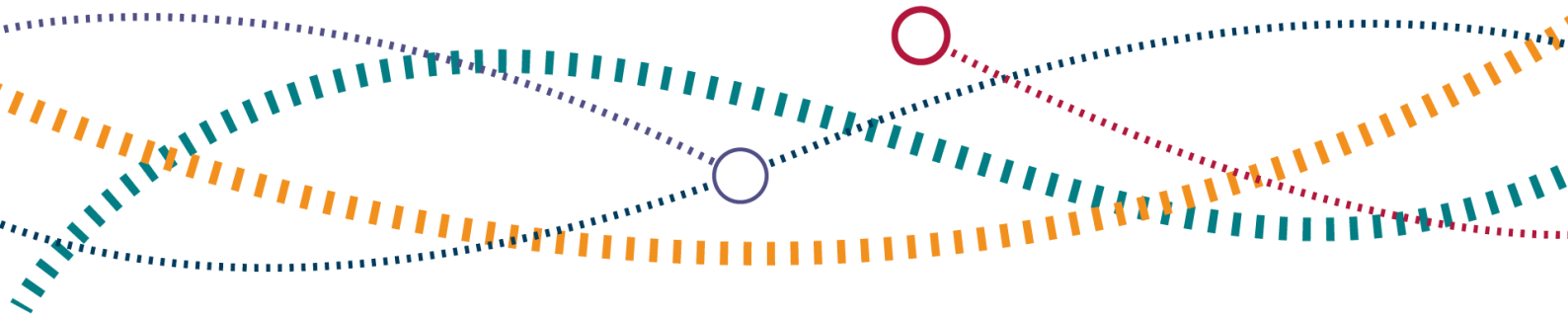
OFFICE OF RAIL AND ROAD

Rail access charges

Discussion paper

31 March 2025



Contents

Executive summary

Access charges are paid by passenger, freight and charter operators for use of Network Rail's infrastructure. These charges ensure that Network Rail recovers the costs of maintaining and renewing its infrastructure fairly from different users of the network (as well as from taxpayers).

The UK Government is consulting on 'A railway fit for Britain's future'. To support this, a new body will be created, Great British Railways (GBR). If the structure is implemented after consultation, responsibility for setting access charges paid by operators for use of the infrastructure would move from ORR to GBR, although GBR's decisions on charges will be appealable to ORR. GBR's own train services would not be required to pay access charges but non-GBR operators would pay charges that are set by GBR.

We have been working closely with government, Network Rail and the wider industry to consider transitional arrangements ahead of GBR assuming management of the access charging framework. As part of this, we are publishing this discussion paper which summarises the current framework and our work with the industry over the past year, including research commissioned from consultants into approaches to the setting and calculation of charges for the use of rail infrastructure. Our work is designed to support the industry as the development of the access charges framework moves to GBR.

Potential areas of work for a future review of charges

The access charges set in the 2023 periodic review of Network Rail (PR23) expire on 31 March 2029. This provides a four-year period from now to develop a new charging framework ahead of a new funding period, which under the proposed reforms would be for GBR to develop.

The UK Government's proposed reforms described in 'A railway fit for Britain's future' give the opportunity for a thorough review of the access charging framework and calculation methodologies. This could mean that some current approaches to charges change – for example, legislation may alter the framework for discounts, and GBR may choose to revisit the approach to quantifying and apportioning variable costs.

While some of the potential areas of work on charges that we identify may be succeeded by alternative approaches, this document summarises our engagement with stakeholders over the past year and explores potential work on the framework and calculation methodology. These will be relevant if elements of the existing regime are retained.

Through our experience in PR23, the stakeholder feedback since PR23 and the findings from independent reports by Frontier Economics and CEPA, we have identified the following potential areas to develop ahead of the next funding period. We present issues, opportunities and options, rather than firm proposals, in order to keep open options for consideration.

Policy framework

- Assessing the potential to simplify charges – following the proposed consolidation of many passenger operators into GBR, there may be an opportunity to streamline the charging framework and price list.
- Reviewing passenger and freight market segmentations – establishing whether market segments can bear mark-ups to contribute to fixed network costs.
- Establishing the approach to non-discrimination for fair treatment of non-GBR operators.
- Reviewing the current capping policy for the freight variable usage charge (VUC) – if the current legal framework was to change, there could be an opportunity to consider the current capping policy.
- Reviewing the policy on discounts in light of possible changes in legislation, which could widen the scope for discounts to help achieve governments' objectives for the railway.

Calculation methodology

- Reviewing existing models used in calculating charges, for example reviewing the engineering model used to calculate infrastructure costs – there is scope to consider stakeholders' concerns raised during PR23 about the model used to calculate variable costs.
- Updating the track damage formulae used to allocate direct costs to different rail vehicles based on their characteristics, taking account of any new evidence.
- Exploring the potential for an econometric approach to calculating access charges – this could include looking at whether an econometric approach can complement the existing engineering approach.
- Reviewing the timeframe to be covered by cost forecasts, to assess whether to use a long time horizon or a shorter period in the cost base for setting charges.

- Reviewing the fixed cost allocation methodology, which underpins the current fixed track access charge (FTAC), considering the rail reform context and opportunities for providing transparency over cost drivers.

Next steps

We will continue to work closely with DfT, Network Rail and industry parties in relation to transitional arrangements ahead of GBR assuming management of the access charging framework.

1. Introduction

1.1 As set out in the consultation, A railway fit for Britain's future, the UK Government is progressing a rail reform programme that will change the way the mainline rail network is managed in Great Britain. To enable this, a new body Great British Railways (GBR) is proposed which will own and manage the railway infrastructure and run passenger rail services. It is proposed that GBR will become the decision maker for access terms that are currently led by ORR. This will include the development and setting of the access charging framework which will move to GBR. Within the new framework, it is envisaged that GBR's own operators would not pay access charges but non-GBR operators would pay charges that are set by GBR for their use of GBR's network.

1.2 Access charges are paid by passenger, freight and charter operators for use of Network Rail's infrastructure. These charges ensure that Network Rail recovers the costs of maintaining and renewing its infrastructure fairly from different users of the network (as well as from taxpayers).

1.3 This discussion document provides information around the access charging framework to support in the transition to future arrangements under GBR. It reflects the engagement we have had with industry through the 2023 periodic review of Network Rail (PR23) and over the past year, as well as a programme of research, including two consultancy studies, into the basis of charging for the next funding period and beyond.

1.4 We began this work following the conclusion of PR23 and our commitment in our PR23 final determination policy position on access charges (paragraph 1.39) to work with stakeholders on reviewing the access charging framework and methodologies for setting charges. As part of this, we commissioned studies from Frontier Economics and CEPA.

1.5 In its report 'Options for changes to the rail access charging regime', Frontier Economics undertook a strategic review of options for how access charges could be set for the next funding period, considering the challenges raised by stakeholders in PR23. In its 'Study on using econometrics to calculate variable charges' report that accompanies our discussion document, CEPA assessed the suitability of using an 'econometric' (or statistical) approach to calculate variable usage charges, an approach that is widely used in Europe. These studies are further discussed in chapters 3 and 4.

1.6 In the subsequent chapters of this discussion document, we describe potential areas of work which have been identified through our engagement and research to date which could support the development of the future GBR charging framework.

2. The access charging framework

CP7 access charging framework

Overview of the current charging framework

2.1 The current principles of access charging (and exceptions to those principles), which underpin Network Rail's charging framework and specific charging rules, are established in Schedule 3 of the Railways (Access, Management and Licensing of Railway Undertakings) Regulations 2016 ('the 2016 Regulations').

2.2 Schedule 3, paragraph 1.4 of the 2016 Regulations stipulates that charges for the minimum access package[1] must be set to reflect "the cost that is directly incurred [by the infrastructure manager, i.e. Network Rail] as a result of operating the train service". Network Rail must calculate the charges for the minimum access package and access to service facilities in accordance with the Commission Implementing Regulation (2015/909)[2], which sets out further details on what qualifies as directly incurred costs.

2.3 In the year from 1 April 2023 to 31 March 2024, Network Rail received around £3.0 billion in access charges revenue (excluding Schedule 4 access charge supplement income), equal to 25% of its total income[3]. Network Rail's further income was made up of grant funding (around £8.3 billion) and other commercial income such as property rents (around £1.0 billion including Schedule 4 income). Enhancements to the network are funded separately and not through access charges.

2.4 Besides ensuring that Network Rail recovers an efficiently incurred level of costs from rail users, access charges serve a number of purposes. In particular, charges can provide incentives for operators to reduce network costs and make efficient use of the network. This is achieved by setting charges on a cost-reflective basis, so that operators face the direct costs that they cause (for example the wear-and-

[1] The minimum access package is described in Schedule 2 of the 2016 Regulations, relating to the services necessary to access the infrastructure.

[2] In accordance with section 6(7) of the European Union (Withdrawal) Act 2018, 'Commission Implementing Regulation (EU) 2015/909' of 12 June 2015 on the modalities for the calculation of the cost that is directly incurred as a result of operating the train service' is Retained EU Law.

[3] ORR analysis of Network Rail's Regulatory Financial Statements, 2023-24, Statement 2. The access charges revenue excludes income from Schedule 4 access charge supplements (£309 million). Passenger operators have the option to pay Network Rail an access charge supplement (ACS) and, in return, receive Schedule 4 compensation for disruption they experience as a result of planned possession activities for maintenance and renewals activities.

tear on the network, or the cost of electricity to power their trains).

2.5 The information revealed by charges can support better decision making by Network Rail and wider industry. Charges provide an impetus for Network Rail to attribute its costs to activities or network elements that cause those costs to be incurred, which improves the overall understanding of its cost structure and drivers.

2.6 This information is relevant to Network Rail's decisions on asset management, for instance on where there is greatest scope for cost efficiencies. It also provides funders and other rail authorities with greater transparency over the long-term cost implications of train service specifications.

CP7 charges – structure and scale

2.7 In CP7, the charging regime consists of three broad types of charges paid by operators:

(a) **Infrastructure cost charges (ICCs),** which recover a portion of the fixed costs of rail infrastructure, i.e. costs which do not vary with network use in the short-term.

(b) **Variable charges,** which recover costs that are directly incurred by Network Rail when train services are operated over its network.

(c) **Station charges,** which recover the costs of operating, maintaining and renewing the stations that are owned by Network Rail.

2.8 Table 2.1 summarises the current charging structure (which in CP7 is substantially unchanged from CP6 – the values in the table are for the last year of CP6).The majority of charges revenue is paid by public service operators (PSOs) which offer services commissioned or directly run by funders and devolved rail authorities. In 2023-24 the operators that will, in future, be non-GBR run paid £912 million[4] in charges – these operators comprise devolved PSOs (in Scotland, Wales, London and Merseyside), freight, open access and charter. In that year, the charges income from those operators that will in future not be part of GBR accounted for 30% of Network Rail's charges income, or 7% of gross revenue.

[4] From ORR's calculations using information in (non-published) Statement 6c of Network Rail's Regulatory Financial Statements, 2023-24.

Table 2.1 Summary of Network Rail's access charges in 2023-24

Charge		Paid by	Income (£ million, 2023-2024 prices)	Proportion of gross revenue in 2023-24
Fixed charges	Fixed track access charge (FTAC)	Public service operators	1,535	12.4%
	ICC for freight services	Freight operators carrying certain commodities	3	< 1.0%
	Open access ICC	Open access operators providing new interurban services	3	< 1.0%
Variable charges	Variable usage charge (VUC)	All operators	355	2.9%
	Electrification asset usage charge (EAUC)	All operators of electrified services	23	< 1.0%
	Traction electricity charge (EC4T)	All operators of electrified services	719	5.8%
Station charges	Station long term charge (LTC)	All passenger operators	292	2.4%
	Qualifying Expenditure (QX)	All passenger operators at managed stations	115	< 1.0%
Total charges income			**3,045**	**24.6%**
Grant income		Government funding	8,331	67.3%
Other income*			994	8.0%
Total income			**12,370**	**100%**

Source: Analysis of Network Rail's Regulatory Financial Statements, 2023-24, Statement 2, page 24

* Other income includes: Schedule 4 access charge supplements, franchised stations lease income, facility charges and other single till income.

Rail reform and access charges

2.9 In its reform consultation, the UK Government proposes that a new access framework will be established in primary legislation and that GBR will take access and charging decisions. Within these new statutory duties GBR "will have a clear remit set in statute empowering it to focus on delivering national benefits, including

promoting rail freight", such that it will be able to consider the whole of the railway when planning and managing access and access terms. These changes will mean that the provisions in the 2016 Regulations "will no longer apply to GBR and the GBR network". ORR will have "a robust and independent appeals function, set out in legislation", meaning that GBR's charges decisions can be appealed to ORR.

2.10 Under the new arrangements, it is planned that legislation will set the parameters for the objectives of the charging framework which would include a requirement for GBR to ensure charges at a minimum cover the costs directly incurred. The UK Government will place in primary legislation the necessary rules and protections on charging for non-GBR operators which, in addition to including requirements on the costs directly incurred, would enable operators to plan their businesses with reasonable assurance.

2.11 The reform consultation sets out that GBR will develop and consult on an access and use policy that will provide the framework for charges that will apply to non-GBR operators. This will include charging principles and methodologies for how charges are calculated. There will be a requirement for GBR to account for the costs of providing rail infrastructure by recording the costs of its own train services using the network. This will be undertaken to "ensure transparency and provide non-GBR operators with the confidence that the charges they pay are both fair and non-discriminatory". The access and use policy is expected to outline how GBR will collaborate with all parties, including devolved leaders, to deliver social and economic benefits.

2.12 Two of the UK Government's aims with reform are to support freight growth and decarbonise the railway. The reform consultation highlights that one mechanism that could support these aims is to widen the scope for GBR to offer targeted discounts to non-GBR operators to help deliver these strategic goals.

2.13 Access charges in non-GBR operators' track access contracts are expected to expire at the end of CP7 on 31 March 2029. Unless the access charges are rolled over into the next funding period – which would still require contractual implementation – the charging framework will need to be reviewed and new charges set by 1 April 2029.

Stakeholder feedback on the current framework

2.14 In our PR23 final determination: policy position – access charges (paragraph 1.14), we identified some potential methodological issues with the setting of charges that would be appropriate to resolve ahead of the next control period.

2.15 For example, freight operators have continued to express concerns about the perceived complexity and lack of transparency in the Vehicle Track Interaction Strategic Model (VTISM), an engineering model whose output is used to calculate VUCs. VUCs are intended to recover 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. VUCs are calculated to reflect the relative damage that each vehicle causes to the network, with vehicles causing more damage incurring a higher VUC.

2.16 As part of PR18, we commissioned Arup to assess whether the way Network Rail uses VTISM and applies its output in calculating VUCs was appropriate. Arup concluded that VTISM was used in a reasonable way. In PR23, we reassessed the methodology Network Rail used to recalibrate VUCs and concluded that it was reasonable.

2.17 In PR23, we observed that VTISM produced a higher average VUC for freight customers than had applied in CP6. This was despite freight traffic being largely unchanged since before the pandemic and therefore causing roughly the same amount of damage to the track infrastructure. In addition, stakeholders perceived a lack of clarity around the cost base, the treatment of efficiency and a lack of predictability of certain charges such as EC4T (a charge paid by all operators of electrified services to recover the cost of supplying electricity for traction). They also questioned the purpose and complexity of the ICCs.

2.18 Some stakeholders also raised concerns that the current charging framework does not accommodate environmental objectives. They highlighted the potential for access charges to play a role in this area, for example by providing a financial incentive for using more environmentally-friendly modes of traction on the network such as hybrid or electric. However, the current 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.

2.19 In 2024 we commissioned Frontier Economics to examine options for approaches to charges for the next funding period and beyond. Its report, 'Options for changes to the rail access charging regime', emphasises the value that train operators place on stability and clarity – notably in having a charging methodology adopted for the next control period as early as possible in the price control review.

2.20 Over the past year we also held workshops for passenger, freight and charter operators to gather their views about the objectives of a charging framework, the

above-mentioned methodological issues (in particular related to VUCs, ICCs and EC4T) and potential solutions. Annex A provides a summary of stakeholders' views on the CP7 charging framework and their expectations from future reviews.

2.21 Through this engagement, we identified the following as stakeholders' priorities for a new access charging framework:

- simplification of access charges (see paragraphs 3.5 to 3.9);
- the ability to align charges with wider policy goals (not to be restricted to recovering directly incurred costs, and reviewing the policy on discounts – see paragraphs 3.32 to 3.36);
- maintaining non-discriminatory treatment of operators (paragraphs 3.22 to 3.25);
- affordability of access charges (paragraphs 3.26 to 3.31); and
- encouraging investment.

Potential future framework for charges

2.22 The new access charging framework proposed in the UK Government's reform consultation will be guided by primary legislation, which will enable GBR to take on statutory duties for access and charges.

2.23 Legislation and structural reform give an opportunity to review the access charging framework and calculation methodologies. This could mean that some current approaches to charges change – for example, legislation may alter the framework for discounts, and GBR may choose to revisit the approach to quantifying and apportioning variable costs. While some of the potential areas of work we identify may be succeeded by alternative approaches, the following chapters explore potential work on the framework and calculation methodology. These would be relevant if elements of the existing regime are retained.

3. Policy framework

3.1 In this chapter, we discuss the areas of work identified during PR23 and our subsequent engagement with stakeholders related to the charging policy framework. We discuss the areas related to the calculation methodology in chapter 4.

3.2 The report we commissioned from Frontier Economics suggested some policy areas to improve on the current access charging regime, namely:

- opportunities to evolve the legislation underpinning access charging to support broader policy goals, such as carbon reduction and safety improvements, while maintaining industry stability;
- providing clarity on the objectives of the charging framework, including how it achieves the balance between cost recovery and efficient use of the network;
- early consultation with operators on pricing methodologies during the review process has several benefits including enabling operators to understand the impacts of potential changes to access charges on their businesses; and
- consideration around enhancing transparency of Network Rail's cost calculations and providing mechanisms for operators to challenge these costs would help address stakeholder concerns around the perceived lack of visibility of the calculation of direct costs.

3.3 Frontier Economics also highlighted practical issues involved in setting charges and possible approaches that could be taken to resolve these. These included the choice of timeframe for charges, inflation adjustments, real price effects and adjustments based on the difference between forecast and actual traffic and efficiency. Key points raised by Frontier Economics are captured in the sections that follow and in chapter 4.

3.4 In this chapter, we highlight potential areas of the charging policy framework for review, based on engagement with industry, the Frontier Economics report and our other work to date.

Assessing the potential to simplify charges

3.5 During PR23, stakeholders questioned the complexity, transparency and incentive properties of access charges. The new industry structure following rail reform may

create opportunities to simplify the access charging framework.

Variable usage charges (VUCs)

3.6 Some passenger and freight operators have expressed the view that the classification of VUCs may be too granular, with around 1,800 different vehicle type-specific VUCs currently on the price list. Some questioned the purpose of such a granular breakdown, as they thought it had limited impact on behaviours or choices. While recognising the importance of cost reflectivity that comes with this granularity in VUCs, stakeholders supported efforts to simplify the VUC price list.

3.7 Simplification could include an approach that would group similar vehicles together into 'bands' and averaging within bands, and the removal of rates from the price list for vehicles that are no longer in use. Simpler price lists are used by infrastructure managers in some other countries, in which vehicles are grouped by market segments and/or weight classes but are not sub-divided to the level of individual vehicle types.

3.8 In considering options, it would be useful to consider evidence on the potential loss of cost reflectivity and incentive properties, which is a trade-off for the benefits of simplification. However, this loss of incentive properties would be of lesser magnitude in a future industry structure in which there are far fewer operators paying charges.

3.9 Some stakeholders also stated that they would like to see a clearer and more transparent methodology for calculating VUCs. Options for this are covered in chapter 4.

Station charges

3.10 Network Rail is the ultimate owner of most of the stations on the mainline network. It is the station facility owner, the party responsible for day-to-day maintenance, renewal and operation of stations, for 20 large 'managed' stations, while train operators are the station facility owner for the large majority of other stations.

3.11 Currently there are two station charges:

- The station long term charge (LTC) is levied on station facility owners by Network Rail to recover the costs of maintaining and renewing stations. In turn, station facility owners can recover appropriate proportions of the charge from station beneficiaries.

- Qualifying expenditure (QX) recovers the day-to-day running and operating

costs of stations, such as cleaning and utilities, and also includes a management fee covering central support costs and a profit margin. QX is levied by the station facility owner on all train operators that stop at the station.

3.12 The UK Government's reform consultation proposes that GBR will own and manage the large majority of stations, which would imply it being the station facility owner for these stations (not just the 20 large stations that Network Rail manages today). It will also be the main operator at most stations.

3.13 Therefore, there is a case to explore simplification of station charges, particularly in the context of far fewer operators paying station charges in a reformed industry. Currently there are 30 LTCs (six categories in each of the five Network Rail regions), and one option is to reduce the number of LTC station categories to simplify the pricing structure. This could be by removing the differentiation by region or through consolidating the number of station categories. A further option is to explore merging LTC and QX to form a combined charge for maintaining, renewing and operating stations, levied by GBR on non-GBR operators that stop at the station.

3.14 These options would provide a simpler and potentially clearer charge for stations – thereby reducing administrative cost for both GBR and non-GBR operators. This may make charges less cost-reflective and potentially aggregate otherwise useful information about the costs of different activities.

Reviewing passenger and freight market segmentations for potential mark-ups

3.15 Network Rail currently recovers some of the fixed costs of rail infrastructure (those costs that do not vary with network use in the short-term) through fixed charges. For open access and freight services, these charges are known as infrastructure cost charges (ICCs). Under the 2016 Regulations, ICCs can only be levied on market segments which can bear a 'mark-up' over variable costs. These segments are determined through a 'market can bear' test.

3.16 In PR23, ORR updated its market can bear analysis for the passenger and freight sectors. ORR's review resulted in ICCs being applied to a limited set of passenger segments (inter-urban services and services to major airports) and certain freight commodities (services transporting energy supply industry (ESI) coal, iron ore, spent nuclear fuel, and ESI biomass).

3.17 Stakeholders raised a number of points in relation to ICCs:

- In passenger markets, the 'interurban' segment is defined in a relatively simple way, based on station entries and exits. However, some operators said that this definition does not differentiate between profitable and unprofitable flows, with services that do not involve a London terminus being less profitable. They said consideration could be given to applying a different level of ICC to different services, rather than applying a standard rate.
- The interurban segment definition may overstate the number of interurban passenger station entries and exits, as some stations could be dominated by shorter journeys and therefore many entries and exits may not relate to interurban journeys.
- Network Rail said that ICCs do not reflect its total avoidable fixed costs in relation to open access and freight services, or services' full ability to pay (e.g. the airports market segment).
- Freight stakeholders were generally content with the current market segmentation, and sought to avoid any additional granularity.

3.18 The points raised by stakeholders highlight a range of available policy options between: a disaggregated and more complex system, based on more granular market segments and more precise calibration of mark-ups; and a more aggregated system with market segments and mark-ups that are simpler to define and calibrate, but may be less precise and cost reflective.

3.19 In a future charging framework, guided by forthcoming legislation, the approach to fixed cost recovery will be an important policy question. Fixed cost recovery will need to balance the importance of operators contributing to fixed cost recovery where they can afford to do so, thus creating a level playing field, against the impact of higher charges on operator viability. Mark-ups above variable costs would add to the costs of serving freight and passenger segments by non-GBR operators, and may in turn impact future traffic volumes.

3.20 In a future structure it will be relevant to consider the approach to determining market segments and applying mark-ups to services. In any review it will be important to consider changes that have occurred including:

(a) in passenger markets, a review of current passenger market segment definitions and forecast net revenues, which will provide an indication of the mark-up that can be borne while continuing to operate profitably; and

(b) in freight markets, identification of major new freight commodity flows and any potential disaggregation of existing commodity flows, and any new evidence concerning freight's ability to bear a mark-up, for example demand elasticities and the impact of distances hauled.

3.21 For passenger services, phasing-in is at present a key feature of ICCs. Currently new open access services pay no mark-ups in the first two years of operation, before paying 25% of the charge in year 3, 50% in year 4 and 100% in year 5. The phasing-in allows for new operators to establish their operations and grow revenues to the point where they can bear mark-ups. If a similar system of mark-ups for the recovery of fixed costs is retained in a new charges framework, the phasing-in of mark-ups for new open access services may be considered, including the current phasing-in profile.

Establishing the approach to non-discrimination

3.22 The UK Government's reform consultation recognises the importance of providing non-GBR operators with the confidence that they are being treated in a fair and non-discriminatory way.

3.23 Non-discrimination implies equivalent treatment of parties that perform services of an equivalent nature. As would be expected, attendees at our post-PR23 passenger and freight workshops expressed a desire that any changes to the access charges regime would still ensure the fair and non-discriminatory treatment of different operators.

3.24 Awareness of the costs of providing rail infrastructure, and of the revenues and costs of operating train services, would enable GBR to set charges in such a way that meets the expectation of non-discrimination. Such considerations around the provision of access on non-discriminatory terms are common in other infrastructure sectors and some other countries' rail markets. GBR may also need to consider the situation where, for some rail flows, fares revenue is insufficient to cover access charges and other costs of operating passenger services, which would complicate how GBR demonstrates the fair treatment of non-GBR operators.

3.25 As the reform consultation notes, the publication of relevant information will help to ensure transparency and fair treatment. A comprehensive awareness of GBR's infrastructure and train service costs will also enable it to make well-informed whole system decisions. Developing the cost apportionment process and the information to be published will therefore be an important aspect of GBR's access

and use policy. Making available information in reviewed and audited accounts would help to provide the necessary assurances to non-GBR operators.

Reviewing the current capping policy for freight VUCs

3.26 The VUCs currently paid by freight operators are subject to a 'capping and phasing-in' policy, which means that freight operators' VUC rates are lower than cost-reflective rates. As explained in our PR23 final determination policy position on charges (chapter 3), we maintained capping arrangements for freight operators' VUC rates in CP7, instead of increasing to new higher cost-reflective rates. We estimated that this decision avoided freight operators paying around £33 million relative to what would be paid if VUCs were charged at the full direct cost. (The decision also affected charter operators, and the discussion in this section should be read as also applying to the charter sector.)

3.27 In our engagement, freight operators have expressed concerns about what they perceive as unaffordability of uncapped rates.

3.28 In PR23, we said that in order to be compatible with the prevailing legislative framework, the remaining caps on freight VUC rates would be unwound over CP8, so that rates would be fully cost-reflective by the end of CP8. As such, freight operators are on a pathway to paying the directly incurred cost of network use by the end of CP8. While DfT supported our capping policy, Transport Scotland and Network Rail advocated for the implementation of cost-reflective VUC rates.

3.29 The approach taken in PR23 was guided by the 2016 Regulations, which require that the costs directly incurred must be recovered from train operators, and that any caps on variable charges must be time-limited. As the UK Government's reform consultation proposes that the 2016 Regulations will not apply to GBR, there is scope for this capping policy to be reviewed.

3.30 The UK Government's reform consultation emphasises the importance of rail freight growth, and we anticipate GBR will set freight growth targets consistent with funders' ambitions.

3.31 During PR23, we analysed the relationship between freight growth and charges, to ensure that the freight growth targets set in our final determination were consistent with the charges trajectory (see MDS Transmodal's report, 'Updated impacts of changes in track access charges on rail freight traffic'). Similar updated analysis is likely to be useful in quantifying the impact of any future policy choices such as

capping and phasing-in and in considering policy trade-offs between cost recovery and other objectives (such as freight growth or modal shift).

Reviewing the policy on discounts

3.32 Some operators, particularly in the freight sector, told us that they would like a system in which access charges can be discounted with fewer restrictions, in order to reflect governments' policy objectives such as reducing carbon emissions and promoting freight growth.

3.33 Network Rail has introduced a discounts policy in CP7, allowing operators to apply for access charges discounts, in line with the current legislation. Under this policy, Network Rail provides seven rail periods of discount on VUCs and the electrification asset usage charge for the introduction of a new service, where specific qualifying criteria are met.

3.34 The UK Government's reform consultation proposes to widen the scope where discounts can be offered, so that GBR has additional levers in its control to deliver governments' strategic goals. It proposes that discounts would come from existing budgets, or would be cost neutral in that discounts would be funded from the additional charges paid by increased usage.

3.35 The transition to GBR may provide an opportunity to review the future policy in light of the new legislative framework from rail reform. For example, as part of its access and use policy, GBR could consider how discounts can be used to support broader policy objectives, and consider the scope, duration and amount of discounts.

3.36 Our experience is that commercial operators place a premium on certainty and transparency, and so in the interests of investment and growth there would be value in signalling the direction of travel on discounts well in advance of the start of the next funding period.

4. Calculation methodology

4.1 In addition to the areas of work on the overall access charging framework identified in chapter 3, there are more technical areas of the calculation methodology that may be considered as part of a future access charges review.

4.2 Under the current legal framework, the costs directly incurred by an infrastructure manager to maintain and renew the network must be recovered from train operators. These costs form the basis of VUCs, which are paid by operators depending on the vehicles that they run. This in turn requires that the relevant direct costs need to be identified, and consideration given to how to estimate them. Currently, costs directly incurred which have to be recovered through the VUC are defined in the 2016 Regulations and the Commission Implementing Regulation EU 2015/909. Under the UK Government's rail reform proposals, this legislation will not apply to GBR.

4.3 Our engagement with stakeholders suggested some disagreement about what cost items qualify as 'costs directly incurred'. The legislative change provides an opportunity to review these costs providing transparency and clarity on what costs go into the calculation of direct costs. The nature of the review will depend on the cost concept set out in legislation.

Reviewing existing models

Vertical Track Interaction Strategic Model

4.4 At present, Network Rail's marginal costs are quantified using an 'engineering' approach, using the Vehicle Track Interaction Strategic Model (VTISM), a model owned by the Rail Safety & Standards Board (RSSB). VTISM is used by Network Rail for planning maintenance and renewals, but also helps to establish the underlying variable costs as an input to VUCs.

4.5 VTISM outputs are used in Network Rail's VUC model, alongside forecast traffic, to produce a single average rate per thousand gross tonne miles. The single average rate over the five-year control period is apportioned between vehicle types based on a track damage formula (see section below), to reflect the wear and tear each vehicle causes to the network.

4.6 In PR23 it was found during the calculation of VUCs that the costs calculated from VTISM apportioned to freight services would have resulted in a higher average VUC for freight customers than had applied in CP6. This was despite freight traffic

being largely unchanged since before the pandemic (and therefore causing roughly the same amount of damage to track infrastructure).

4.7 Calculating charges on the basis of analysis of track damage is a complex area. Nevertheless, stakeholders have raised concerns around the complexity of VTISM, and a perceived lack of transparency around the model which has led to a lack of understanding of its outputs.

4.8 When GBR is formed and takes on responsibility for access charges, it may seek to evaluate different approaches to estimating marginal costs. If VTISM is retained, one measure proposed by stakeholders is to review and make clearer the assumptions in the model, and the impact of these on costs and charges. This would allow for industry challenge of the validity of those assumptions. For example, as suggested by CEPA, GBR could explore the calculation of separate national passenger and freight usage charge rates. This would address the issue that the current mechanics of the model lead to results where large changes in passenger traffic drive material changes in freight charges and vice versa.

4.9 Another consideration is to publish a guide that explains VTISM and the updated calculations in straightforward and accessible terms. This could supplement the existing process through which VTISM is audited and tested, and could address the perception of some operators that VTISM is a 'black box' whose inputs and workings are not understood.

Track damage formulae used to allocate direct costs to different rail vehicles

4.10 Network Rail uses 'track damage' formulae to allocate variable usage costs to individual vehicles, based on these vehicles' characteristics. The formulae estimate individual vehicles' wear-and-tear impact according to their weight, speed and 'unsprung mass'. Rates are averaged across the network as a whole, resulting in a single price for each permutation of vehicle type and commodity across the network. Typically, heavier and faster vehicles incur a higher VUC, reflecting the relatively higher levels of damage that they cause to the network. The existing damage formulae were last reviewed in 2012.

4.11 It is important that the track damage formulae are accurate, in order that variable usage charges provide the right incentives for operators to use more track friendly vehicles, and to ensure that Network Rail (and in future GBR) is accurately recompensed for the wear and tear resulting from traffic on the network.

4.12 GBR may seek to carry out a fundamental review that evaluates different

approaches to estimating and allocating costs. However, if track damage formulae are retained in new charging models, then we have discussed with Network Rail the value in reviewing and updating the track damage formulae in advance of the next review of charges. This work would include assessing the validity of the assumptions used in the engineering models as well as the sensitivity of charges to changes in such assumptions and inputs.

Econometric approach to calculating marginal costs

4.13 During PR23, and in our stakeholder workshops after the periodic review, some stakeholders suggested that we explore the use of an econometric (also known as a 'statistical') model to complement or sense-check the results from VTISM. Econometric approaches to cost estimation are referenced alongside engineering methods in the Commission Implementing Regulation EU 2015/909 and versions of this approach are widely used in rail markets in the European Union. We therefore commissioned CEPA to assess the suitability of using an econometric approach to calculate VUCs, and to compare its results with the current price list based on inputs from VTISM.

4.14 CEPA produced a regression analysis of maintenance and renewals costs, which estimated the marginal costs of rail traffic. Its analysis was at the level of Network Rail's maintenance delivery units (MDUs) for maintenance and regions for renewals, and it separately estimated the relationship between costs and traffic for passenger and freight flows. CEPA reported its findings in the accompanying report 'Study on using econometrics to calculate variable charges'.

4.15 CEPA concluded that the econometric approach should not yet be used in setting access charges in Great Britain. CEPA built what it considered to be a robust and credible model for maintenance costs. However, it found there is currently insufficient data on which to build a robust and credible econometric model for renewals costs.

4.16 CEPA proposed the creation of a consistent tonne-km traffic dataset over at least the past ten years, to enable a like-for-like comparison between the VUCs generated by the engineering approach and an econometric approach. CEPA also proposed that Network Rail could collect data on renewals costs and renewals cost-drivers, including traffic and network characteristics, at a sub-regional level in a format that could be used in an econometric model.

4.17 CEPA's work has demonstrated the potential for an econometric approach, with scope to complement or sense-check an engineering approach. However, we

recognise that the development of any alternative method of calculation of VUCs would be for GBR to establish – and may, or may not, include alternative (e.g. econometric) approaches.

Long-run vs short-run cost forecasts

4.18 One matter raised in our stakeholder engagement was the timeframe over which the costs underpinning charges are estimated. Access charges based on long-run costs are likely to differ from those based solely on costs incurred in the short-run. This is because short-run costs only consider the use of the network over a limited timeframe such as the five-year control period, whereas long-run costs will consider the maintenance and renewal of the network that may occur over a longer time period.

4.19 One perspective is that the costs incurred by the infrastructure manager while operating the network should reflect those that would arise if the mix of maintenance and renewal activities is that which minimises the total lifecycle asset costs, while maintaining safety and performance standards. As Network Rail's assets are typically long-lived, identifying direct costs over the long-run may be appropriate from a conceptual perspective.

4.20 However, projecting beyond a five-year control period introduces uncertainty, as the scope and outcome requirements are not defined, and neither is funding, most of which is provided by governments and varies from control period to control period. The longer the time horizon used, the more uncertainty there is on fundamental cost drivers such as traffic, input prices, efficiency and network scope.

4.21 Some stakeholders expressed support for a long-run approach, as it matches the long time horizon over which assets must be maintained and renewed. Conversely, some parties questioned its appropriateness, given that funding and outputs are based on a five-year settlement, and a five-year estimate of projected costs is likely to be more accurate than a forecast over a much longer time horizon.

4.22 We consider there is value in considering this matter as part of the next charging review ahead of the next funding period. A review could look at approaches developed in other infrastructure sectors with long-lived assets, such as energy, water and aviation. Additionally, impacts on GBR's revenue from any change to the forecasting timeframe could be considered.

Reviewing the fixed cost allocation methodology

4.23 Network Rail currently levies a fixed track access charge (FTAC) on public service operators, which recovers some of Network Rail's fixed costs (the remainder being paid for by government grants). An input to the calculation of FTAC is the allocation of fixed costs to operators. Under the current process, fixed costs are estimated for each route section, and traffic-related avoidable fixed costs are allocated to train operators based on forecasts of the traffic they will run. Income from other charges and grant income is then deducted, to calculate each operator's FTAC.

4.24 When GBR is formed, it is proposed that GBR's services will not be required to pay access charges, but devolved bodies' passenger services may still be expected to pay FTAC or its replacement. These devolved bodies will remain interested parties in the methodology for allocating fixed costs. In addition, open access and freight operators may pay infrastructure cost charges (or a replacement charge) as a contribution to fixed costs. The reform context will provide an opportunity for GBR to review the calculation methodology for fixed charges. As part of a review, the cost-reflectivity of fixed charges could be investigated to more closely reflect the drivers of costs in terms of different service characteristics.

Annex A: Summary of stakeholders' views on charges

A.1 Following PR23 we began a programme of work to scope and assess stakeholder views on access charges. We envisaged that this would form the basis of establishing a work programme ahead of CP8.

A.2 This annex provides a summary of stakeholders' views on the CP7 charging framework and their expectations from future reviews.

A.3 The findings of ORR stakeholder access pricing workshops: report by Frontier Economics provides an overview of the key stakeholder views voiced in workshops we held with passenger and freight operators in September 2024.

A.4 Charter operators access pricing workshop – work summary provides a similar overview for the workshop we held with charter operators in early October 2024.

A.5 Stakeholder views are summarised in the table below.

Type of operator	Key concerns and views expressed by stakeholders
All Stakeholders	• Desire for alignment with wider policy goals such as decarbonisation and rail freight growth. • Support for maintaining non-discriminatory treatment of operators, reducing administrative burdens, and encouraging investment. • Simplification: support efforts to simplify VUC calculations, including the consideration of banded or marginal cost approaches, and removing obsolete prices from the price list or merging station LTC and QX. • Need for transparency: calls for scrutiny of Network Rail's cost modelling and assumptions. • Review of EC4T charges: concern over the lack of predictability of the wash-up mechanism due to volatile electricity prices, acting as a disincentive for electric traction adoption.
Freight Operators (and Charter	• VUC affordability: concerns over rising VUC levels due to Network Rail's rising cost base each control period, seen as unaffordable and jeopardising commercial viability of freight rail

on VUCs)	compared to stable costs in road freight. • VUC predictability: fluctuating caps hinder long-term planning. • Limited incentive: VUC is not a significant motivator for improvements in efficiency, safety, or environmental performance, given it represents a small proportion of total costs. • ICC charges: seen as a barrier to growth, with concerns that traffic losses outweigh revenue raised. • Transparency: issues around cost allocation between passenger and freight services.
Passenger Operators (Public Service Operators & Open Access)	• VUC complexity: although manageable for experienced staff, complexity of getting new rates hampers the introduction of new rolling stock, leading to lengthy processes. • ICC simplification: need for transparent, predictable, consistent ICCs. • Propose segmenting ICCs based on geography, such as higher charges for London flows and lower charges for non-London flows, with different phasing-in periods (e.g. four years for London, five years for non-London). This reflects differing market conditions and could ensure fairer treatment across regions. • Disproportionate impact: open access operators worry that ICC changes might unfairly affect them compared to public service operators.

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