTAC is a mark-up currently levied on all passenger operators on concession-style agreements. There is no requirement for Network Rail to levy this mark-up if it can recover its fixed costs through other sources[15]. However, if the FTAC is levied, it must comply with the requirements set out in Schedule 3 of the 2016 Regulations – including that it is set on the basis of efficient, transparent and non-discriminatory principles.

2.19 In previous periodic reviews, we have generally favoured funding Network Rail's fixed costs via charges from train operators, rather than from network grants, on the basis that network grants could blur accountabilities and worsen incentives on Network Rail. We recognise that such considerations are likely to be less relevant now that DfT and Transport Scotland are more closely specifying passenger services and paying for the costs incurred in providing them (either through their concession-style agreements with train operators, or, in the case of ScotRail Trains Limited, by directly operating services).

2.20 In this context, exempting these passenger operators from FTAC (in favour of higher grant funding) could simplify Network Rail's funding arrangements by consolidating public funding flows. However, if passenger operators commissioned by devolved rail authorities continue to pay FTAC, these operators would face a different set of charges. Under existing regulations, it is not clear that there is a sufficient objective justification for such differential treatment between passenger services operating within the framework of a public service contract. This is particularly the case given that the practical benefits of removing FTAC for some operators, in terms of administrative cost savings, are likely to be small[16].

2.21 Furthermore, we consider there would be some specific implications of exempting operators from FTAC:

(a) Firstly, it would remove a mechanism that helps to provide funding certainty for Network Rail. This is because operators' track access contracts provide for FTAC to be increased to cover any shortfall in network grant funding, for instance due to a change in the terms of grant arrangements following ORR's

[15] Network Rail also recovers a portion of its fixed costs through direct network grant payments; other ICCs levied on freight and open access operators; and 'other single till income' (e.g. property rental and sales).

[16] We understand FTAC is currently billed per rail period, although this payment schedule could be altered.

final determination[17]. We consider this is important to ensure Network Rail can adequately plan its business for the control period.

(b) Furthermore, and linked to the above, we do not have certainty at this stage of the review over the terms of any grant funding arrangements for CP7. Making changes to track access contracts to remove FTAC before alternative funding arrangements are confirmed would create a further risk to the overall PR23 funding settlement, particularly if these arrangements were to change late on in the process.

(c) Thirdly, unlike network grant funding, the FTAC is currently indexed by CPI, which gives Network Rail some protection from inflation risks. This is likely to be particularly useful in the current economic climate.

2.22 With these considerations in mind, we have set out below our preferred approach in respect of FTAC arrangements for England & Wales, and for Scotland, in CP7[18].

England and Wales

2.23 Since our July 2021 consultation, we have held further discussions with DfT about Network Rail's funding arrangements. We now understand that DfT is content to maintain the FTAC for its operators. Taking this into account, alongside the considerations set out above, **we are not proposing any changes to FTAC arrangements in England & Wales.**

2.24 We recognise that this approach leaves other devolved rail authorities in England & Wales financially exposed to changes in the level of FTAC. This is one reason why we have sought clarity from DfT at an early stage in the PR23 process about network grant funding for CP7. We will continue to work with industry, so these authorities understand potential changes to their FTAC as soon as possible.

2.25 We disagree with Transport for London that it would be fairer for government to fund Network Rail's fixed costs entirely through network grant. We consider that all operators on concession-style agreements (or those specifying these services) should continue to make an appropriate contribution to the long-run costs that they

[17] This is known as the 'grant dilution', and is set out in Part 3A of Schedule 7 of operators' contracts.

[18] In the longer-term, once GBR is established and there is greater clarity over its contractual arrangements for passenger services that it lets and manages, there may be value in further reviewing how GBR should recover its fixed costs, within the legislative requirements that apply. We will continue to monitor such developments and consider these implications for the next review.

cause on the network. In any case, the decision to provide grant funding is a matter for funders, rather than ORR.

2.26 Notwithstanding this, we agree with Arriva that the current FTAC arrangements could be more transparent. We said in our July 2021 consultation that we will consider how to improve the information in this area. As such, as part of our PR23 final determination, we intend to publish the final outputs of Network Rail's fixed cost allocation process. This will set out the "pre-grant" FTAC amount for each train operator, as well as the level of grant funding that is deducted from each operator's pre-grant FTAC to calculate actual FTAC payments over CP7.

2.27 With regards to Arriva's suggestion that FTAC be replaced with an ICC applied to all operators, we note that the FTAC is already based on an 'implicit' market-can-bear test, which takes account of the fact that operators on concession-style agreements can pass through this charge to their rail authority. We recognise that FTAC is levied differently to other ICCs, but we considered the design of the FTAC at length in PR18 and concluded that it was appropriate to continue levying this charge on a lump-sum basis (adjusted annually for changes in timetabled traffic)[19]. As discussed below, we now consider that we should continue levying FTAC on a lump-sum basis without this adjustment.

Scotland

2.28 In Scotland, the only operators paying FTAC are those commissioned by Transport Scotland (ScotRail Trains Limited and Caledonian Sleeper). This means that changing the balance of cost recovery such that fixed costs are instead recovered through network grant would have no financial impact on other parties.

2.29 However, while we recognise that consolidating these funding flows would be simpler, we consider that maintaining FTAC would preserve some benefits (as set out in paragraph 2.21). Furthermore, as set out above, it is not clear that there would be a clear objective justification under current regulations for exempting just these passenger services from paying a FTAC. As such, **we are also not proposing any changes to FTAC arrangements in Scotland for CP7**.

2.30 We will continue to work with Transport Scotland during the next phase of this review to understand the grant funding that they will make available as part of their Statement of Funds Available, and how this may differ from that in PR18. We will

[19] This was discussed in our September 2017 consultation on charges recovering fixed costs, and our PR18 draft determination (supplementary document on ICCs).

also work with both DfT and Transport Scotland to agree the process for confirming the terms of network grant arrangements for CP7, with a view to putting in place signed deeds of grant as early as possible during PR23 (setting out the yearly level of the funding and the terms of the arrangements). We expect to provide a further update on this during the implementation phase of this review.

FTAC wash-up mechanism

2.31 On the basis that operators continue to pay FTAC, we are minded to proceed with our July 2021 consultation proposal to remove the FTAC wash-up mechanism. This proposal was generally supported by respondents, for the reasons set out in our consultation. This means that FTACs for CP7 would be set at the start of the control period and paid as an annual lump-sum charge.

2.32 We agree with West Midlands Rail Executive that it will be important to consider how Network Rail – and GBR in future – continues to develop its capability in respect of network capacity use, including for those operators which are not contracted in future by GBR. As noted in our July 2021 consultation, we are considering this issue as part of our approach to regulating the System Operator, and we expect to provide an update on this as part of our consultation on how we will hold Network Rail / GBR to account in CP7 (planned for summer 2022).

2.33 We also agree with Transport for London that industry should be incentivised to reduce its fixed costs. In parallel with our review of charges, we have been working with Network Rail on the development of its CP7 business plans. We are currently scrutinising its initial CP7 plans and will be providing formal advice to funders in early summer 2022 to consider, among other things, whether Network Rail's forecasted expenditure (as set out in these plans) represents an efficient level of spend. This will inform funders' views on the total funding they will make available to Network Rail in CP7.

ICC for open access services

2.34 In PR18, we introduced an ICC for open access operators for the first time. This policy aimed to facilitate increased on-rail competition between passenger services over the longer-term, by allowing open access operators to benefit from potentially greater access to the network, while requiring that they contribute towards Network Rail's recovery of fixed costs where they are able to do so.

2.35 In order to levy ICCs, the 2016 Regulations require us to assess the ability of different market segments to bear charges above directly incurred costs. We

undertook a market-can-bear test for open access operators in PR18, and concluded that services operating in the interurban market segment would be able to bear a charge[20]. We introduced an ICC payable by new interurban services of £4 per train mile, to be phased-in over the first five years of the operation of new services. Existing interurban services were granted relief from any increase in charges prompted by this ICC, for the whole of CP6.

July 2021 consultation

2.36 In our July 2021 consultation, we proposed to retain the ICC for open access operators in CP7, subject to updating the open access market-can-bear test as part of PR23. We said that we intended to start updating this test later in 2021.

Summary of responses

2.37 DfT and Network Rail said they continue to support ICCs for some open access operators, subject to a market-can-bear test reflecting the latest market conditions.

2.38 Only one train operator (Grand Union Trains, "GUT") commented in detail on our proposed approach to ICCs for open access. GUT said the current ICC creates insurmountable barriers for new long-distance open access services (e.g. between Wales and Scotland), as it naturally puts the focus on London flows. It said this charge required further detailed assessment. GUT also said the issue of 'ability to pay' is irrelevant while ORR takes the position that the impact on Secretary of State funds is the core criteria for assessing open access applications.

Autumn 2021 market-can-bear analysis

2.39 We remain of the view that the open access ICC should be maintained in CP7, subject to the outcome of a market-can-bear test. For the reasons set out in our July 2021 consultation, we consider this supports our wider duties in respect of promoting competition in the provision of services, and having regard to Secretary of State funds[21].

[20] We defined an interurban service as one for which: at least one station served has average entries / exits above 15 million passengers per year, or the station served is within two miles of a station meeting that criterion; at least one other station served has average entries / exits above 10 million passengers, or is within two miles of a station meeting that criterion; and two of the stations meeting these demand thresholds are at least 40 miles apart. See our March 2019 conclusions document on open access ICC implementation.

[21] GUT said that the open access ICC does not affect the level of FTAC paid by relevant operators, and represents an increase in revenue for Network Rail above the settlement figure. We recognise that FTACs in the control period that we are setting charges for will not be affected by ICCs from new open access services

2.40 We have therefore started to update the market-can-bear test that was initially carried out in PR18 to set the existing open access ICC. We disagree with GUT that this is not relevant to assessing open access applications. We assess each application on a case-by-case basis in the manner we consider best achieves our statutory duties. The weight we place on each duty is a matter for us, depending on the circumstances of each case. All other things being equal, the inclusion of ICC revenues will reduce the impact on the Secretary of State's funds, and will therefore be a relevant consideration in any assessment.

2.41 The basis for the market-can-bear test is set out in Schedule 3 of the 2016 Regulations, which states that the effect of levying mark-ups "must not be to exclude the use of infrastructure by market segments which can pay at least the cost that is directly incurred as a result of operating the railway service, plus a rate of return which the market can bear". In applying this test, we must first categorise passenger services into distinct market segments. The 2016 Regulations require us to consider two types of passenger services: those within the framework of a public service contract; and other passenger services (i.e. open access). Passenger operators under public service contracts are liable for a separate fixed charge – the FTAC – which is discussed in detail above[22]. The focus of our more detailed market-can-bear analysis has therefore been open access services.

2.42 We are also required to consider the relevance of the list of pairs of passenger services, as defined in paragraph 2(10) of Schedule 3 of the 2016 Regulations:

(a) domestic versus international services. As international services mostly run on the HS1 network and make limited use of Network Rail's infrastructure, we have not sought to segment passenger services on this basis;

(b) regular versus occasional (i.e. charter) train services. Charter services represent a very small proportion (roughly 0.15%) of total passenger traffic, and information on costs and revenues for these services is not readily available. We have not therefore explored ability to bear specifically for charter services any further, and do not propose to levy an ICC on them; and

within that control period (i.e. for those services that we are not aware of at the time of our determination). However, Network Rail will take account of revenues from open access, in calculating its revenue requirement for the next control period. For this reason, removing ICCs for open access operators would imply recovering a greater proportion of fixed costs from other passenger operators (and ultimately funders), through FTACs.

[22] As set out in paragraph 2.27, the FTAC is based on an implicit market-can-bear assessment which takes account of the fact that this charge is passed through to funders or other rail authorities (either directly or via operators' concession-style agreements).

(c) urban or regional versus interurban passenger services. Our PR18 analysis explicitly considered these services, and resulted in us levying an ICC only on new interurban services. We have reviewed this segmentation as part of our updated analysis, as discussed in more detail below.

2.43 In September 2021, we commissioned Steer to undertake a review of the PR18 market-can-bear analysis. The PR18 analysis involved an assessment of operating surplus (or 'net revenue') at service code level[23]. We used this analysis to inform our understanding of the characteristics of different passenger services, and therefore a possible market segmentation of services for CP6. We also used it to inform the level of the ICC, for services identified as being able to bear an ICC.

2.44 We asked Steer to update this analysis to estimate expected operating surpluses for passenger services in CP7, taking account of changes in costs and revenues since PR18. In doing so, Steer have sought to forecast how demand – and revenues – are likely to recover from the pandemic between now and year 1 of CP7[24]. We note that this analysis is not a full profitability analysis for individual services, but rather is intended to inform our high-level understanding about how operating surplus is likely to vary across passenger services in CP7, for the specific purpose of reviewing this ICC.

2.45 Steer's analysis is set out in a separate report (Annex 4 to this consultation). The key findings from this analysis can be summarised as follows:

(a) Operating surplus across GB passenger services is expected to be lower in the first year of CP7 than when we previously assessed the market in PR18. This is partly due to the impact of the pandemic on revenues. However, a significant proportion of service codes are forecast to generate a positive operating surplus (18%, compared to 24% when we undertook this analysis in PR18).

(b) In general, interurban services continue to exhibit some of the highest operating surpluses. However, expected operating surplus is quite broadly distributed across this type of service, with a proportion of these services forecast to be marginally profitable (i.e. operating surplus is slightly positive) or unprofitable (operating surplus is negative) in CP7. This indicates that

[23] Operating surplus was calculated as revenue per train mile minus average cost per train mile.

[24] To do this, Steer modelled three scenarios based on industry assumptions about the long-term impact of the pandemic on passenger demand (low; medium; and high growth).

there is likely to be some variation in ability to bear, within the set of open access services that we have defined as interurban.

(c) The existence of a London stop appears to be a particularly significant service characteristic, with a significant proportion of services with the highest operating surpluses either starting or ending in London.

2.46 Steer did not consider service types at a more granular level than service code, e.g. by time-of-day or day-of-week. Service codes do not generally distinguish between peak and off-peak services, and we consider that industry data systems mean that an ICC could only be applied in practice at service code level. As such, we would not be able to reflect this dimension as part of any market segmentation of open access services. Nevertheless, we recognise this is relevant to the question of ability to bear for a given market segment, and we will consider it at that stage of the analysis (as discussed in more detail in paragraph 2.58 below).

Market segmentation

2.47 We have considered the implications of Steer's analysis for the design of the open access ICC. We have focused initially on whether the existing market segmentation underpinning the scope of this charge remains appropriate.

2.48 In line with our overall approach to the PR23 charges review, we have not sought to fundamentally revisit the approach taken in PR18. Rather, we have considered whether the existing segmentation can be refined in a way that better reflects the key characteristics of passenger services, in terms of the costs of providing services, the revenues earned (through the prices that passengers are willing to pay) and the requirements for service quality. This can be approached by considering how operating surplus varies across services running on the network, as this is directly determined by revenues earned on each service, and the costs of running these services[25].

2.49 Based on the updated analysis of operating surplus, and also taking account of our PR18 analysis which identified geography and journey purpose as particularly relevant passenger characteristics, Steer identified three possible market

[25] The calculation of costs is on a modelled basis, taking into account the different requirements for service quality associated with different services.

segmentations for CP7 that would distinguish open access services in terms of these key characteristics:[26]

(a) **Option 1:** Maintain the status quo, i.e. an interurban market segment and an "other" segment (capturing all other services), based on the existing definition of an interurban service.

(b) **Option 2:** Amend the definition of the existing interurban segment such that it only captures London-based flows; but also widen the definition to capture more London-based flows than Option 1, by lowering the existing distance and passenger usage thresholds used to define an interurban service. We would define this market segment as 'London interurban'.

Steer considered that a minimum distance threshold of 20 miles (instead of 40 miles) and a minimum passenger usage threshold of 5 million entries / exits (instead of 10 million) could be suitable thresholds. In practice, this would have the effect of grouping London intercity and long-distance commuter services in a single market segment, distinct from all other services. This reflects the importance of London as a key distinguishing characteristic of passenger services, which is borne out in Steer's updated analysis of operating surplus.

(c) **Option 3:** Amend the definition of the existing interurban segment such that it only captures London-based flows, but maintain the existing distance and passenger usage thresholds. As with Option 2, we would define this market segment as 'London interurban'. This would largely capture London intercity services, along with some of the very long-distance commuter services.

2.50 We have illustrated the set of routes covered by each option in a matrix[27]. All three options capture a portion of intercity services, while Options 2 and 3 further distinguish London-based services to reflect the specific characteristics of these services as indicated by the analysis of operating surplus. Option 2 also includes more long-distance commuter services to London, which – like intercity services – tend to exhibit higher operating surpluses, but it would exclude all intercity services

[26] These options are based on 2018-19 station entry and exit figures (i.e. the last full year before COVID-19), to allow for ease of comparison with PR18. In coming to final decisions on market segmentation, we will seek to base the definition on data from more recent years. This may affect the specific thresholds we set, but it would not significantly change the services included in each segment.

[27] Under all options, we intend to maintain the existing criteria relating to neighbouring stations, i.e. all stations within two miles of stations that meet the passenger usage thresholds would also be included in the relevant market segment. However, for simplicity, these are not covered in this matrix.

between other UK cities (some of which are in Option 1). Overall, Option 2 would include the most routes, while Option 3 would include the fewest.

2.51 Steer have compared these options by considering the operating surpluses of services captured under each option (see Table 4.2 in Annex 4). The definition considered in Option 2 generally captures a greater proportion of the service codes that are estimated as being highly profitable. This indicates that a market segmentation which distinguishes these London-based services from all other services may better capture those services which tend to exhibit the highest operating surpluses. However, this is sensitive to assumptions about how passenger demand recovers from the pandemic. For instance, under a 'low growth' demand recovery scenario, Option 1 captures the same proportion of highly profitable services as Option 2[28].

2.52 Furthermore, all options capture some service codes that the analysis indicates would be marginally profitable or unprofitable. The presence of marginally profitable services in a candidate definition is relevant because this indicates there are some routes over which open access services could potentially operate but may not be able to bear an ICC, at least at the current level of this charge (though as discussed below, this will be affected by a range of factors, not all of which are captured in this analysis)[29].

2.53 In general, the evidence indicates that it is difficult to define segments in a practicable way which also clearly distinguishes passenger services based on relevant characteristics. This means any workable definition will need to balance the risks of including some services (within a market segment that is liable for an ICC) that may be less able to bear this charge, against the consequences of excluding some services that could bear it (which would mitigate the benefits of this policy in terms of allowing open access operators potentially greater access to the network).

2.54 Based on Steer's analysis, and particularly in light of the on-going uncertainty over how passenger services will recover from the pandemic (which affects the suitability of the options)[30], we intend to adopt **Option 1 (i.e. maintain the**

[28] Steer notes that this is likely to be because the impact of the pandemic disproportionately affects commuter routes, which are a more prominent feature of the candidate definition under Option 2.

[29] For unprofitable service codes, i.e. where operating surplus is negative, it is less likely that open access services would be considered over such routes, whether or not an ICC is applied.

[30] This applies to both the profile and extent of future demand recovery. For instance, if long distance travel (especially for the purposes of leisure) recovers more quickly than expected, relative to business or

existing open access market segmentation: interurban and other). We consider that the other options do not deliver a clear improvement on the existing segmentation, and that the existing definition continues to broadly identify those interurban services which are likely to be able to bear an ICC. Furthermore, as this is still a relatively new policy,[31] such an approach is more consistent with our overall approach to PR23.

2.55 We will consider views from industry, funders and other stakeholders in response to this consultation, in advance of finalising the market segmentation for CP7.

Consultation question

Question 2.1: Do you have any views on our proposal to maintain the existing market segmentation of open access services ('interurban' and 'other'), for the purposes of setting the open access ICC?

Level of ICC in CP7

2.56 Once we have finalised our market segmentation, we will also need to assess ability to bear in more detail for the relevant market segment, and, where we consider a segment can bear an ICC, determine the level of the ICC[32]. This will be affected among other things by the extent to which there are changes in other charges. As these changes will not be finalised until later in PR23, following Network Rail's recalibration exercise, we cannot include specific proposals for the level of ICCs in this consultation.

2.57 Nevertheless, we have started to consider our approach to setting the ICC in CP7. The estimated operating surplus for services in a given market segment is relevant to what level of charge this segment can bear. As in PR18, Steer's updated operating surplus analysis therefore provides a starting point for considering the level of this charge. Given that operating surplus across GB passenger services is forecast to be lower at the start of CP7 than when we previously assessed the market in PR18, we would expect this to point towards a lower ICC than the

commuting traffic, this could be more consistent with a market segment definition which captures the major intercity routes across the GB, rather than one which is limited to London-based services.

[31] This policy has been in place for three years, but two years have been significantly affected by the pandemic.

[32] Under our proposed segmentation (i.e. Option 1 set out above), we would only consider an ICC for services defined as interurban.

current rate (in real terms[33]), all other things being equal. This is likely to be the case under our proposed market segmentation, as well as the other options considered by Steer.

2.58 However, ability to bear will also be affected by a range of other considerations e.g. how operating surplus may vary *within* service codes (i.e. according to time-of-day or day-of-week); and the impact on operating surplus of competitive entry by an open access operator (as expected post-entry surpluses on a given route may be lower than those observed in the absence of competition on that route). We would also need to consider the time period in question, recognising that Steer's analysis is focused on a single year (year 1 of CP7).

2.59 We intend to provide more details on our approach to setting this ICC in our charges conclusions document in autumn 2022, having considered industry views and relevant considerations such as those discussed above. We will then set out proposals on the specific level of ICCs in our draft determination, expected in summer 2023[34].

Consultation question

Question 2.2: Do you have any views on the most appropriate approach to setting the open access ICC for the relevant market segment in CP7?

Treatment of existing operators

2.60 In PR18, we provided relief to existing open access operators[35] from any increase in charges prompted by the introduction of the ICC for CP6, but we did not set out our position for CP7 and beyond. The purpose of this approach in CP6 was to protect the existing level of competition provided by these services. We said this was supported by the fact that existing services were granted access based on our previous access policy, which had restricted operators' use of the network.

[33] In real terms means after we have adjusted the charges to account for the impact of general inflation, e.g. CPI (Consumer Price Index).

[34] We do not propose to amend the charging *unit* for the open access ICC, i.e. at a rate per train mile. We considered this in detail in PR18 and concluded that this was the most appropriate charging unit.

[35] We defined existing open access operators as operators of services who had access agreements approved before we set out our intention to review the charges levied on open access operators as part of PR18. These operators were Grand Central and Hull Trains.

2.61 Under our proposed market segmentation set out above (Option 1), none of the services operated by these existing operators would be captured by the interurban market segment, so they would not be liable to pay an ICC in CP7. However, we note that under Option 2 (which we are not proposing to adopt), a proportion of one existing service operated by Grand Central – the King's Cross to Sunderland service – would fall within the London interurban market segment[36].

2.62 As such, we are seeking views at this stage on whether or not this relief should be maintained for CP7, for the operators we defined as existing in PR18[37]. We recognise that these rights were granted based on a previous access policy. At the same time, we need to ensure that the charging scheme results in equivalent and non-discriminatory charges for all operators currently providing services in a similar market segment. We also need to consider our duty to have regard to Secretary of State funds, which is supported by allowing an ICC on services which can be shown to bear an ICC.

2.63 As per our current policy, if an existing operator proposes *significant variations* to existing services, and that service falls within our finalised definition of a market segment which is liable for an ICC, we propose that it would be subject to an ICC.

2.64 Under any approach, we would only permit an ICC to be levied on services where we determine that they fall within a market segment which we have identified as able to bear ICCs, and where there is sufficient evidence that they can bear an ICC at the level we determine is appropriate for that segment.

Consultation question

Question 2.3: Do you have any views on whether or not we should maintain relief from any increase in charges prompted by the open access ICC, for existing operators (as defined in PR18)?

[36] Specifically, the proportion of this service that runs from King's Cross to York. This is because York station recorded more than 5 million passenger entries / exits in 2018-19.

[37] If we considered that this relief should be removed, we would also need to consider whether this removal should be phased over the course of CP7 e.g. in line the with existing arrangements for new operators paying an ICC (as set out in Table 2.2 below).

Treatment of other operators

2.65 For clarity, we have set out below the implications of these proposals for Lumo (for which access rights were approved after we set out our intention to review the charges levied on open access operators as part of PR18), as well as for prospective open access operators.

2.66 The Lumo service between London and Edinburgh falls within the existing interurban definition, and is currently liable for this ICC. Under the proposed market segmentation (i.e. Option 1) and the other options set out above, this service would continue to pay an ICC in CP7, according to the existing phase-in profile set in PR18. However, this profile would reflect the level of the (fully phased-in) ICC that is set for CP7, through this review.

2.67 Any open access applications currently under consideration, or new open access applications considered between now and the start of CP7, would be subject to the ICC that is set for CP7 if the service falls within our finalised definition of a market segment which is liable for an ICC. These services would be charged the ICC set for CP7, even if this has not been determined at the point that approval for these services is granted. We intend to retain the same phase-in arrangements that are currently in place for new services, as set out in Table 2.2 below.

Table 2.2: Transitional arrangements for new services liable for an ICC in CP7

Year of operation of new service	Year 1	Year 2	Year 3	Year 4	Year 5
% of ICC set for CP7	0%	0%	25%	50%	100%

ICC for freight services

2.68 Freight operators currently pay an ICC for carrying certain commodities. In line with the relevant legislation on mark-ups, we only levy an ICC on market segments (or commodities) which can bear a mark-up, at a level which they can bear.

2.69 In PR18, we concluded that freight services carrying electricity supply industry (ESI) coal, iron ore, spent nuclear fuel and ESI biomass could bear these charges. We set the ICC for ESI coal, iron ore and spent nuclear fuel in CP6 to maintain the overall level of total charges for each commodity in line with CP5 exit levels. For ESI biomass, we set the ICC such that there was a less than 10% expected reduction in demand for transporting biomass by rail, as a result of the charge.

July 2021 consultation

2.70 In our July 2021 consultation, we proposed to retain an ICC for freight services in CP7, subject to updating the freight market-can-bear test as part of PR23. We said that we intended to start updating this test later in 2021, in parallel with our market-can-bear test for open access.

Summary of responses

2.71 Respondents generally agreed with our proposal to retain freight ICCs, subject to updating the market-can-bear analysis for PR23. Direct Rail Services (DRS) suggested removing or phasing out ICCs (and VUC) to place rail freight on a level playing field with road, and further incentivise modal shift to rail. DB Cargo, GB Railfreight and the Rail Freight Group (RFG) also noted the interaction with this work and modal shift objectives, with GB Railfreight commenting that freight cannot bear any more mark-ups while meeting government net-zero targets.

2.72 In conducting the market-can-bear analysis, several respondents said that we should take a proportionate approach by focusing primarily on areas which may have changed since the last review, and not expanding the existing set of market segments (with Drax and the Rail Wagon Association (RWA) noting that freight ICCs raise a small proportion of income for Network Rail). Respondents also asked that we set out any proposed changes to ICCs as early as possible in the PR23 process, to mitigate the impact of uncertainty over future charges.

2.73 Respondents also noted some specific issues to take into consideration through the analysis:

(a) RFG and the RWA said that our analysis should take account of cost changes that have occurred over the last few years, as well as factors that will change in CP7 (including any changes to the VUC). The RWA said that ability to bear in CP7 may differ from ability to bear during the periodic review process.

(b) GB Railfreight said that growth in aggregates and building materials volumes is affected by large national projects taking place over the next five to six years, and said we should not incorrectly assign an ICC to this segment.

(c) Drax raised some specific points that it said are relevant when assessing ability to bear for the biomass market segment.

Autumn 2021 market-can-bear analysis

2.74 We have updated the market-can-bear analysis underpinning freight ICCs. The primary objective of this analysis is to assess whether an increase in charges (over and above variable charges) would risk excluding a given market segment from the use of rail infrastructure. For freight, we have previously approached this question primarily by considering evidence on freight demand elasticities (how demand for rail freight services might fall or rise due to changes in access charges); and the extent to which rail competes with other transport modes.

2.75 In line with stakeholders' views, we have taken a proportionate approach to this review, focusing primarily on how these factors may have changed since PR18 or are likely to change between now and CP7. To inform this work:

(a) We commissioned CEPA to review the conclusions of the PR18 market-can-bear analysis, in light of recent developments in freight markets since our last review (particularly since the start of CP6). CEPA spoke to a range of industry stakeholders over autumn 2021, as well as taking account of specific points raised in response to our July 2021 consultation.

(b) We also commissioned MDS Transmodal (MDST) to update its estimates of certain commodity-specific demand elasticities with respect to track access charges[38]. These are derived from its GB Freight Model. We previously obtained such estimates as part of PR13.

2.76 CEPA and MDST's analysis and findings are set out in separate reports (Annexes 5 and 6 to this consultation). In the rest of this section, we have summarised their key findings and implications for how freight ICCs should be set in CP7.

2.77 In relation to stakeholders' comments on modal shift and net-zero, we recognise that the freight charging framework has the potential to affect modal shift, and, by extension, governments' stated net-zero targets. However, the application of the market-can-bear test means that ICCs are only levied on freight services which cannot easily or economically switch to road. As such, removing or phasing-out ICCs would not be expected to generate significant switching from road to rail (which is where the principal environmental benefits lie).

[38] MDST has updated its estimates for the following segments: Intermodal; Automotive; Metals; General Merchandise; Petro / Chemicals / Industrial Minerals; Domestic Waste; Construction materials. MDST did not estimate demand elasticities for the commodities which are currently liable for ICCs, as its modelling does not well-represent responses to access charge changes for these commodities.

2.78 Nevertheless, in interpreting the latest evidence on ability to bear, we have taken account of governments' wider objectives for freight and the environment. In previous periodic reviews, we have generally considered that a commodity can bear a charge which is associated with less than a 10% modelled reduction in rail freight demand. However, there is a degree of interpretation in what level of demand response is consistent with these legislative requirements. We consider that governments' objectives to drive rail freight growth, and maximise the environmental benefits of rail freight, is a reason to be particularly cautious in this regard, given that any demand response (if it is explained primarily by modal shift to road) would run counter to these objectives[39].

Market segmentation

2.79 We said in our July 2021 consultation that we expect to retain the commodity-based approach to market segmentation that we have previously used to set ICCs. This was broadly supported by stakeholders.

2.80 Within this framework, CEPA considered potential changes to the existing market segmentation in two main areas: the coal and intermodal markets.

Coal

2.81 We have previously identified two market segments for this commodity: ESI coal (i.e. coal for the electricity supply industry) and coal for other uses. This was on the basis that ESI coal was the predominant flow, and these flows exhibited a higher ability to bear as they were largely captive to rail. However, within the "Other coal" segment, there is also likely to be some variation in ability to bear; previous analysis indicated that coal transported to steelworks is more captive to rail than coal to other industrial plants such as cement works, where volumes transported are smaller and so competition from road haulage is stronger.

2.82 In light of the sharp decline in ESI coal volumes, CEPA noted that there may be a case for redrawing the boundary between the existing coal market segments, to include coal for steelworks in a segment with ESI coal (or a separate segment in itself). This could more accurately reflect differences in ability to bear between these different uses. However, we would likely need to do detailed further work to establish how the market for transporting this type of coal would be affected by an ICC. CEPA considered this may not be a proportionate exercise for this review,

[39] We note that DfT (in its response to our 2021 consultation) said it continues to support ICCs for freight, while encouraging us to take all available steps to reflect environmental considerations in our thinking.

given the relatively small volumes transported (compared to other freight commodities), and considering the additional billing requirements for Network Rail. As such, we do not propose to change the existing segmentation for coal in PR23.

Intermodal

2.83 Intermodal refers to containerised traffic using multiple modes of transportation. In PR18, we said that there may be variation in ability to bear between intermodal flows, particularly related to length of haul (with shorter journeys facing stronger competition from other modes than longer journeys). We considered whether there is a case for defining further market segments within the existing intermodal market segment, to reflect these differences in ability to bear. We found that further evidence would be required to sub-define this market segment in this way. We also identified several practical issues with applying an ICC only to certain intermodal flows. As such, we decided not to define sub-segments in the intermodal market segment based on geographic flows or distance travelled.

2.84 CEPA has reviewed this position. Many of the issues identified in PR18 (e.g. the use of portfolio pricing, the use of split trains) remain relevant today, and are likely to remain so in future. We also recognise there is some risk that levying a charge based on distance travelled could create perverse incentives to adjust the routes used to transport intermodal freight. However, CEPA noted that a charge could in principle be designed and phased-in so as to mitigate these issues.

2.85 Separately, as part of its update of commodity-specific demand elasticities, MDST has estimated specific demand elasticities for intermodal flows based on distance travelled[40]. This analysis indicates that the relationship between length of haul and sensitivity to access charges is not strongly negative, with MDST noting that there are reasons why longer flows may be more or less sensitive to a given increase in the cost of network access.

2.86 In light of this evidence, we do not consider that there is a clear case for further segmenting the intermodal market based on length of flow. We therefore propose to continue treating intermodal traffic as a single market segment.

Ability to bear for market segments

2.87 Consistent with our proportionate approach to this work, we then considered ability to bear for key market segments of interest. We have focused on: segments which

[40] See Table 11 and Figure 2 of MDST's report (Annex 6 to this consultation) for a summary of these results.

already pay ICCs (ESI coal; iron ore; ESI biomass; and spent nuclear fuel) and the largest segments by volume (intermodal; and aggregates). CEPA also considered ability to bear for the domestic waste segment, given that there has been a significant increase in volumes for this commodity since PR18.

2.88 The key findings for each market segment are summarised below.

ESI Coal

2.89 Overall volumes of ESI coal have continued to decline since the start of CP6, in line with government policy to phase out ESI coal use by 2024 (rather than due to a change in the competitive position of rail with respect to other transport modes). Network Rail has forecast that volumes will reach zero by the start of CP7. This prompts a question as to whether it is appropriate on proportionality grounds to continue to levy an ICC on this market segment. However, CEPA note that there has been an increase in ESI coal volumes in recent months, due to high prices for alternative energy sources. It is unclear whether this trend will persist.

2.90 On balance, if ESI coal volumes continue to decline in line with forecasts, we consider that any revenues raised from an ICC on this commodity would not justify the ongoing administrative burden associated with levying this charge. In such circumstances, we would be minded to remove it for CP7. However, we intend to take a final decision on this later in PR23 pending a further review of forecast volumes, particularly in light of the recent increase in ESI coal volumes moved.

Spent nuclear fuel

2.91 The safety-critical nature of nuclear waste transportation means that rail is the primary mode of transportation for this commodity, and demand for freight services carrying spent nuclear fuel is likely to remain very insensitive to changes in access charges. We therefore consider that this commodity will continue to exhibit a high ability to bear a mark-up in CP7, as in previous control periods.

2.92 CEPA noted that volumes for this commodity have also fallen since the start of CP6. However, unlike ESI coal, nuclear power is expected to remain a part of the UK's energy mix during CP7 and beyond. In the coming years, there will also be an ongoing need for transporting nuclear waste as some power stations move into the defueling stage of their life cycle, prior to full decommissioning.

Iron Ore

2.93 Volumes of iron ore have been broadly stable so far during CP6. The primary flow for this commodity is from the Port of Immingham to a plant at Scunthorpe owned by British Steel. Rail has faced little competition from other modes for transporting iron ore in the past, and CEPA did not identify any reasons to suggest this has materially changed, nor that the existing ICC has significantly affected rail freight demand for iron ore. As such, we consider the available evidence suggests that iron ore will continue to be able to bear a mark-up in CP7.

ESI biomass

2.94 In PR18, we levied an ICC on ESI biomass for the first time. We phased-in this ICC over the course of CP6, such that the full charge will be paid in year 5 of CP6.

2.95 CEPA has reviewed the impact of this ICC on the biomass market. Due to the phase-in profile, freight operators have only been paying an ICC for biomass since April 2021 (at 20% of the full ICC rate). As such, it is difficult to draw conclusions about the impact of this charge. However, biomass volumes have continued to grow moderately since the start of CP6 and CEPA considers there is confidence this will continue at least until 2027 (i.e. mid-CP7), when current government subsidies are due to expire. In its response to our July 2021 consultation, Drax said that rail freight will continue to be used to supply biomass beyond this date, though noted that volumes transported may reduce at that point.

2.96 Having reviewed other market developments, CEPA has not identified any evidence to suggest that the competitive position of rail (as a mode of transportation of biomass) has changed since PR18. Drax noted that we should also be mindful of rising wholesale energy prices. While we recognise this recent trend, we do not consider that this reduces ability to bear an ICC for biomass, as this is primarily driven by higher gas prices (as Drax notes) and so would be expected to improve the competitive position of biomass energy production, relative to other sources.

Other market segments

2.97 CEPA also considered whether ability to bear has materially changed for key market segments which are not currently levied ICCs (focusing on intermodal; aggregates; and domestic waste, for the reasons explained above). CEPA considered how the end user markets for these freight commodities have developed since the start of CP6, and how they are likely to change over the

course of CP7. In summary, CEPA did not identify evidence that indicated these segments would have a materially higher ability to bear charges.

2.98 These findings for the intermodal and aggregates markets are broadly supported by MDST's updated evidence on rail freight demand elasticities. To derive updated estimates, MDST modelled an illustrative increase in the VUC of 20%, over and above the VUC increases that would be applied under our existing phasing-in policy[41]. This was estimated to result in a reduction in tonne kms of 6.3% and 12.6% for intermodal and aggregates traffic respectively. The implied demand elasticities for these market segments – of 0.21 and 0.25 – are slightly higher than previous estimates that we considered in the context of previous reviews[42].

2.99 We have also considered some evidence submitted by a freight operator on the impact of a temporary increase in the price of its intermodal freight services. [✂], which implies a unitary elasticity with respect to the total price. We consider this is broadly consistent with MDST's estimated demand elasticity for intermodal tonnage with respect to track access charges, as access charges comprise a proportion of total costs (so the implied elasticity is lower)[43]. However, we note this demand response was also observed over a very short time horizon. In the long-run (which MDST's analysis focuses on), we might expect a larger response as customers adjust their transportation choices and negotiate new contracts.

2.100 MDST estimated a much lower demand elasticity of 0.001 for domestic waste. We have therefore considered whether this segment could bear an ICC for CP7. The modelling evidence indicates that imposing a mark-up on this commodity would not materially affect demand for rail freight. As such, this market segment could potentially contribute to the recovery of Network Rail's fixed costs, while the associated risk of inefficient network use from imposing a mark-up (i.e. by deterring flows that would otherwise be willing to pay for network access) would likely be low.

2.101 However, MDST also noted that this result is predicated on *existing* flows, whereas potential new flows in this market may be more sensitive to the imposition of an ICC. Likewise, CEPA noted that the future pipeline for domestic waste flows is uncertain, and cautioned against assuming high ability to bear for all domestic

[41] We discuss the VUC phasing-in policy for freight in more detail in Chapter 3.

[42] Table 9 of MDST's report.

[43] We have focused for this comparison on MDST's scenario 1: change in tonnes following a change in VUC from the reference case. The implied elasticity is 0.157 and MDST assumes VUC would make up 12.8% of the cost per km for intermodal.

waste traffic. We also note that, despite growth in volumes over recent years, the overall volume of domestic waste traffic on the rail network remains relatively low (particularly in relation to volumes transported by road), suggesting the potential market for rail freight may be significantly larger[44].

Our assessment and preferred approach

2.102 Having considered the implications of CEPA and MDST's analysis as summarised above, and also taking account of the wider context for this review, we are proposing in CP7 to:

(a) **retain the existing market segmentation based on commodities carried, without defining further sub-segments for any commodities.** On balance, and taking account of stakeholder views, we do not consider there is a clear case for changing the existing freight market segmentation for coal or intermodal.

(b) continue to allow Network Rail to levy an ICC on services carrying iron ore; spent nuclear fuel; and ESI biomass. We consider the available evidence indicates that these commodities can continue to bear a mark-up.

(c) remove the ICC on services carrying ESI coal, pending a further review of forecast volumes for this commodity later in PR23.

(d) not levy ICCs on any other freight services in CP7. However, given CEPA and MDST's findings, we intend to continue monitoring the development of the domestic waste market segment during CP7, to understand ability to bear for this segment in more detail. We note that we took a similar approach to the emerging ESI biomass market in PR13, having regard to both the modelling evidence and broader considerations at that time, before assessing this market and the ability to bear in more detail in PR18. We consider our proposed approach to the domestic waste market is consistent with this.

[44] We note that MDST also estimated a lower elasticity for petroleum/chemicals/industrial minerals than in previous work. However, the change compared to previous work was not as significant as for Domestic Waste, so we have not considered this commodity in more detail.

Consultation questions

Question 2.4: Do you have any views on our proposal to maintain the existing market segmentation of freight services?

Question 2.5: Do you have any views on our proposal to continue to allow Network Rail to levy ICCs on freight services carrying iron ore, spent nuclear fuel and ESI biomass? Do you have any views on our proposal to remove the ICC on services carrying ESI coal, pending a further review later in PR23?

Level of ICCs in CP7

2.103 For those commodities that will pay ICCs in CP7, we will also need to determine the level at which these charges should be set. As with the open access ICC, we cannot include specific proposals for the level of ICCs in this consultation. However, we have set out below some considerations which are relevant to our approach to setting ICCs.

2.104 In PR18, we set ICCs for ESI coal, iron ore and spent nuclear fuel to maintain the overall level of total charges in line with the CP5 exit levels (on average). This was on the basis that the available evidence suggested that sensitivity to rail charges had not materially changed for these commodities. In practice, because the VUC is increasing for freight operators over the last three years of CP6, it means that ICCs for these three commodities have been reduced, in order to maintain the same overall level of cost recovery.

2.105 If we followed the same approach for PR23, it is likely that ICCs would be further reduced in CP7 (given our proposals to retain the existing VUC phasing-in policy, under which VUC rates would increase during CP7 to reach full cost-reflectivity). This means the freight sector would make a smaller contribution to the long-run costs that it causes on the network, compared with CP6. This contribution is already small; total revenue from freight ICCs in year 2 of CP6 was around £0.6m, which is significantly lower than the total (avoidable) fixed costs that are allocated to the freight sector under Network Rail's fixed allocation methodology.

2.106 The reason for the scale of the difference between freight ICCs and its total fixed cost allocation is partly because we have only identified a limited set of freight market segments as being able to bear mark-ups. Furthermore, volumes for one of

those commodities (ESI coal) have declined significantly over time, which has led to a fall in ICC revenues from this traffic.

2.107 It is possible that some of the other commodities we have identified as being able to bear ICCs could sustain higher charges than current levels, without seeing a significant fall in demand for rail freight[45]. This could help to improve the extent to which charges reflect the costs that users impose on the network, which was one of the purposes of introducing freight ICCs. However, this approach would likely require further analysis to understand the maximum ability to bear for these commodities.

2.108 We welcome views from industry about the most appropriate approach to setting freight ICCs in CP7 so as to balance the need to promote efficiency and economy and have regard to the funds available to the Secretary of State, while continuing to protect the interests of freight operators and their customers (and reflecting the relevant regulations governing the application of mark-ups). We intend to provide more details on our approach in our charges conclusions document in autumn 2022, having considered industry's views. We will then set out proposals on the specific level of ICCs in our draft determination expected in summer 2023.

2.109 Under any approach, we consider that it would be beneficial to publish the final outputs of Network Rail's fixed cost allocation process, including for freight (see paragraph 2.26 above). We consider this can help to improve transparency over Network Rail's fixed costs – making it clearer who pays for what and what they receive in return in terms of network use.

Consultation question

Question 2.6: Do you have any views on the most appropriate approach to setting freight ICCs for relevant market segments in CP7?

[45] i.e. spent nuclear fuel and iron ore. For ESI biomass, we commissioned specific analysis in PR18 to set the ICC, such that there was a less than 10% expected reduction in demand for transporting biomass by rail.

3. Variable charges

Summary

We are minded to largely retain the existing approach to setting the variable usage charge (VUC). This includes retaining the existing phasing-in policy for VUC rates paid by freight and charter operators (as set in PR18), subject to a further review later in PR23. We are also not minded to make any changes to the cost categories or the underlying track damage formulae used to calculate VUC rates. However, we are proposing a small change to allow VUC rates to be re-opened in CP7, to account for changes in heavy axle weight (HAW) network capability.

Furthermore, we have been working with Network Rail to improve the information available to stakeholders about VUC rates and the underlying evidence base.

For the traction electricity (EC4T) charge, following feedback from Network Rail and funders, we will not take forward the idea of a ring-fenced fund to incentivise take-up of on-train metering as part of this review. We consider that take-up of metering could alternatively be encouraged by no longer offering bespoke modelled consumption rates for new train services. We are also minded to simplify this charge by removing the loss incentive mechanism and the partial fleet metering charging approach.

We will keep the electrification asset usage charge (EAUC) unchanged, beyond recalibration.

Introduction

3.1 This chapter discusses our approach to variable charges, which recover costs directly incurred by Network Rail when train services operate over its network.

3.2 In CP6, there are three variable charges paid by operators:

(a) the **variable usage charge (VUC)**;

(b) the **traction electricity (EC4T) charge**; and

(c) the **electrification asset usage charge (EAUC)**.

3.3 In our July 2021 consultation, we identified some potential changes to the VUC and EC4T to consider further as part of PR23. We did not propose any changes to how the EAUC is set.

Variable Usage Charge

3.4 The VUC recovers the operating, maintenance and renewal costs that Network Rail incurs as a result of small (or marginal) changes in traffic levels, assuming network capacity remains fixed[46]. It does not reflect the costs of providing or changing the capability or capacity of the network.

3.5 In our July 2021 consultation, we made four key proposals in relation to the VUC:

(a) retain the existing phasing-in of VUC increases for freight and charter operators;

(b) review the cost categories eligible to be recovered through the VUC;

(c) consider further whether to apply the VUC to Network Rail's engineering trains; and

(d) work with Network Rail to improve the available information on VUC rates.

3.6 We also noted that the Vehicle / Track System Interface Committee (V/T SIC) is considering whether there is a case for reviewing part of the evidence base which underpins the calculation of VUC rates[47]. We said we would provide an update on this in our next consultation.

3.7 We received a significant number of responses from stakeholders, particularly from freight operators and customers. In the rest of this section, we discuss each of the above issues in light of consultation responses and further work undertaken since then, before setting out our preferred approach for PR23.

3.8 Respondents also raised some additional issues in relation to the VUC, besides the areas identified in our July 2021 consultation. One of these issues, relating to the interaction between VUC and heavy axle weight capability, is covered below. The other issues are summarised in Annex 2.

[46] In practice, rail infrastructure operating costs are widely understood not to vary materially with traffic. From control period 4 (CP4), the charge has been set to recover variable maintenance and renewal costs only.

[47] This is an industry wide working group responsible for the Vehicle Track Interaction Strategic Model (VTISM), an industry model that is used in the VUC calculation. It is led by RSSB.

Phasing-in of VUC increase

July 2021 consultation

3.9 In our July 2021 consultation, we proposed to retain the existing VUC phasing-in policy as set in PR18, such that the VUC for freight and charter operators continues to increase (in real terms) at a uniform rate to reach full cost reflectivity in the final year of CP7. We said the precise rate of growth will be determined following the VUC recalibration process, due to take place later in PR23.

Summary of responses

3.10 Stakeholders' views on this proposal were mixed. Both Network Rail and DfT supported our phasing-in proposal for freight and charter operators. DfT said they are particularly conscious of the need for stability for these operators, and supported the continuation of the phasing approach set out in PR18. TfL and MTR also supported the principle that operators should pay in full the direct costs their operations impose on the network.

3.11 However, most freight industry respondents did not support the proposal. Respondents said that fully unwinding VUC caps would be inconsistent with governments' environmental and rail freight growth objectives as it could deter modal shift from road to rail. RDG, RWA and Freightliner said we should consider scope for amending our existing policy – for instance by "pausing" further phasing-in during CP7, thereby holding VUC rates constant in real terms at CP6 exit levels, at least until implementation of the Williams-Shapps Plan is better understood.

Our assessment and preferred approach

3.12 We recognise the growing importance of delivering a more environmentally sustainable rail network, to support governments' roadmaps to net zero and other environmental and rail freight growth objectives. However, as we explained in our July 2021 consultation, the existing legal framework establishes that charges should be set to reflect the costs to the infrastructure manager (e.g. Network Rail) of providing network access, rather than wider costs to the environment[48].

3.13 Our existing VUC phasing-in policy, set in PR18, took account of the full range of our relevant Section 4 duties and is intended to support rail sector stability (consistent with these duties), rather than to reflect environmental

[48] Schedule 3 of the 2016 Regulations, paragraphs 1(4,5) and 2(1).

considerations[49]. We also consider that any caps must be time-limited, to comply with the existing legal framework which requires that costs directly incurred must eventually be recovered in full. Respondents have not presented any evidence which we consider challenges this position.

3.14 Nevertheless, as part of our review, we have reviewed whether market conditions for freight have significantly changed since we set this policy in PR18. To inform our view, we commissioned MDST[50] to update its estimates of the impact on freight traffic volumes of an increase in track access charges, based on the latest available information on the costs of transporting goods by different transport modes, and on more recent forecasts of freight traffic.

3.15 To do this, MDST modelled a reference case representing freight volumes in the final year of CP7, assuming end-of-CP6 track access charges remain unchanged in CP7 in real terms; and then tested the impact of a change in VUC from this reference case, whereby VUC rates increased to reach fully cost-reflective levels by the end of CP7. MDST estimated that the impact on rail freight traffic volumes would be to reduce volumes (in tonne kms) by less than 2.5% for all but one of the commodities modelled, and around 4% for construction materials. This impact – and the implied elasticities – is broadly in line with the expected impacts we considered when we developed the existing phasing-in policy as part of PR18.

3.16 As such, at this stage, we are minded to maintain our proposal to retain the existing VUC phasing-in policy. Considered in the round, alongside our other freight charging proposals, we consider this is consistent with governments' aspirations in respect of the environment and rail freight growth as set out in the Williams-Shapps Plan, and supports longer-term stability and predictability in charges for freight operators. This policy also continues to be supported by DfT.

3.17 However, as stated in our July 2021 consultation, we will keep this policy under review until after the PR23 recalibration stage, which concludes in 2023. If the recalibration exercise results in significant changes in cost-reflective VUC rates at the end of CP7, we would review our position at that stage. We will also review and determine the precise rate of growth in VUC rates to be applied over CP7. Factors that might influence this include Network Rail's underlying maintenance and renewals costs in CP7 as well as the overall level of charges faced by operators in the round.

[49] This is set out in our PR18 Final Determination supplementary document on VUC decisions.

[50] See Annex 6 for MDST's full report.

Cost categories eligible to be recovered through the VUC

July 2021 consultation

3.18 In our July 2021 consultation, we said that we would review the findings of some work that Network Rail undertook in PR18[51], to ensure that all costs included in the VUC comply with the definitions in the 2016 Regulations and in the Commission Implementing Regulation EU 2015/909[52]. We invited stakeholders' suggestions on any additional evidence that we should consider as part of this review.

Summary of responses

3.19 DB Cargo and Trenitalia c2c (c2c) supported a thorough review of the cost categories included in the VUC. Several respondents said they were in favour of a 'light-touch' review, noting that the relevant legal framework may be changed as part of wider rail industry reforms. We did not receive any specific additional evidence from stakeholders to consider, as part of any review of eligible costs.

3.20 Network Rail stated it had reviewed the assessment it undertook in PR18 and considered its findings remain valid for PR23. Network Rail also noted that the approach taken in PR18 involved excluding any cost category which includes a mix of direct and indirect costs and so a new review may identify additional direct costs that should be included within the calculation of VUC rates. This would result in an increase in VUCs, all other things being equal.

Our assessment and preferred approach

3.21 We have considered the responses received and have undertaken a review of Network Rail's findings. Based on this, we are content that all the cost categories that are currently included in the calculation of VUC comply with the definitions in the 2016 Regulations and in the Commission Implementing Regulation EU 2015/909. We also note that Network Rail's original assessment in PR18, in light of the implementing regulation (EU 2015/909), resulted in a 9% reduction in the

[51] This is set out in Appendix 2 of Network Rail's conclusions on variable charges and station charges in CP6

[52] The Commission Implementing Regulation (EU 2015/909) is a retained EU regulation which sets out further detail on what qualifies as directly incurred costs.

average level of the uncapped VUC. As such, we do not intend to make any further changes to the cost categories included within the VUC calculation.

Reviewing the methodology to calculate VUC rates

July 2021 consultation

3.22 In our July 2021 consultation, we noted that the Vehicle / Track System Interface Committee (V/T SIC) was considering whether there is a case for reviewing the evidence underlying the calculation of VUC rates; specifically, some aspects of the Vehicle Track Interaction Strategic Model (VTISM). This model is used as part of the VUC methodology in two ways: to determine the overall proportion of track-related costs to recover through the VUC; and to derive a vertical track damage formula which informs the specific allocation of variable usage costs to individual vehicles[53], based on their vehicle characteristics.

3.23 We said that we expect to say more about what, if any, new evidence is likely to be available, and whether it should be adopted for charging purposes in CP7, in this consultation.

Summary of responses

3.24 Stakeholders who commented on this issue (DfT, Network Rail, GB Railfreight and DRS) generally did not support the suggestion that VUCs should be recalibrated to reflect any forthcoming revisions to the VTISM in CP7. This was largely on the grounds that this work may not be proportionate, and there might not be enough time to consult and verify changes prior to CP7 commencing.

3.25 Network Rail expressed significant concerns with the appropriateness, proportionality and practicality of reflecting such revisions in the PR23 recalibration process. It noted that the full consequences of the last amendment in PR13 have still not filtered through to VUC rates as these rates are only projected to be cost-reflective in the final year of CP7. It also said that reflecting such revisions in VUCs is a time-consuming exercise which requires extensive and technically complex stakeholder consultation. Network Rail suggested that such a revision would be the most significant amendment in a decade to the calculations underlying the

[53] Vertical track damage is estimated to account for 70% of the total track-related wear and tear costs determined by VTISM. The remaining 30% of total track-related wear and tear costs are estimated to be attributable to horizontal track damage (primarily due to rail wear and rolling contact fatigue). These costs are allocated to individual vehicles in line with the track damage suggested by a standalone engineering model, which is owned by Network Rail. This model is not within the scope of V/T SIC's review, and the assumptions in this model would not be affected by the potential changes to VTISM being considered.

VUC, which would not be consistent with ORR's PR23 stated aim of avoiding fundamental changes to the charging framework.

3.26 DfT stated that it is supportive of the efforts to improve the VTISM as this could lead to more cost-reflective variable usage charges, but noted that such changes can be time consuming and reflect considerable efforts. DfT said that new evidence should only be adopted for charging purposes in CP7 if it can be demonstrated that potential changes will have significant benefits. It asked us to clearly set out the costs and benefits of potential changes, as part of this consultation.

3.27 GB Railfreight and DRS expressed concern that there is not enough time to consider fundamental changes to the VTISM in advance of the start of CP7.

Our assessment and preferred approach

3.28 Since we published our July 2021 consultation, Serco (on behalf of RSSB) has been conducting a review of some aspects of the existing VTISM. We have been engaging with Serco's review as it has been progressing over late 2021 and early 2022. This work has identified four development areas where Serco considers there is potential scope for technical refinements to the VTISM methodology. These refinements have the potential to affect both: (i) the *overall* proportion of Network Rail's track-related costs recovered through the VUC; and (ii) the formulae which estimates the *relative* vertical track damage impacts caused by different vehicle types.

3.29 Once Serco has concluded this stage of the work, and finalised a set of recommended refinements to VTISM, these would then need to be implemented within the model. We understand this could take a further 6 months, which implies that an updated version of VTISM would likely not be available before autumn 2022 (with precise timings dependent on when the current stage concludes).

3.30 Furthermore, once an updated version of VTISM has been developed and made available, an additional piece of work would need to be carried out to estimate a new vertical track damage formula (based on the updated VTISM). We understand from Network Rail that this would likely take a further three months[54]. This

[54] Among other things, Serco's work is considering changes to the track damage mechanisms embedded within VTISM. This could lead to significant changes in the relative wear and tear of different vehicles, implying a significantly different track damage formula used to calculate individual VUC rates.

suggests the full implications of Serco's work for the VUC methodology would not be understood until early 2023.

3.31 We are supportive of Serco's work and any subsequent work aimed at refining the VTISM, and we welcome initiatives by industry that can help to improve our understanding of the impact of network use on network condition. Serco's work serves a range of useful purposes, including – but not limited to – track access charges as it has the potential to improve the cost-reflectivity of the VUC. This would further strengthen the signals this charge sends in respect of reducing network costs and efficient network use.

3.32 We will continue to engage with RSSB, Network Rail and the rest of industry on this work as it progresses, also taking account of industry views in response to this consultation. If a new version of VTISM is made available before we conclude on changes to the charging framework in autumn 2022, we would expect to provide a further update at that point about how this could be used by Network Rail in the context of the VUC, e.g. whether the new version of VTISM should be used to inform track renewal and maintenance forecasts for CP7 in Network Rail's strategic business plan, and to determine the overall proportion of these track-related costs to recover through the VUC.

3.33 However, at this stage, we do not consider that it would be proportionate or feasible to revise the vertical track damage formula that is used to allocate variable usage costs to vehicles, based on their characteristics, to set individual VUC rates.

(a) Based on the timescales set out above, this stage of the work would not be completed until after the launch of Network Rail's recalibration process, which is planned to begin shortly after our policy conclusions on the PR23 charges review in autumn 2022. This means that Network Rail would be consulting on an incomplete set of changes to the VUC methodology (or else it would need to delay an important aspect of this exercise).

(b) Moreover, we would then need to review this work and consult industry on these impacts, before deciding whether Network Rail should implement a new track damage formula as part of the recalibration of VUC rates for CP7. This would be very late in the PR23 process to consider major changes to the VUC methodology.

3.34 While we recognise the longer-term benefits of setting VUC rates as accurately as possible, we consider that using this evidence to estimate a revised vertical track damage formula would create significant uncertainty for the rest of the PR23

charges review. It would also create a risk that new rates would not be finalised and audited in time for our final determination (while ensuring sufficient time for adequate industry consultation).

3.35 We recognise this decision carries implications for the VUC rates paid by operators in CP7. However, in respect of freight operators, we note that VUC rates are already capped below fully cost-reflective rates, and we have set out our intention to gradually unwind these caps over the course of CP7 (as discussed earlier in this chapter). The existing phasing-in policy would serve to mitigate the impact of any changes in (uncapped) VUC rates that result from a change to the VUC methodology.

3.36 We also recognise that using a new version of VTISM to determine the overall proportion of track-related costs that are identified as variable (and thus recovered through the VUC) could also affect public funding for the railway[55]. As explained above, we expect to say more about this in our conclusions document in autumn 2022, once we have a clearer idea about the timings of Serco's work. Nevertheless, we would expect the net impact of this decision on overall public funding requirements to be moderate[56].

3.37 Based on the approach set above, we would commence early work with Network Rail and industry during CP7 to develop a new vertical track damage formula and understand the implications for VUC rates in the next control period. This would ensure that we take account of new evidence on network usage and condition in a way which allows industry to be fully engaged, while providing a continuing period of stability for operators during CP7.

Consultation question

Question 3.1: Do you have any views on how we should take account of new evidence in relation to VTISM, for the purposes of setting the VUC?

[55] This is because most of Network Rail's fixed costs are paid for by funders, either through the network grant or via the FTAC paid by operators on concession-style agreements with funders.

[56] This is because the majority of VUC income is paid by operators who are commissioned by funders, so any changes to Network Rail's net revenue requirement resulting from a change in total VUC-related costs would to some extent be offset by changes in VUC paid by these operators.

Applying the VUC to Network Rail's engineering vehicles

July 2021 consultation

3.38 Network Rail uses engineering trains to maintain and renew the network. In PR18, GB Railfreight suggested that these trains are some of the least track-friendly on the network and argued that Network Rail should pay for the wear-and-tear costs caused by these vehicles. We made no changes as part of PR18, but said that we would revisit this issue again in the next periodic review.

3.39 We considered this issue in our July 2021 consultation. Our initial view was that the benefits of applying the VUC to engineering trains would be limited. However, we invited stakeholders' views on the relative merits of this proposal, as well as views on other ways in which the issue of the track-friendliness of Network Rail's engineering vehicles could be addressed as part of PR23.

Summary of responses

3.40 Respondents including MTR, RFG and Northern Rail stated that applying VUC to Network Rail's engineering vehicles would improve transparency over the wear-and-tear they cause and would provide industry and Network Rail with better cost information for decision-making, including incentivising Network Rail to use track-friendly vehicles.

3.41 In its response, Network Rail challenged this view, arguing that it already has a strong incentive to make efficient choices over the track-friendliness of its engineering vehicles, since it currently bears the cost of the wear-and-tear that these vehicles cause. Regarding the track friendliness of its vehicles, Network Rail referred to a PR18 study by Arup[57] which concluded that Network Rail's engineering trains were not excessively damaging to the track compared with other freight trains.

3.42 Network Rail also estimated that the net effect of calculating VUC charges for engineering trains might be a small *increase* in operators' VUC rates, on the basis that a proportion of the wear-and-tear caused by engineering trains and currently borne by Network Rail, is a result of carrying out maintenance and renewals work to repair the wear-and-tear caused by operators' traffic. Therefore, once the cost of engineering train wear-and-tear is more transparently identified, there may be a case for recovering a proportion of that wear-and-tear from operators. Network

[57] Arup Review of Network Rail's CP6 Variable Usage Charge Assessment, available here.

Rail noted that preliminary calculations that it produced in PR18 to support Arup's review indicated that this could increase operator VUC rates by just under 1%.

3.43 Both those who supported and opposed the application of VUC on Network Rail vehicles noted that the impact of the reform would likely be immaterial or that costs would outweigh the benefits. Consequently, many respondents suggested that this would not be a proportionate change to make in PR23.

Our assessment and preferred approach

3.44 In light of consultation responses, we are minded to not pursue the option of applying VUC to Network Rail's engineering trains. We remain of the view that, on balance, it is not clear that any potential benefits from this change would outweigh the implementation costs.

The VUC calculator and industry's understanding of the VUC

July 2021 consultation

3.45 In our July 2021 consultation, we invited views on potential ways to improve Network Rail's VUC calculator, a tool which is used to estimate VUC charges, to make it more informative for operators making rolling stock decisions.

3.46 We also invited views from stakeholders on how we could improve industry's understanding of the principles and evidence underpinning the VUC.

Summary of responses

3.47 All respondents who commented on this issue agreed that the VUC calculator could be improved. In particular, DB Cargo and First Group said they would welcome an updated calculator that allows a user to model a number of scenarios using a range of inputs, rather than starting afresh each time. This could save considerable time and effort when estimating VUC rates for a new vehicle, and how these are affected by vehicle characteristics. RDG supported making improvements to the calculator, but said that any changes should have a positive impact on behaviours and improve industry's decision making.

3.48 Some respondents also suggested that publishing clearer information on the VUC methodology would improve industry's understanding of this charge. c2c suggested a report explaining the full process of calculating the VUC; Aggregate Industries mentioned a step-by-step guide with calculations, costs and source

data; and LSER suggested that a “blank” VUC calculation should be provided to show how different factors are weighted.

3.49 Network Rail noted there are various sources of information currently available to help stakeholders understand how rates are calculated. In respect of the VUC calculator, they suggested the most effective approach to improving this tool would be for ORR to agree with stakeholders a precise specification for the desired user interface, and then Network Rail would work to create this.

Our assessment and preferred approach

3.50 In light of these responses, we organised a workshop in February 2022 which was attended by industry representatives (including passenger, freight and open access) to discuss potential improvements to the VUC calculator and associated guidance. Network Rail presented a set of new prototype 'ready reckoner' calculators (separately for passenger and freight). These calculators allow users to model multiple scenarios more easily, to compare the impact of changes in vehicle characteristics on this charge, as well as providing more information over some of the underlying calculations and weighting of wear-and-tear factors.

3.51 Following this workshop, Network Rail has implemented some further changes to these ready reckoner calculators, and has made them available on its website as an additional tool (alongside the official CP6 VUC calculator, which will continue to be used for calculating and submitting new rates for approval). Network Rail is also working to develop some additional guidance on the calculation of VUC rates, which will further improve transparency for this charge. We expect this will be made available to industry as part of Network Rail’s PR23 recalibration consultation later in 2022.

Changing the VUC guidance to reflect route availability for heavy axle weight (HAW)

3.52 The existing CP6 VUC guidance stipulates that, during a control period, a new VUC rate should be calculated only in one of the following three situations: (i) where a vehicle type due to begin operating on the network is not on the Track Usage Price List; (ii) where a vehicle type already operating on the network is not on that Track Usage Price List; or (iii) where a vehicle type has been modified following the publication of the Track Usage Price List and as a result the vehicle characteristics which determine the VUC rate have changed.

3.53 In their responses to our July 2021 consultation, DB Cargo and Freightliner suggested that this should be reviewed to include a scenario where Network Rail removes heavy axle weight (HAW) capability during a control period. We consider this would be an appropriate change to make, for the reasons explained below.

Background

3.54 Network capability is determined by the strength and condition of the underlying structures. Sections of track have a Route Availability ("RA") rating which reflects this[58]. The higher the RA figure of a route, the stronger the infrastructure, and thus the heavier axle weights that can use that route. Heavy Axle Weight refers to those trains which can only run on RA9 or RA10 track[59].

3.55 The weakest load-bearing structure on a line of route (for example, a bridge or embankment) determines the maximum RA of that route. Items of rolling stock also have an RA figure associated with them based on their axle weight. Any train with the same or lower RA as the route may travel on that route. If the route RA figure is to be exceeded, each traffic flow must be authorised by Network Rail, by issuing an exceptional load form (form RT3973HAW) identifying the special conditions under which those access rights are given.

Our assessment and preferred approach

3.56 The calculation of the VUC rates for vehicles carrying HAW traffic takes into account that those wagons are heavier and therefore cause higher damage to the network. Consequently, those VUC rates are higher than they would otherwise have been if those wagons were expected to be loaded at below HAW capability.

3.57 In performing its functions as infrastructure manager, Network Rail can decide to withdraw HAW Access Rights especially when it considers it is not safe for the network to continue to accommodate such traffic flows. However, given our existing policy that the Track Usage Price List should not be re-opened during the control period, a withdrawal of HAW capability means that the traffic flows that are downgraded to less than HAW axle loadings continue to pay the VUC rates that

[58] Route Availability (RA) is a measure of the axle load that the network infrastructure can safely bear.

[59] These are the heaviest trains on the network, with each wagon typically carrying up to 101.6 tonnes.

are higher than they would otherwise be (i.e. if the VUC rates were calculated on the basis of less than HAW axle loadings).

3.58 We agree that, in such circumstances, it would not be reasonable for operators to bear the risk of Network Rail making unanticipated changes in HAW access rights within a control period. We are therefore minded to allow the review of the VUC guidance for CP7 to ensure a new VUC rate can be calculated for existing vehicle types that are downgraded to lower than HAW RAs because Network Rail has decided to remove HAW access rights during CP7. We consider that the administrative costs this could impose (e.g. in terms of approving new VUC rates and updating the price list) would be proportionate in relation to the benefits of this change. This proposal should also incentivise Network Rail to better plan its RAs before our PR23 final determination.

3.59 For the avoidance of doubt, this proposal is only intended to protect operators from the risk of unanticipated withdrawals of HAW availability. It would not be possible to recalculate a VUC rate during CP7 if an operator decides, by their own initiative, not to use their HAW access rights as agreed between Network Rail and operators at the beginning of CP7; or if Network Rail made it clear in advance of determining price lists for CP7 that a specific route will have HAW capability withdrawn on a specific date during CP7.

Consultation question

Question 3.2: Do you have any views on our proposal to review the VUC guidance for CP7 to allow a new VUC rate to be calculated for existing vehicle types that are downgraded to lower than HAW RAs, because Network Rail decides to remove HAW access rights?

Traction Electricity Charge

3.60 The traction electricity (also known as electric current for traction or EC4T) charge recovers the cost of electricity supplied by Network Rail to power trains. The charge is calculated using one of the following three approaches[60]:

[60] At the end of each financial year, Network Rail and all operators using electric traction also participate in a cost reconciliation exercise (also referred to as the cost 'wash-up') which compares the tariff per unit of consumption charged by Network Rail with the actual tariff per unit paid by Network Rail to electricity suppliers. This results in additional payments between Network Rail and operators.

(a) metered consumption (based on readings taken from meters on trains);

(b) modelled consumption (based on estimated consumption, subject to an end of year volume reconciliation exercise); or

(c) partial fleet metering, or PFM (which extrapolates metered consumption from metered trains to estimate consumption for un-metered trains).

3.61 In our July 2021 consultation, we proposed to prioritise the following three areas for reform in PR23:

(a) incentivising greater take-up of on-train metering;

(b) removal of the PFM charging approach; and

(c) removal of the loss incentive mechanism.

3.62 In the rest of this section, we discuss each of these issues in light of responses to our July 2021 consultation, and further work undertaken since then, before setting out our preferred approach for PR23.

3.63 Respondents also raised some additional points in relation to EC4T, besides the areas identified in our July 2021 consultation. We have summarised these points, and our view, in Annex 2.

Incentivising greater take-up of on-train metering

July 2021 consultation

3.64 At present, we estimate that around one-third of EC4T consumption is not metered, with the figure being higher for passenger than for freight trains[61]. In our July 2021 consultation, we identified several benefits associated with on-train metering (OTM) – in particular, the stronger incentives that it provides operators to lower their overall energy consumption, by establishing a clearer link between their activities and the charges paid. We said we would explore with Network Rail and funders the relative merits of establishing a ring-fenced fund to support the installation of on-board meters for older rolling stock, in order to increase the proportion of metered traction on the network.

[61] We estimate that around 35% and 24% of passenger and freight consumption is unmetered respectively.

3.65 We invited stakeholders' views on the relative merits of such a fund and their suggestions on how else we could incentivise greater take-up of OTM.

Summary of responses

3.66 DfT and Transport Scotland supported the aim of encouraging greater OTM in principle. However, DfT said it is unclear whether a ring-fenced fund would be the most effective mechanism to achieve this, while Transport Scotland did not consider that retrofitting meters to older rolling stock would be cost effective.

3.67 Network Rail noted there may be merit in establishing a fund, but disagreed with ORR's proposed approach to financing the fund (i.e. diverting some of Network Rail's available funding from other uses). Network Rail proposed that any ring-fenced fund should recognise the need for incremental funding, either as a separately identified enhancement within Network Rail's funding, or as a direct arrangement between funders and train operators. Alternatively, Network Rail suggested that ORR could consider uplifting modelled consumption rates by a certain percentage, with funds raised through the uplift set aside to incentivise a move to on-train metering.

3.68 There was a mixed response to this proposal from the rest of industry. Some respondents queried whether this would be the most effective use of funds, compared with other initiatives. For example, DRS suggested that we should consider a fund to support take-up of electric traction, ahead of the fund for take-up of metering. In the same vein, GB Railfreight proposed additional financial incentives for operators to switch to electric and bi-mode traction. MTR suggested the establishment of a fund for infill electrification schemes and to support initiatives such as battery train operation. DB Cargo stated that funding should help with both the installation and on-going costs of metering equipment.

3.69 Freightliner and RFG noted that introducing a fund in CP7 may deter investment in metering now. To avoid this, Freightliner suggested that any costs incurred to fit meters in CP6 should be subsequently recovered if a fund is established in CP7.

3.70 Respondents suggested other possible ways to encourage greater OTM take-up:

(a) They highlighted the need for us to give further consideration to the existing barriers preventing take-up of OTM, which would not be addressed by the proposed fund. For example, GB Railfreight raised issues concerning the adequacy of software systems, data collection services and the accuracy of the information produced by on-train meters. Arriva supported this view and

stated that any funding regime should include a focus on enabling system compatibility and simplifying data flow interfaces.

(b) GUT and DRS suggested a discount for metered services which would provide them with a financial return for on-train metering investment.

(c) First Group suggested that for passenger operators on concession-style agreements, meter fitment should be a part of the contract requirement with their rail authority.

(d) Network Rail observed that a small amount of modelled consumption is currently being used on new rolling stock (which comes with meters fitted as standard). It understands that this is mainly due to 'teething' issues with commissioning trains and setting up the metering interface. Network Rail suggested modelled consumption rates should no longer be made available for new rolling stock (although a default modelled, as well as a generic consumption rate, would still be available), in order to incentivise operators with these vehicles to move to on-train metering as soon as possible.

Our assessment and preferred approach

OTM ring-fenced fund

3.71 Having considered stakeholder responses, and engaged further with Network Rail and DfT over autumn and winter 2021[62], we consider the idea of a ring-fenced fund to support the installation of meters would best be taken forward by funders. This reflects that the focus of this review is how the specific charging rules and methodologies for EC4T should be set. However, we will continue to engage with funders on the implementation of this or similar funds, if they are considered through PR23 or as separate initiatives.

Inaccuracies in the data recorded by on-train meters

3.72 We have considered stakeholders views on the possible technical issues that may affect the accuracy of the data recorded by on-train meters. We recognise that technical issues may occasionally arise with on-train meters as they do with any other equipment. However, as we stated in our July 2021 consultation, we are aware that meters go through extensive quality assurance processes, and we have not yet seen clear evidence that they are inaccurate to the level that they

[62] As noted above, Transport Scotland did not consider that retrofitting meters to older rolling stock would be cost effective.

cannot be used. Nevertheless, we will continue to support the industry's efforts to identify and implement any potential improvements to OTM technology.

Granting a discount to metered trains

3.73 GUT and DRS suggested that we should allow a discount for metered trains as a way of encouraging take-up of OTM. We consider that this would not be possible under the current legislation[63], which stipulates that the infrastructure manager (e.g., Network Rail) can only grant time-limited discounts in specific cases to encourage the development of new rail services, or the use of considerably underutilised lines. We do not believe that metered trains would qualify for a discount under this legislation.

Including fitment of meters as a condition for future concession agreements

3.74 The terms of concession agreements with passenger operators are primarily a matter for rail authorities, rather than ORR. Notwithstanding this, we note that Transport Scotland has said OTM would be a requirement for new rolling stock used for passenger services that it commissions or operates. We also note the terms of DfT's existing concession agreements with passenger operators require operators to use metered consumption as soon as reasonably practicable[64].

Removing modelled consumption rates for new train services

3.75 Network Rail suggested removing the possibility for new rolling stock to be given new modelled rates. Having considered this suggestion further, we are minded to widen its scope to cover all new train services. For the purposes of this proposal, we define "new train services" as any service that uses vehicles that are brand new to the industry, or existing vehicles that require a new modelled consumption rate (for example because their operator moves them to a new service code).

3.76 We consider this to be practically possible as such rolling stock would be billed using the existing default rates, whilst waiting for their billing processes based on metered consumption to be set up (including the installation of new meters in the case of old rolling stock). This approach has the benefit of speeding up OTM take-up, which in turn has the potential to improve efficiency in energy consumption and thereby lead to better environmental outcomes.

[63] Specifically, Schedule 3.6 of the 2016 Regulations regarding discounts.

[64] This is set out in Chapter 6 of operators' National Rail Contracts published on DfT's website.

3.77 We have considered the impacts of this proposal. Firstly, as it only applies to "new train services", operators would not face any increase in costs for existing services using modelled consumption, and could continue to be charged for EC4T on this basis. For operators who introduce a new service, they will have a choice to either: use new rolling stock with meters which are typically installed as standard; use old unmetered rolling stock and install meters; or incur higher default consumption rates. For those operators who choose to install meters, we have previously estimated the cost of this to be around £12,000 for AC train-sets and £24,000 for DC train-sets[65]. However, this is set against the cost of calculating a bespoke modelled rate for a new train service, which we understand from Network Rail is around £12,000. As discussed above, we consider there are benefits to increasing the overall proportion of metered consumption on the network, by helping to improve energy efficiency and the accuracy of electricity consumption estimates (which is discussed in more detail in paragraphs 3.87-3.89 below).

3.78 Overall, we consider this proposal will encourage take up of on-train metering and will help to ensure that old unmetered rolling stock is progressively phased out, while protecting the position of operators already using modelled consumption for existing services. We consider this would be a proportionate change to the existing Traction Electricity Rules (TERs)[66].

3.79 For the avoidance of doubt, if an existing modelled operator proposes significant variations to their services in a way that would require them to obtain a new modelled rate, this policy would apply to them, i.e. they would be billed using existing default modelled rates or move to OTM.

Consultation question

Question 3.3: Do you have any views on our proposal to remove modelled consumption rates for new train services from the beginning of CP7?

Removal of Partial Fleet Metering (PFM)

July 2021 consultation

[65] Based on estimates of the reasonably efficient costs of metering derived as part of PR13.

[66] The TERs set out rules and provisions relating to the calculation of EC4T charges. These rules can be amended, where necessary, in order to implement changes made as part of an access charges review.

3.80 PFM involves extrapolating metered consumption from a sample of metered trains, to estimate consumption for unmetered trains. In order to simplify the charging framework (specifically the TERs), and given that no operator has opted-in to PFM since its introduction in PR13, we proposed in our July 2021 consultation to remove this charging approach.

Summary of responses

3.81 All respondents who commented on this issue supported our proposal to remove PFM on the basis that PFM appears to be complex but of little value to operators, given that no operator has chosen to use it to date. Removing it would simplify arrangements. RDG and Arriva noted they would support the removal of PFM providing it does not discourage the use of on-train metering.

Our assessment and preferred approach

3.82 In light of stakeholders' responses, we are still minded to remove PFM as a charging option. We are not aware of any evidence suggesting that the availability of PFM has had any influence on train operators' decision to take up OTM, so we do not consider that removing PFM is likely to discourage the use of OTM.

3.83 However, we will keep this decision under review until later in PR23, taking account of whether there has been any take-up of PFM during the rest of CP6, and if there has been any change in the prospect of its potential use in the future.

Removal of the loss incentive mechanism

July 2021 consultation

3.84 The loss incentive mechanism is intended to incentivise Network Rail to reduce traction electricity transmission losses. In our July 2021 consultation, we proposed to remove it on the basis that it was not proving effective at achieving this intended purpose, and that removing it would simplify the calculation of EC4T payments.

Summary of responses

3.85 The majority of stakeholders agreed with this proposal. Network Rail supported this proposal, noting that the mechanism no longer acts as an effective incentive to reduce transmission losses. In the same vein, DfT supported the removal of the mechanism and stated that it does not consider that redesigning it would be an appropriate priority.

3.86 LSER, GB Railfreight and c2c opposed our proposal and said the mechanism should instead be redesigned to ensure the right incentives are in place for Network Rail to work towards reducing transmission losses. RDG and Arriva said the mechanism has allowed the costs of transmission losses to be considered as part of decision-making processes, but that consideration should be given as to whether the benefits of the mechanism are outweighed by the additional administrative costs and complexity it creates. Northern Trains said Network Rail should remain incentivised to reduce transmission losses.

Our assessment and preferred approach

3.87 We consider that the main reason why the existing loss incentive mechanism is not providing effective incentives to minimise transmission losses is linked to errors in modelled consumption estimates and distribution system loss factors (DSLF), which is not practically possible to fully eliminate. Until EC4T consumption is fully metered, any attempt to improve or redesign the mechanism will face those constraints and the costs of doing so are likely to outweigh the benefits from potential improvements. For these reasons, we agree with DfT that redesigning this mechanism would not be a proportionate approach and we are therefore minded to proceed with our proposal to remove the mechanism.

3.88 However, we also agree with some respondents that, given the increasing importance of energy efficiency, Network Rail should be required to take action to minimise transmission losses. Since the introduction of the mechanism, Network Rail has continued to argue that there are no major cost-effective interventions it can make to reduce transmission losses in the short-term, and that significant reductions in transmission losses would require large scale changes in electricity supply assets, the cost of which would far outweigh any financial benefits through reduced transmission losses.

3.89 While we recognise this, we still believe Network Rail should where possible be incentivised to reduce transmission losses. For the reasons explained above, we do not consider the existing loss incentive mechanism is effective in doing this, and we consider it would not be proportionate to try to redesign it. However, as we move to fully metered consumption, we expect that there will be fewer errors in EC4T consumption recordings, which could in future allow us to design a mechanism that is more effective in incentivising Network Rail to reduce transmission losses. We therefore intend to keep this issue under review.

Electrification Asset Usage Charge

July 2021 consultation

3.90 The Electrification Asset Usage Charge (EAUC) recovers the variable costs (costs that vary with changes in the level of electrified traffic) of maintaining and renewing electrification assets. In our July 2021 consultation, we proposed to leave this charge unchanged beyond recalibration for CP7.

Summary of responses

3.91 The majority of stakeholders supported our proposal to make no changes to the EAUC in PR23 beyond recalibration, largely on proportionality grounds.

3.92 However, MTR and West Midlands Rail Executive opposed the proposal. MTR suggested removing the charge (or in the short-term merging the charge with e.g. the VUC) on the basis that electrical equipment should be treated in the same way as other assets (e.g. signalling equipment) which are not funded separately. West Midlands Rail Executive suggested the charge should be reduced or replaced, to encourage further decarbonisation of rail.

Our assessment and preferred approach

3.93 In PR18, we considered combining the EAUC and VUC charges to simplify the overall charging framework. However, we concluded that this would be administratively burdensome to implement. It would also reduce the overall transparency of Network Rail's costs. At present, our position has not changed.

3.94 Furthermore, for the same reasons discussed in Chapter 1 (and in our assessment of phasing-in of VUC increases), we do not consider that the EAUC can be reduced purely to encourage decarbonisation. Network Rail must recover the direct costs associated with maintaining and renewing electrification assets (unless merged with another variable charge, which we disagree with for the reasons above).

3.95 As such, we remain minded to make no changes to the EAUC in PR23, beyond recalibration.

4. Station charges

Summary

We are not proposing to make major changes to the station long term charge (LTC). However, we are minded to take forward two small changes that we proposed in our July 2021 consultation to amend how the long-term charge is set for some of the largest franchised stations, as well as for new stations that open during a control period.

We have decided not to take forward the July 2021 consultation proposal to regulate the fixed element of the qualifying expenditure (QX) charge for managed stations. This will continue to be agreed between Network Rail and passenger operators. However, we will approve the management fee element of this charge as in previous periodic reviews.

Introduction

4.1 This chapter discusses our approach to station charges. In CP6, the following two charges are paid by train operators whose services depart a station:

(a) the **station long term charge (LTC)**, which allows Network Rail to recover the cost of maintaining, repairing and renewing (MRR) operational property and station information and security systems (SISS) at managed and franchised stations[67]; and

(b) the **qualifying expenditure (QX)** charge, which allows the station facility owner (SFO) to recover the day-to-day running costs of providing shared services and amenities. This charge comprises a 'fixed' element, recovering direct costs such as station staff and cleaning costs, and a 'management fee' element which recovers overhead costs and allows for a reasonable profit.

4.2 The LTC is a regulated charge, which means that we set the principles on which the charge should be calculated, and approve its value for every station. Only the management fee element of the QX charge at managed stations is regulated; this is determined and approved as part of each periodic review.

[67] Managed stations are stations that Network Rail operates day-to-day. This is as opposed to franchised stations, where a train operator (usually, but not always, the principal train operator at that station) operates the station. There are currently 20 managed stations.

Station Long Term Charge

4.3 All operators pay a LTC for each individual station they depart. The charge is calculated differently for franchised and managed stations[68].

4.4 In our July 2021 consultation, we said that the station LTC is generally fit for purpose. However, we identified a number of areas where there may be scope for potential incremental improvements to this charge, as follows:

(a) the complexity and transparency of the LTC;

(b) consistent treatment of managed and large franchised stations;

(c) the apportionment of the LTC between operators; and

(d) the approach to charging new stations.

4.5 Respondents to our July 2021 consultation generally agreed that there should not be any fundamental changes to station LTCs for PR23. In the rest of this section, we set out our preferred approach in respect of the areas above, taking account of July 2021 consultation responses and further work undertaken since then. We have also considered the outputs of a study commissioned by Network Rail into station access charges, which identified some potential options for reform based on engagement with industry (including with funders and passenger operators).

4.6 Respondents also raised some additional points in relation to the station LTC, besides the areas identified in our July 2021 consultation. We have summarised these points, and our view, in Annex 2. In general, they have not materially affected our approach to determining station charges for PR23.

Complexity and transparency of the LTC

July 2021 consultation

4.7 In our July 2021 consultation, we noted that some parts of industry consider the calculation of managed and franchised station LTCs to be complex and lacking clarity. We said this may serve to weaken effective engagement by TOCs, especially at key stages of the periodic review, such as the recalibration process. To remedy this, Network Rail told us that it planned to publish guidance and explanatory notes on the LTC and its calculation method. We supported this.

[68] See paragraphs 5.5 to 5.7 of our July 2021 consultation for further details on this.

Summary of responses

4.8 All stakeholders who commented on this issue supported additional guidance on the calculation of the station LTC. First Group said further clarity should be added within the Station Specific Annexes on what costs are recovered through LTCs.

4.9 Network Rail confirmed in its response that it intends to publish explanatory guidance as part of its recalibration consultation process, and alongside its CP7 price lists. Network Rail also said that the current station charging framework is disproportionately complex. It said that the existence of individual LTCs for all stations is not justified by the benefits this delivers in terms of incentive effects, and creates a false impression that there is, or should be, a close link between LTCs and expenditure in the control period for each station. Network Rail said it may be possible to move away from individual LTCs for every station as part of PR23, or that, at a minimum, potential changes for PR23 should be considered with an eye to simplifying station charges in the longer-term.

Our assessment and preferred approach

4.10 We support Network Rail's commitment to publishing additional guidance on the calculation method for station LTCs, as well as information on which types of cost are recovered through this charge. This should improve understanding of how LTCs are calculated for different station types, and help to facilitate more informed discussions between industry parties particularly during the PR23 recalibration stage[69]. We will work with Network Rail on the development of this guidance so that it is available in advance of the recalibration of station charges.

4.11 In the longer-term, we recognise that there may be opportunities to simplify the station LTC framework – while ensuring that this does not result in a loss of useful information about the MRR costs of station assets, and how these vary across the stations portfolio. We consider that this would be best considered once GBR is established and there is greater clarity about how stations will be funded and managed under a reformed industry structure. Network Rail agreed that more fundamental changes to the calculation of individual station charges would be disproportionate until such wider changes to industry are better understood.

[69] ORR has also published a charges user guide to aid industry understanding of this charge. This guide sets out the key steps in the calculation of both managed and franchised LTCs. As explained in this guide, individual station LTCs are not designed to reflect Network Rail's actual expenditure at each station within a control period. This is because they are intended to achieve a degree of smoothing across station categories (for franchised stations) and over time (for managed stations).

Consistent treatment of managed and large franchised stations

July 2021 consultation

4.12 Currently, LTC-related operational property expenditure for franchised stations is allocated equally to individual franchised stations within each station category in a route (a "category averaging approach"). This means that the presence of a large station (with its associated high MRR activity) in a category can materially distort the LTCs for all franchised stations in that category.

4.13 In our July 2021 consultation, we proposed that the LTC for the largest or most complex franchised stations should be calculated separately, based on station-specific expenditure forecasts. This is how the LTCs for Network Rail's 20 managed stations are calculated. We said this would enhance the cost reflectivity of the charges at these larger/more complex stations, and eliminate their impact on the LTCs of smaller stations within their category.

Summary of responses

4.14 Several respondents expressed support for this proposal, subject to greater clarity on the definition of a 'large/complex' franchised station. Some respondents suggested that station-specific forecasts should be used to calculate LTCs for all stations, while others noted the additional administrative burden this proposal would create for Network Rail, particularly at a time of uncertainty for industry.

4.15 Network Rail said the current approach of calculating managed and franchised LTCs using (respectively) station-specific and category-averaged expenditure forecasts is a proportionate solution which achieves cost-reflectivity for the largest stations, while recognising the impracticality of trying to generate 2,500 station-specific forecasts. However, it noted that managed stations are not always the costliest stations, and that rail reform may erode the existing distinction between managed and franchised stations.

4.16 Network Rail therefore supported a modest revision to the current framework under which the approach to calculating LTCs is based on station size, instead of managed or franchised status. It proposed that passenger usage could proxy for station size, with LTCs for the six busiest stations in each of Network Rail's five regions calculated based on station-specific expenditure forecasts. LTCs for all other stations would continue to be calculated using category averaging. This would increase the overall number of station-specific LTCs from 20 to 30.

4.17 Trenitalia c2c disagreed with this proposal. It said that removing the largest franchised stations from a portfolio would lead to an increase in contingency funding (which could push up overall costs for industry) and reduce the flexibility to award cross-portfolio contracts. c2c also said it is not clear how the largest or most complex stations would be selected.

Our assessment and preferred approach

4.18 In determining LTCs, there is a trade-off involved in basing LTCs on station-specific expenditure forecasts. On the one hand, this approach will increase their cost reflectivity, which increases transparency over Network Rail's spending plans (potentially improving scrutiny over cost efficiency), and can also provide useful information to train operators and funders about how best to use the network. On the other hand, it increases the administrative burden and complexity of the charging framework, relative to a category averaging approach.

4.19 In this context, given the number of stations on the network, we agree that it would not be proportionate to calculate all LTCs based on individual expenditure forecasts. We also recognise that increasing the number of station-specific LTCs (by extending this approach to some franchised stations) would create an additional administrative burden. However, as noted by Network Rail, the current distinction used to determine LTC calculation methods (i.e. whether the station is managed and franchised) may become less relevant in future. We consider there is benefit in putting in place a more enduring distinction for the calculation of LTCs, which better reflects the trade-off described above.

4.20 As such, **we are minded to pursue our proposal to align the calculation of the largest franchised stations with the methodology currently used to calculate managed station LTCs**. With regards to c2c's comments, we do not consider that a modest revision to the number of stations adopting this approach would have a significant impact on the need for contingency funding for other franchised stations, and we consider Network Rail's existing risk funding mechanisms to be sufficient in ensuring that Network Rail is adequately funded for its operations.

4.21 We noted in our July 2021 consultation that this proposal requires us to determine specifically which franchised stations should be classified as large/complex. We have now considered this further. We agree with Network Rail that passenger usage is a practicable and objective metric on which to draw this distinction, as it is

likely to be reasonably well-correlated with station expenditure[70]. We have considered the following possible approaches, based on passenger usage:

(a) Network Rail proposed one option whereby LTCs for the six busiest stations in each region are calculated using station-specific expenditure forecasts (**Option A**). These stations account for 30% of total passenger usage on average, over years 4 to 5 of CP5 and year 1 of CP6[71]. This would result in LTCs for 12 additional stations being set based on station-specific forecasts (with two managed stations moved to a category averaging approach).

(b) One drawback with this option is that it would include some smaller stations (e.g. Paisley Gilmour Street) at the expense of stations in other regions which have significantly higher passenger footfall, and are likely to require greater MRR activities. This could be addressed by adjusting the classification slightly to take account of the different distributions of station sizes between regions. We have therefore considered an alternative option (**Option B**) that includes some more stations in the Southern region (where passenger usage indicates that there are a greater number of larger/more complex stations), and slightly fewer stations in Scotland and Wales & Western.

4.22 Table 4.1 below compares the specific stations covered by these options. The stations in Option B account for a slightly higher proportion of passenger usage (32%) than Option A, and a similar proportion to defining large/complex stations purely on passenger usage[72], while still ensuring that a minimum of the three largest stations in each region are excluded from the category average approach.

4.23 After this point, the incremental benefit of including an additional station begins to diminish. For instance, including an additional ten stations would only capture a further 4% of total passenger usage (implying a relatively minor improvement in overall cost-reflectivity), while setting the threshold to capture half of all passenger usage would mean calculating station-specific forecasts for 74 additional stations, which we consider would not be proportionate[73].

[70] For managed stations, the correlation coefficient between 2019-20 station footfall and expenditure that is recovered in CP6 is moderately positive (0.59).

[71] Based on ORR estimates of station usage, available on our data portal. We have excluded 2020-21 data due to the extraordinary impacts of the pandemic.

[72] The top 30 stations across GB account for 33% of passenger entries/exits on average.

[73] We also considered using Network Rail's *existing* categorisation of franchised stations to define large franchised stations. However, the top category in this categorisation covers 111 stations, which would imply an even greater increase in the number of station-specific LTCs.

Table 4.1: Comparison of options for classifying large/complex stations

	Option A	Option B
Included in both options	Birmingham New Street Bristol Temple Meads Cardiff Central Clapham Junction East Croydon Edinburgh Waverley Glasgow Central Low Glasgow Central High Glasgow Queen Street Low Glasgow Queen Street High Highbury and Islington Leeds City Liverpool Central Liverpool Lime Street London Bridge London Charing Cross London Euston London King's Cross London Liverpool Street London Marylebone London Paddington London St. Pancras London Victoria London Waterloo Manchester Piccadilly Reading Stratford	Birmingham New Street Bristol Temple Meads Cardiff Central Clapham Junction East Croydon Edinburgh Waverley Glasgow Central Low Glasgow Central High Glasgow Queen Street Low Glasgow Queen Street High Highbury and Islington Leeds City Liverpool Central Liverpool Lime Street London Bridge London Charing Cross London Euston London King's Cross London Liverpool Street London Marylebone London Paddington London St. Pancras London Victoria London Waterloo Manchester Piccadilly Reading Stratford
Included just in Option A	Bath Spa Oxford Paisley Gilmour Street	
Included just in Option B		Brighton Gatwick Airport London Cannon Street Vauxhall Wimbledon
% of total passenger usage	30%	32%

Notes: Existing managed stations are highlighted in red. Glasgow Central High / Low level and Glasgow Queen Street High / Low level are classed as separate stations by Network Rail, so this would account for four of the stations in Scotland under Option A. Under Option B, we have classed these as single stations.

4.24 Overall, we consider both options would be a proportionate improvement on the status quo, and strike an appropriate balance between cost reflectivity and practicability (recognising that there may be further opportunities to revise station charging to better reflect longer-term funding and management arrangements once GBR is fully established). On balance, we consider **Option B** is a more appropriate classification; it would only require Network Rail to calculate station-specific expenditure for one additional station more than Option A (13 instead of 12), and better reflects those stations where total MRR expenditure is likely to be greatest, while also ensuring the largest stations in each region are removed from the route-level forecasts that are used to set franchised station LTCs[74].

4.25 We note that Network Rail is separately reviewing the existing station categorisation used to allocate route-level expenditure to franchised stations to set existing LTCs (which is currently based on passenger usage). If this work identifies an improvement to these categories, we will consider any implications for which franchised stations should be categorised as large, before making final decisions.

4.26 Finally, we note that Nexus said it would seek to be held financially neutral if Sunderland station was included as a large/complex station, and this resulted in a major change in the LTC. In principle, we do not consider that this would be appropriate as the new LTC would more accurately reflect Network Rail's MRR costs at this station. However, Sunderland station is not included in either of the candidate definitions discussed above.

Consultation question

Question 4.1: Do you have any views on our proposed approach to calculating LTCs for CP7, including on our proposed classification of a large/complex station i.e. Option B?

Apportionment of LTC-related expenditure between operators

July 2021 consultation

4.27 Currently, SFOs apportion the total LTC-related expenditure between operators based on the number of vehicle departures at each station. In our July 2021 consultation, we sought industry views on possible alternative metrics that could

[74] We note that one implication of this proposal is that one existing managed station – Guildford – would fall out of this into the category average set of stations, which would reduce cost reflectivity for this station.

be used to apportion expenditure (e.g. passenger numbers), while noting that the benefits of changing the apportionment approach are likely to be small.

Summary of responses

4.28 Most respondents supported our view that the benefits of changing the approach to apportioning LTC-related expenditure between operators would be small.

4.29 With regards to the potential use of passenger numbers as the apportionment metric, respondents made the following points:

(a) Incentive effects: Network Rail said that operators are not directly responsible for the number of passengers on a given service, and existing contracts gives them very little or no freedom to influence the number of vehicles or passengers calling at each station. Nexus said that moving from vehicle departures to passenger numbers could discourage some operators from growing passenger numbers.

(b) Cost reflectivity: Network Rail said that this change would be unlikely to materially affect LTCs (given the correlation between vehicle departures and passenger numbers), and it is not clear in any case that passenger numbers drive station asset costs more than vehicle numbers.

(c) Data requirements and reliability: Network Rail noted this change would create additional data requirements[75], while c2c said that passenger numbers may not be a reliable metric for some stations when passengers do not always pass through ticket barriers.

4.30 Among respondents who supported a change to the apportionment metric, suggestions for alternative metrics included timetabled seats, passenger loadings and station footfall. First Group suggested the long-term planning timetable is a stable apportionment metric for LTC-related expenditure. One respondent said that operators should pay a share of LTC-related expenditure based on the proportion of vehicles that call at the station, as opposed to the current process, where this proportion is fixed for the duration or until there is a change in train operators.

[75] Network Rail said DfT collects some data of this nature, but this is limited to around 1% of all stations. ORR reports data on station entries / exits, but not disaggregated by operators calling at each station.

Our assessment and preferred approach

4.31 Having considered stakeholder responses, we do not consider there is clear evidence that changing the apportionment metric for the LTC would materially affect the LTCs each operator pays, or improve the cost reflectivity and incentive effects of the LTC. We also recognise this would create some additional data requirements. Our preferred approach for the LTC in CP7 is therefore **to retain vehicle departures as the apportionment metric for the LTC.**

4.32 With regards to the frequency of the current metric, we understand that the vehicle departure figures used to set LTCs are based on two sample periods[76]. These are updated annually for managed stations, but not for franchised stations where a train operator is the SFO – these are fixed for the control period. There may be some benefit in aligning the process for managed and franchised stations, such that vehicle counts for franchised stations are also updated annually[77]. However, as this affects how train operator SFOs recover the LTC from other operators at franchised stations, we consider that they are best placed to consider this change.

Approach to charging new stations

July 2021 consultation

4.33 A newly opened station is expected to incur lower maintenance and renewals costs early in its life. However, prior to CP6, the LTC for a new franchised station that opened during a control period was set at the same level as the LTC for existing stations in the same route and station category.

4.34 In PR18, we asked Network Rail to review the evidence base underpinning the LTC for new stations. Network Rail's analysis indicated that the operational property element of the LTC for new stations should be set at 10% of the forecast expenditure levels for existing stations in the same route and station category, until the end of the control period during which the station opened. This is how LTCs for new stations are set in CP6[78].

[76] These periods are the second weeks in June and January, timed to reflect timetable changes. For 2021, industry agreed to use the same vehicle counts as in 2020 because of the extraordinary impact of the pandemic.

[77] We also understand that vehicle departure proportions *are* updated annually for the purposes of setting the QX charge at franchised stations, so this would also align the methodology across these charges.

[78] The analysis underpinning this is set out in a letter from Network Rail to ORR. We published our decision approving this methodological change in January 2020.

4.35 In our July 2021 consultation, we noted that if a station opens closer to the end of CP6, it would incur a lower operational property charge for a shorter timeframe than a station that opened earlier in the control period. We proposed that Network Rail categorises all newly opened stations as 'new' for a fixed five-year term from the date of opening (regardless of when in the control period it opened), and sets the LTCs to reflect this.

Summary of responses

4.36 Most respondents supported this proposal. Some respondents suggested that stations that have undergone significant redevelopment should also be subject to similar discounts on the operational property element of their LTCs, with Nexus highlighting that this should especially be the case where TOCs have contributed to the funding of that redevelopment.

4.37 Network Rail also expressed support for the proposal but highlighted that, where a new franchised station's operational property element discount runs into a new control period, LTCs for the next control period are set at the level necessary to recover total forecast MRR costs in that control period.

Our assessment and preferred approach

4.38 Since our July 2021 consultation, we have discussed this proposal further with Network Rail. Under the current approach to charging new stations, Network Rail would not be expected to over-recover its total station expenditure for each route. Network Rail's route-level plans capture forecast expenditure for all existing franchised stations which are operational at the start of a control period – including those which opened during the previous control period – and take account of the mix of operational property assets in each route. Franchised station LTCs are then set to recover total route-level costs in aggregate.

4.39 Under this proposed change, franchised station LTCs would still be set so that in aggregate they recover total route-level costs. As such, the proposal would not affect Network Rail's overall cost recovery. However, it would affect the *profile* of franchised station LTCs in a route where a station has opened in the previous control period. Specifically, it would result in a lower LTC for the new station, for a portion of the next control period, and a higher LTC for all other franchised stations (to ensure total forecast expenditure continues to be recovered at route level). The proposal would therefore have some impact on train operators, depending on the extent to which they call at newly opened stations relative to existing stations.

4.40 In principle, we would not expect particular train operators to benefit more or less from this change, because the impact is entirely dependent on where new stations open during a control period. However, it would ensure that LTCs for new franchised stations are calculated consistently and are not dependent on the timing of a periodic review (even if overall station expenditure for a given route is unaffected). As such, and given the level of support received from industry, our preferred approach is to take this proposal forward for PR23.

4.41 We therefore propose that **the operational property element of the LTC for franchised stations that open during CP7 should be set at 10% of that for existing stations in the same route and station category, for a fixed term of five years from the date of that station's opening**. We also consider that this proposal should apply to franchised stations that have opened during CP6 and their dates of opening are such that they remain 'new' (i.e. less than five years old) in CP7. As above, this should not undermine Network Rail's ability to recover total forecast MRR costs for CP7, so long as other LTCs are set to recover total expenditure at a route level.

4.42 We recognise that stations that have undergone significant redevelopment may incur lower operational property expenditure for a period of time. However, we do not consider that this requires an adjustment to the current charging methodology for franchised stations. This is because – for the same reasons explained above – this work will be factored into Network Rail's route-level plans for the next control period, so it does not give rise to a risk of over-recovery. As such, we consider that operational property element of LTCs should only be adjusted for new stations that open during CP7 (or have opened during CP6).

Consultation question

Question 4.2: Do you have any views on our proposed approach to setting LTCs for new stations in CP7 (and stations that have opened during CP6), such that the operational property element of their LTC is set at 10% of that for existing stations in the same route and station category for a fixed five-year period from the date of opening?

Qualifying Expenditure Charge

4.43 All operators that depart a given station pay the QX charge to the SFO. It is charged for each individual station. The fixed element of this charge is determined

by negotiation between SFOs and train operators that use the station in question, while the management fee element at managed stations is regulated by ORR.

4.44 Our July 2021 consultation covered one area for potential change: the regulation of the fixed element of the QX for managed stations.

Regulating the fixed QX element

July 2021 consultation

4.45 In PR18, we considered whether it would be appropriate to regulate the fixed element of the QX charge, but decided to prioritise improving the transparency of the charge. Network Rail asked us to reconsider the option of regulating the QX fixed element for its managed stations, as part of PR23. It considered the current process for determining the QX fixed element is administratively burdensome, gives rise to protracted negotiations, and can result in unsatisfactory outcomes that have affected passenger experience and safety, or required Network Rail to fund necessary activities at stations from other sources.

4.46 In our July 2021 consultation, we asked industry to give its views on the merits of such a proposal and said that we would continue to assess the option, as well as considering if there are other means by which we could achieve some of the benefits that may be associated with regulating the fixed element of this charge.

Summary of responses

4.47 Overall, the responses we received on this topic were mixed. Several respondents expressed support for Network Rail's proposal, citing the potential for increased transparency around the QX and the streamlining of the process for determining the level of the fixed element of the charge. Other respondents argued that they are better placed to determine the most appropriate outcomes for passengers at stations, with their input potentially reduced under the proposal.

Our assessment and preferred approach

4.48 Having reviewed July 2021 consultation responses, and considered this issue further, we published a letter in December 2021 setting out our position on the matter. In this letter, we stated that our intention for CP7 is to retain the status quo, where the fixed element of the QX continues to be agreed between Network Rail and passenger operators, instead of becoming a regulated charge. **We are confirming this decision as part of this consultation**.

4.49 We also reiterated our desire to explore simpler ways to improve the process for determining the fixed element of the QX, that do not require significant amendments to the existing independent station access conditions (ISACs). To aid transparency, we asked Network Rail to publish the total QX amount for each of its managed stations on its website on an annual basis. Network Rail have now published these amounts for year 3 of CP6. Additionally, we will also consider greater use of monitoring and reporting of station condition during CP7, to inform whether the provision of shared services and amenities funded through this charge is sufficient at managed stations (and how it compares across stations).

4.50 In the longer-term, once GBR has been established and there is greater clarity over its station management role and remit, we consider that there may be further scope to improve the QX determination process. For CP7, it is important that industry continues to work together to agree QX levels at managed stations in a timely fashion. To this end, we understand that Network Rail is currently in the process of consulting with train operators about a proposal to adopt a simpler mechanism for the calculation of the QX fixed element, with a view to undertaking a more substantial review once GBR has been established. We welcome Network Rail's early engagement on this issue and encourage the rest of industry to engage constructively on the merits of this approach.

4.51 With regards to the management fee element of the QX charge, RDG said a better understanding of how this is calculated would be beneficial. As with previous periodic reviews, we expect Network Rail to consult on this element of the charge for managed stations, as part of the recalibration process. We will engage in this process and will publish our decision on the approval of this fee later in PR23.

4.52 We note that MTR and Nexus have also called for greater transparency of QX charges for franchised stations (and how they are calculated, overheads are allocated and how shared costs are treated) to facilitate benchmarking. While we support greater transparency in this area, we do not consider that we are best placed to lead on this work since the franchised QX is not regulated. We are therefore keen for industry to lead this.

5. Inflation indexation

Summary

We are minded to retain the Consumer Price Index (CPI) as the general inflation index for updating Network Rail's access charges (and payment rates in other mechanisms where we set the method of indexation) in CP7.

Introduction

5.1 In PR18, we changed our method of inflation indexation for access charges (and payment rates in other mechanisms where we set the method of indexation) from the Retail Price Index (RPI) to the Consumer Price Index (CPI). We also considered using a slightly different measure of general inflation to CPI, known as CPIH, which includes owner-occupiers' housing costs. We decided against this, but said we would review the use of CPI over CPIH in our next periodic review.

July 2021 consultation

5.2 In our July 2021 consultation, we stated that our initial view is that CPI remains an appropriate index to update Network Rail's CP7 price lists[79]. We noted that CPI remains the inflation measure that is targeted by the Bank of England, and, while CPIH has now been classified as a National Statistic for several years, there remains a greater availability of forecasts for CPI than CPIH. We did not identify any clear reasons to favour moving to CPIH for the next control period.

Summary of responses

5.3 All but one respondent who commented on this issue supported maintaining CPI as the general inflation index for access charges and payment rates. This respondent said that using CPI to adjust payment rates (e.g. Schedule 8) creates a misalignment with fares, which are still adjusted by RPI, which means that these payments will undercompensate operators for the impact of delay.

[79] For example, if a charge is £100 in one year and CPI is 2%, the charge for the next year will be £102.

5.4 Network Rail supported our proposal, but said this should not amount to an agreement that all of Network Rail's input prices will rise by CPI, and that the effect of specific changes in input prices relative to CPI should be considered in ORR's assessment of operating, maintenance and renewals costs for CP7.

Our assessment and preferred approach

5.5 We recognise that, if regulated train fares continue to be indexed by RPI inflation, updating Schedule 4 and 8 payment rates by CPI imposes some financial risk on operators[80]. We considered this in PR18, but noted that, as the expected net value of receipts and payments under these regimes will be zero, this is unlikely to be significant[81]. As such, and given the other advantages of CPI that we identified, we did not consider that this was a sufficient reason to maintain RPI as the inflation index just for updating payment rates. Our view on this remains the same for CP7.

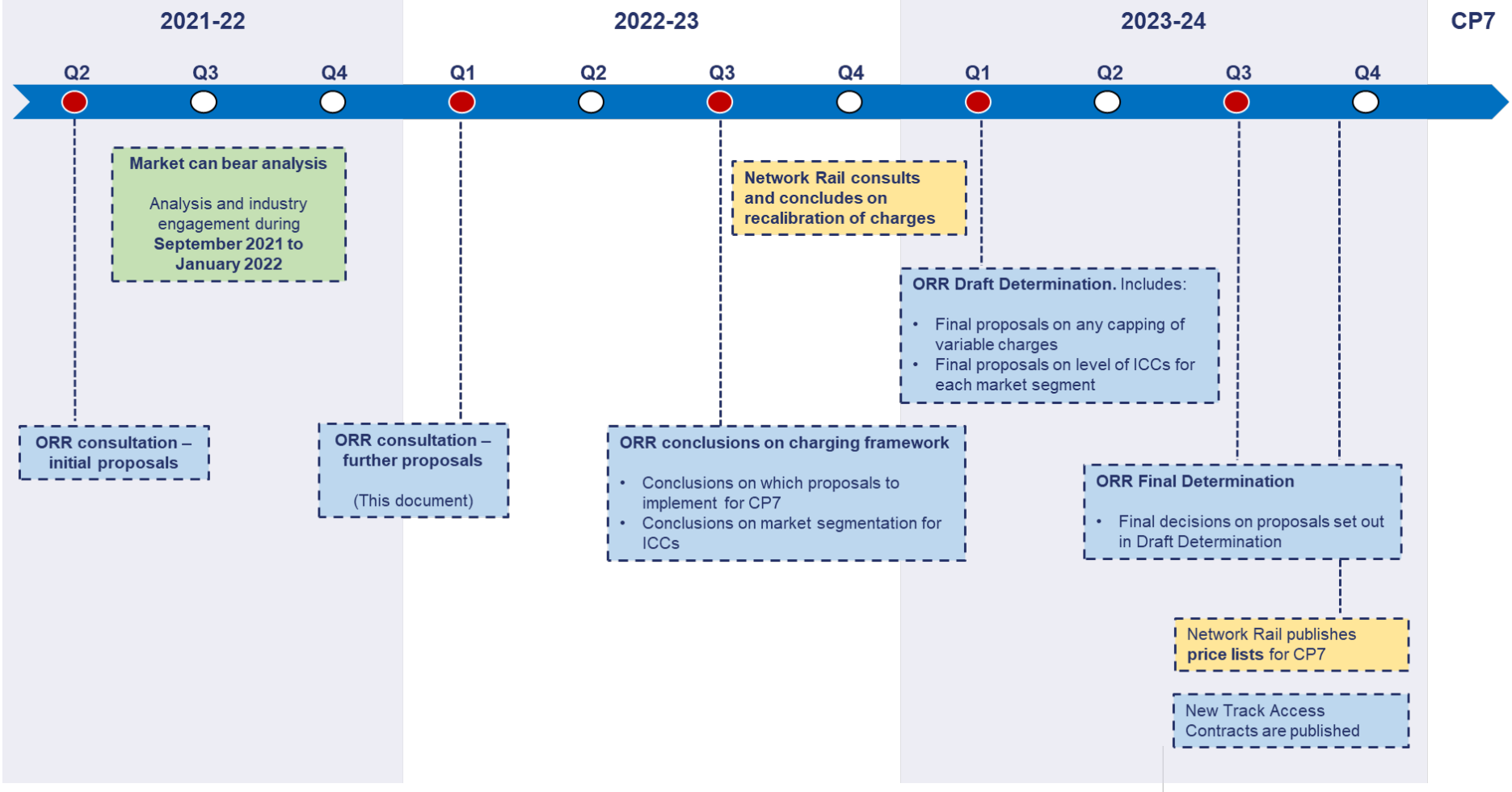
5.6 Given that no respondent supported moving to CPIH for CP7, we have decided to retain CPI as the general inflation index for updating Network Rail's access charges (and payment rates in other mechanisms where we set the method of indexation) in CP7.

5.7 We recognise that Network Rail's operations, maintenance and renewals (OMR) funding settlement should reflect the effect of specific changes in Network Rail's input prices because of the particular mix of goods and services that it purchases. As noted in our July 2021 consultation, we are taking account of this as part of our assessment of Network Rail's costs for CP7, in advance of providing our advice to funders in early summer 2022.

[80] Though we note that fares may not always rise in line with RPI in practice.

[81] This is set out on page 57 of our second consultation on the PR18 Financial Framework (March 2018).

Annex 1: PR23 charges review timeline



Annex 2: Summary of other stakeholder comments

Respondents raised some additional points in relation to Network Rail's charging framework, besides the areas identified in our July 2021 consultation. We have summarised these points, and our position, in the table below.

Variable charges

Issue	Points raised	Our position
Incentivising the use of track friendly bogies and equipment	The Rail Freight Group, the Rail Wagon Association and Aggregate Industries Ltd said the discount for track friendly bogies should be reviewed to ensure that the incentive effects are sufficient to cover the cost differential between these and other bogies.	Under the existing VUC calculation methodology, vehicles with track-friendly bogies pay a lower VUC rate than vehicles with less track-friendly bogie types. This difference in VUC rates reflects the differential impact on track wear-and-tear, based on existing track damage formula used to set rates for CP6. We consider this sends the appropriate signals to operators in respect of their rolling stock choice. We are aware that, in the short term, it does not cover the full cost differential between these and other bogies because that is not its primary objective, which is to reflect the relative damage that different vehicles cause to the track. However, we understand that the treatment of track friendly bogies in the VUC calculation methodology is one area being considered as part of Serco's review of the VTISM (on behalf of RSSB). Our position in respect of this work, and how we propose to take account of it for the purposes of charges, is set out in Chapter 3.

Issue	Points raised	Our position
Frequency of the VUC recalibration	Trenitalia c2c said the threshold for triggering a review of the VUC is too high and it should be possible to recalibrate charges within the control period when significant changes are made to rolling stock (which reduce its impact on the track). c2c said the charge will only provide incentives to operators if it can be adjusted more frequently than once every five years.	The existing VUC guidance allows for a review of the VUC rate, within a control period, for any vehicle that undergoes modifications which change the characteristics that determine its VUC rate such as the number of axles, vehicle weight, etc. As discussed in Chapter 3, we are also proposing in this consultation that the VUC be recalculated during the control period if Network Rail withdraws HAW network capability. Outside these circumstances, we do not consider it would be proportionate to recalibrate the VUC within the control period. This is because a more frequent recalibration of the VUC would reduce the certainty and predictability of the charges and income that the current approach offers to operators and Network Rail, respectively. We note that the decision to set VUC rates for individual vehicles for the full control period was taken in PR13 after Network Rail engaged with the industry extensively (see Network Rail's PR13 consultation on the allocation of the variable usage charge).
The relationship between maintenance and renewals costs and freight commodities carried	GB Railfreight said they would like to better understand how maintenance and renewals costs vary depending on the commodities carried by freight traffic.	The VUC charge is disaggregated by commodity type, reflecting the different axle loads and average speeds associated with carrying different commodities. These two factors contribute to the determination of the vehicle's track damage score which reflects the relative level of wear-and-tear that the vehicle causes to the track.
Geographical disaggregation of the VUC	RDG said their independent owning group members supported further granularity in VUC rates which account for different geographical areas and speeds across the network. However, it also noted that their freight members were in favour of maintaining the VUC being set on a national basis.	The formulae underpinning VUC calculations are complex and give rise to a wide range of VUC rates. As in PR18, as part of this review, we have considered disaggregating the VUC on a geographical basis to increase its cost-reflectivity (see our July 2021 consultation). Our view remains that this would add significant complexity, which we do not consider would be proportionate in terms of the incentive effects for operators.

Issue	Points raised	Our position
Reflecting train speed in VUC	Arriva said it would like to see additional granularity in the train speed data used to calculate the VUC for specific fleets, for instance, reflecting the different speeds used on different parts of the network. However, it noted that the benefits of this may be outweighed by the additional cost and complexity. TfW suggested that VUC rates should reflect timetabled average speeds, rather than the maximum speed of the vehicle.	For charging purposes, Network Rail currently use the operating speed of a vehicle which is a representative 'average' speed at which the vehicle type typically travels on the network. The existing VUC guidance stipulates that train operators can choose to have their operating speed calculated based on one of the following: (i) the maximum speed as per manufacturer's specification (or as specified by the operator, assuming there is a physical constraint which means the vehicle cannot achieve the manufacturer's specified maximum speed); (ii) the route-based maximum speed (i.e. the maximum line speed of the routes over which the vehicle operates); or (iii) the user-calculated operating speed based on the published timetable. We consider this provides sufficient flexibility about the treatment of speed in the calculation of VUC, and we do not intend to make any change as part of PR23.
Assessing the efficient cost of operating, maintaining and renewing the network	GB Railfreight said they would like to understand the true efficient cost of operations, maintenance and renewals activities. Freightliner and DB Cargo said they expect a strong efficiency target to be applied to Network Rail as part of PR23 and for this to be reflected in the level of the VUC (on the basis that charges are set to reflect the efficient level of costs). In the same vein, MTR said that maintenance costs and train performance should be benchmarked, to ensure the VUC is being spent effectively and efficiently on each route section.	At each periodic review, we determine what Network Rail should deliver in respect of its role in operating, maintaining and renewing the network and how the funding available should be best used to support this. This process involves assessing Network Rail's strategic business plans to ensure they are not only realistic and justifiable, but also contain sufficiently stretching efficiency targets. These strategic business plans aim to reflect the local realities as they are prepared at regional level, with each of the five regions developing its own strategic business plan. We have published some guidance for stakeholder and funders setting out our proposed approach to assessing Network Rail's strategic business plans for CP7. The outputs of this work will then be reflected in the costs that Network Rail recovers, including through the charges that are set for CP7.

Station charges

Issue	Points raised	Our position
SISS assets and the level of LTCs	A respondent said that during CP6, SFOs have replaced SISS assets that Network Rail was allocated funding for, and that LTCs should be reduced on the basis that Network Rail is no longer responsible for those assets.	Network Rail levies the LTC on the SFO at franchised stations. The SFO is, in turn, entitled to recover appropriate proportions of the charge from station beneficiaries. We agree that Network Rail's MRR expenditure forecasts for CP7 should reflect its actual assets, and we will verify this as part of the approval of LTCs for the next control period.
Improved guidance on station (and variable) charges	Northern Trains said that, given the large number of 'New Station' and 'Restoring Your Railway' schemes, improved guidance on variable and station charges (and their calculation) would be beneficial when forecasting the costs to operators for these schemes.	As set out in Chapters 3 and 4, Network Rail intends to provide additional guidance on the calculation of variable and station charges. We expect this to be made available as part of Network Rail's recalibration process for PR23.
Scope of the review of station charges	MTR said that the review of station charges should be extended to the entire station portfolio, including franchised stations, to enable an effective transition to a future industry structure when GBR is established.	As part of this review, we have considered some incremental changes to calculating LTCs for franchised stations. In respect of the QX charge, this is not currently regulated for franchised stations and, for the reasons set out in Chapter 4, we do not consider that it would be appropriate to amend these arrangements as part of PR23. We consider that wider changes to station charging arrangements – including QX – are best considered once there is greater clarity about how stations will be funded and managed once GBR is established.

Other issues

Issue	Points raised	Our position
Review of rolling stock depot charges	Arriva said it would like to see further work along the lines of those proposed for station charges to be undertaken on rolling stock depot charges.	As depot charges are not determined through the periodic review process, we do not consider that this is something we can take forward as part of PR23.
Revising historic traction electricity consumption records	Trenitalia c2c said it had encountered an issue where the metering on some of its units stopped working and therefore estimated consumption amounts were used to calculate charges. However, it was not possible for Network Rail to retrospectively correct these estimates. c2c stated there is merit in ensuring that historic information can be corrected when actual information subsequently becomes available, to better reflect the traction electricity that has been consumed.	Article 4.2 of the Traction Electricity Rules (TERs) stipulates that if, in respect of a journey, metered data in respect of electricity data is not provided by the train operator to Network Rail within seven days, the missing data records for consumption data and regenerative braking data shall be substituted with the relevant infill values that are to be found in the journey look-up tables contained in the TERs. Article 7 of the TERs require Network Rail to levy an on-train metering (OTM) incentive charge on metered operators where there are significant levels of missing metered data (which is then paid to metered operators, in proportion to their metered traction electricity charge). This ensures that operators are incentivised to minimise the use of infill data (which is less accurate) by submitting their metered consumption data on time. We consider that the seven-day deadline is necessary to allow Network Rail to effectively perform its obligations under the TERs, including publishing metered and infill consumption data and billing all operators accurately and on time. We also consider that it is a sufficiently long time for the concerned operator to solve any issues that may cause the metered consumption data not to be available. As such, we do not intend to make any changes to this part of the TERs.
Transparency of cost allocation between operators	Arriva said that given the possibility that passenger operators who are directly contracted by GBR may not be required to pay access charges, further work is needed to determine how full transparency of cost allocation is maintained.	We agree it is important that there is transparency over how Network Rail (or GBR in future) allocates costs to different services, and how it recovers these costs (including through charges). We will consider any implications of changes to industry arrangements, and how to ensure cost transparency is maintained, once there is greater clarity over those arrangements.

Annex 3: Summary of consultation questions

Chapter 2 – Infrastructure cost charges

Question 2.1: Do you have any views on our proposal to maintain the existing market segmentation of open access services ('interurban' and 'other'), for the purposes of setting the open access ICC?

Question 2.2: Do you have any views on the most appropriate approach to setting the open access ICC for the relevant market segment in CP7?

Question 2.3: Do you have any views on whether or not we should maintain relief from any increase in charges prompted by the open access ICC, for existing operators (as defined in PR18)?

Question 2.4: Do you have any views on our proposal to maintain the existing market segmentation of freight services?

Question 2.5: Do you have any views on our proposal to continue to allow Network Rail to levy ICCs on freight services carrying iron ore, spent nuclear fuel and ESI biomass? Do you have any views on our proposal to remove the ICC on services carrying ESI coal, pending a further review later in PR23?

Question 2.6: Do you have any views on the most appropriate approach to setting freight ICCs for relevant market segments in CP7?

Chapter 3 – Variable charges

Question 3.1: Do you have any views on how we should take account of new evidence in relation to VTISM, for the purposes of setting the VUC?

Question 3.2: Do you have any views on our proposal to review the VUC guidance for CP7 to allow a new VUC rate to be calculated for existing vehicle types that are downgraded to lower than HAW RAs, because Network Rail decides to remove HAW access rights?

Question 3.3: Do you have any views on our proposal to remove modelled consumption rates for new train services from the beginning of CP7?

Chapter 4 – Station charges

Question 4.1: Do you have any views on our proposed approach to calculating LTCs for CP7, including on our proposed classification of a large/complex station i.e. Option B?

Question 4.2: Do you have any views on our proposed approach to setting LTCs for new stations in CP7 (and stations that have opened during CP6), such that the operational property element of their LTC is set at 10% of that for existing stations in the same route and station category for a fixed five-year period from the date of opening?

Annex 4: Market-can-bear analysis for passenger services - Report by Steer

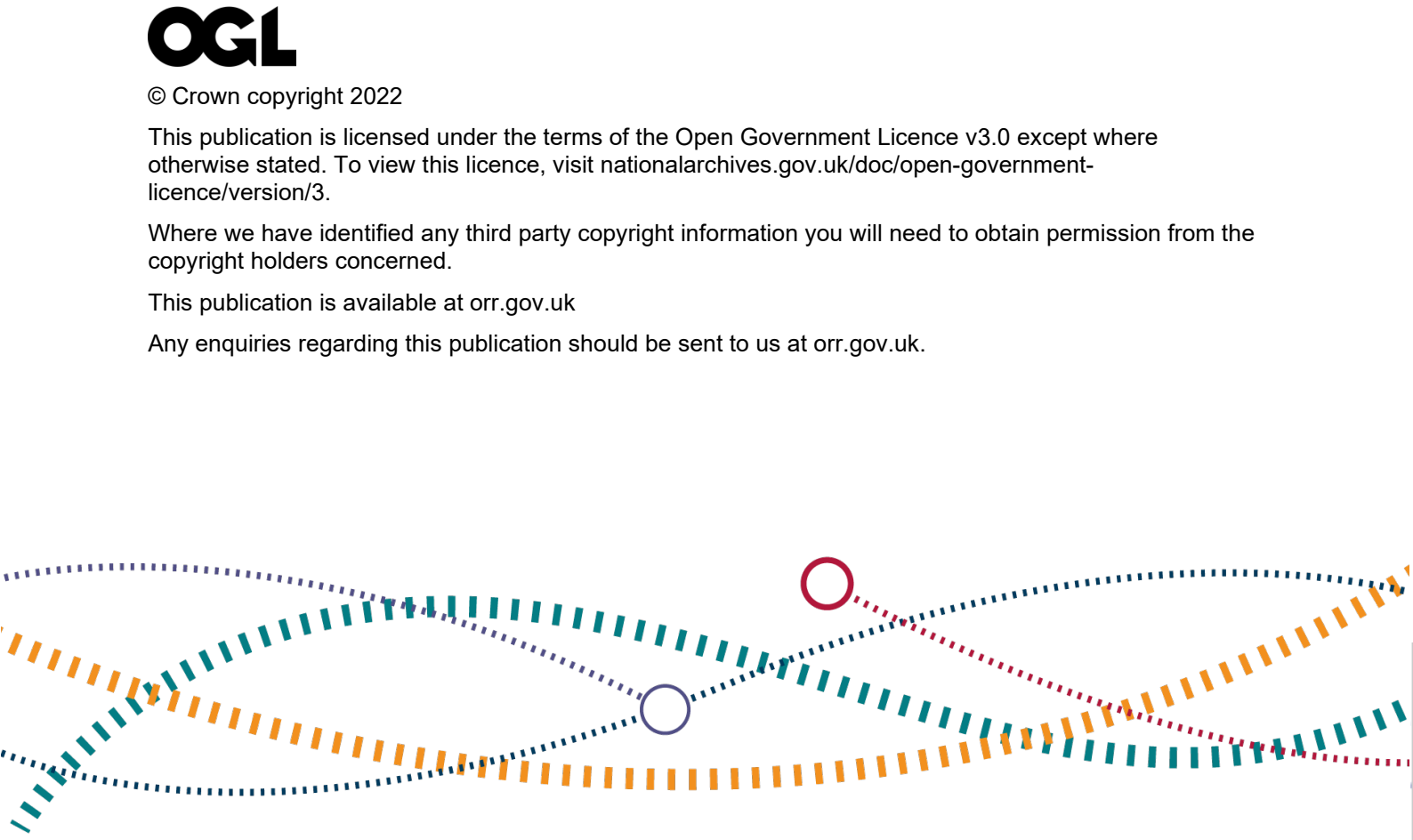
This report is published as a separate annex.

Annex 5: Market-can-bear analysis for freight services - Report by CEPA

This report is published as a separate annex.

Annex 6: Updated impacts of changes in track access charges on rail freight traffic - Report by MDS Transmodal

This report is published as a separate annex.



This publication is available at orr.gov.uk

Any enquiries regarding this publication should be sent to us at orr.gov.uk.