



Evidence gathering on the effectiveness of PR08's incentives regime
Tender reference: ORR/CT/13-51

FINAL REPORT

7th April 2014

Prepared for:

The Office of Rail Regulation
One Kemble Street
London
WC2B 4AN

Prepared by:

Credo Business Consulting LLP
12 Arthur Street
London
EC4R 9AB

NOTICE

This report has been prepared by Credo Business Consulting LLP (“Credo”) on the basis of the Agreement signed with the Office of Rail Regulation, One Kemble Street, London WC2B 4AN (“ORR”) on the 13th February 2014.

This report has been prepared solely for the benefit and information of the ORR and any parties mentioned in the Agreement. We will not accept responsibility or liability to any other party to whom the report may be shown or who may acquire a copy of the report.

All surveys, observations, analysis and forecasts contained in the Report have been made on the basis of the information available at the time of the assignment and has been prepared as at 31st March 2014. We have not undertaken to update our report for events or circumstances arising after that date. Credo cannot be liable for any subsequent changes.

In preparing the report, Credo relied upon, and assumed the accuracy of, information obtained from a variety of sources, including but not limited to: interviews and workshops with Network Rail, Train Operating Companies, Freight Operating Companies, Industry Associations, Suppliers to Network Rail, industry experts, Rail Funding Authorities, Rolling Stock Owners and Train Manufacturers. We have made selected use of financial, government and economic statistics and forecasts; management statements and estimates; published market research; published academic and economic research and public filings of financial information. Credo accepts no responsibility and will not be liable in the event that information provided to Credo during the course of the assignment from such sources and relied upon by Credo is subsequently found to be inaccurate.

Individuals consulted during the evidence gathering activity have been given the opportunity to validate the factual accuracy of their discussions with Credo. This has been done post interview rather than at the report stage to preserve anonymity of evidence presented in our final report. Where individuals have made erroneous statements about the workings of the charges and incentives regime, we have not sought to correct these views but highlight them to the reader as potentially erroneous.

The Report comprises information upon the UK Rail market, within the Specification of Services described in the Agreement. Save as aforesaid, Credo does not give any representation or warranty (express or implied) of the accuracy or completeness of the Report.

Table of Contents

Notice	2
Executive Summary	4
1 Introduction	7
1.1 Project Objectives and Scope.....	7
1.2 Description of Charges and Incentives	9
1.3 Methodology for Gathering Evidence	12
2 Individual Charges and Incentives	13
2.1 Variable Usage Charge	13
2.2 Traction Electricity Charge and Electrification Asset Usage Charge.....	19
2.3 Schedule 8.....	25
2.4 Volume Incentive.....	35
2.5 Capacity Charge	38
2.6 Schedule 4.....	43
2.7 Fixed Track Access Charge.....	51
2.8 Station Long Term Charge	54
2.9 Freight Only Line Charge.....	57
2.10 Coal Spillage Charge.....	59
2.11 Efficiency Benefit Sharing Mechanism and REBS	61
3 Themes	66
3.1 Complexity	66
3.2 Calibration of rates and benchmarks	66
3.3 Franchise protection	66
3.4 Engagement with the Periodic Review Process.....	67
3.5 Innovation	67
3.6 Relationship between Network Rail and TOCs.....	68
3.7 NAO change (decision to record NR's accounts as part of the Treasury).....	68
4 Observed Behaviours and Drivers	69
4.1 Network Rail.....	69
4.2 Train Operating Companies.....	70
4.3 Freight Operating Companies	71
4.4 Conclusion.....	71
5 Appendix A: Understanding and Impact of Charges and Incentives	72
5.1 Calibrated responses.....	72
6 Appendix B: Drivers of Behaviour in Other Regulated Sectors	81
6.1 Water	81
6.2 Electricity Distribution.....	83
6.3 Fixed-line Telecommunications.....	85
6.4 Conclusion.....	87
7 Appendix C: Glossary	88

EXECUTIVE SUMMARY

This study has considered only the charges and incentives in place in CP4. Certain charges or incentives have been significantly modified for CP5 and it is anticipated that their incentive effect will adjust accordingly.

The charges are designed to recover costs and are consistent with the requirements of European Legislation. The interests of the passenger are captured in other elements of the regulatory regime, e.g. the performance regime.

The level of understanding of the charges and incentives (C&Is) is strongest in those entities for whom it has the greatest impact, in order that would be: NR, FOCs, TOCs, funders, contractors and ROSCOs.

C&Is do have some bearing on business decisions but other operational concerns are of greater importance for NR and the TOCs. The FOCs however feel more exposed to charges as they can have a material impact on financial decisions, in particular they feel vulnerable to the swings in S8 charges resulting from delays attributed to them.

The C&Is were generally seen as effective at: recovering costs, allocating costs to those that caused them to arise and less so, at providing incentive to NR to outperform their determination. The charges were seen to be much less effective at minimising industry costs or driving more efficient use of the network, not least due to the burden of administering the system

The factors limiting the effectiveness of charges were seen to be, in order of significance: other market forces or corporate priorities (e.g. financial or reputational drivers); complexity (which hampered understanding and therefore application in operational situations/ decisions); low materiality; TOCs being largely held harmless to the impact of charges.

Variable Usage Charge

The incentive properties of this charge are directed principally at TOCs/ FOCs. Decisions on rolling stock are often made at the bid stage of a franchise, even then, other factors appear to take precedence over the quantum of the VUC i.e. vehicle capacity and availability. There were limited examples of TOCs making rolling stock modifications to take advantage of a reduced VUC but sometimes the cost of modification was not generally seen to outweigh the benefit of a reduced charge, especially if it cannot be recouped over the franchise term. The charge is a consideration when introducing new services during the franchise but it can be relatively insignificant compared to other business case drivers, except in marginal cases.

FOCs stated that the VUC was never a deciding factor in rolling stock selection, being too small and of low relevance to asset decisions being taken over a 30 years lifecycle (compared to charges which were liable to change at each 5 year control period). However, modifications have been made to fleet to take advantage of a lower VUC.

EC4T and EAUC

The incentive properties of the EC4T charge were felt particularly strongly by TOCs, who bear this price risk unlike most other charges, and to a lesser degree, the FOCs. The key behaviours EC4T has driven are driving techniques (to reduce consumption) and on-board usage monitoring/ metering; train temperature and the use of heating; stopping patterns (acceleration/ deceleration); regenerative braking. Metering is leading to a fairer allocation of NR's electricity bill, NR is hopeful that during year 1 of CP5 metered consumption will increase to 50% though TOCs we spoke to expressed hesitation in moving to metered use, principally due to the business case. FOCs however will be heavily incentivised to move to metered use because of the lower rate. EAUC was considered to have minimal impact or recognition within NR routes and the FOC and TOC communities.

The choice to use electric over diesel stock is not impacted by EC4T, rather the lower costs of electricity compared to diesel and the extent to which the network is electrified.

Schedule 8

Schedule 8 had significant impact on behaviours in the rail industry in CP4, in particular on Network Rail, FOCs and TOCs.

This impact was mostly seen on strategic decisions rather than day to day behaviour at NR, with some permeation to operational levels. Day to day operational decisions are driven principally by PPM and other operational KPIs; though route budgets have an allowance for S8, it's unpredictable nature means most operational staff feel they have little control over it. That said, there are examples of where it has driven decisions on where maintenance work is prioritised. Strategic decisions informed by S8 are mainly related to introducing additional services – the cost-benefit can often be marginal or negative on congested routes. Though S8 provides a very effective mechanism for monetising delay, it is not the sole factor considered in the final decision on an additional train service, that can be driven by a desire to accommodate the wishes of the TOC or relieve route issues for a FOC. Schedule 8 was also used to drive decisions on where investment should take place based on key areas of underperformance.

TOCs are held harmless to changes in S8 benchmarks between control periods but not to S8 payments resulting from delays attributable to them, this creates a very real incentive to address causes of delay e.g. crew timeliness and fleet reliability. But many TOCs conceded that their corporate profit expectations or obligations in their franchise agreement were of greater importance. Various odd outcomes result from the sometimes perverse nature in which S8 works, but generally TOCs are not distracted by playing the system to take advantage of windfalls, rather they persist in their focus on performance.

Contractors, through contract structures which transmit delay risk, are affected by S8. It has been seen to promote better ways of working especially where that risk can be shared with NR, but it has also led to works being cancelled or no-bid because the risk was considered too high.

The structure of S8 is generally accepted as sophisticated and well-designed, however, some issues were observed in CP4: the perception from the TOCs that NR capped rates were too low in CP4 and that the higher rates in CP5 could cripple the economic viability for some rail freight container traffic; and the fact that NR pay out material sums for factors outside their control e.g. weather.

Volume Incentive

The Volume Incentive had minimal recognition at NR route level and the operators due to its low materiality. It was better understood by the Network Rail centre but when reviewing the business case for additional services the Volume Incentive had limited influence due to its materiality.

Capacity Charge

The Volume Incentive and CC should encourage NR to allow more traffic on to the network. There was evidence that NR consider the interplay between them and S8 (a deterioration in performance resulting from new services) and this drives economic decision making. On congested routes, the business case is rarely compelling and any increase in the charges is unlikely to have impact as the ultimate constraint is a lack of capacity which typically requires significant investment to resolve.

The CC had some impact on behaviours in particular at regional operators. There was a concern that the increase in rates in CP5 would discourage the introduction of new services but a couple of respondents remarked that it sent the right signals to the market - forcing operators to think about the economic value of a train path.

Schedule 4

Schedule 4 had significant impact on Network Rail; the impact on TOC and FOC behaviours were more muted. The devolution to routes has meant that S4 budgets had a greater bearing on possession planning in the latter half of CP4. TOCs and contractor involvement in these plans have also increased, to the benefit of the whole industry. Possession strategies and the acceptance of longer possessions (more productive and lowers industry costs) is largely driven by the market in which the route/ TOC operate; long distance TOCs have the lowest tolerance for long possessions. To some degree, S4 rates are also considered, especially as the materiality of rates increase (driven by possession length, booking notice etc). TOCs' financial interest in S4 was related to assessing whether compensation was adequate to cover alternative train or bus services, this was thought to be fine. FOCs felt that the higher compensation levels to TOCs meant that possession strategies were designed with less thought given to FOCs, especially overnight possessions which have significant impact on FOC services.

Fixed Track Access Charge

The FTAC, though the single largest charge by value, to both NR and TOCs, is not considered to have incentive properties - it is a fixed element of franchise economics and seen as a balancing figure that NR use to recover costs from its customers. As such it does not drive behaviours in the industry. The funders were impacted; some funders were critical of the structure of the charge and expressed a desire for it to be more costs reflective of regional markets.

Station Long Term Charge

Very few industry participants believed the Station LTC had any impact on behaviours, it was considered to be a fixed cost. The ownership structure of stations and maintenance responsibilities create confusion and poor outcomes for passengers and some TOCs believed they could deliver better station management at lower cost than NR. On the flip side, NR through its national reach, was seen to be best placed to leverage its influence in exploiting commercial opportunities (e.g. retailer leases).

Freight Only Line Charge

The freight-only line charge had some impact on behaviours at the FOCs and less so NR due to low materiality. The charge was largely seen as a cost recovery mechanism with few incentive properties due to its fixed nature. There are concerns that the freight specific charge that comes into effect in CP5 could damage FOC profitability – it is targeted at coal freight but FOCs argue their ability to transmit this charge into pricing is limited by the market power the energy generators exercise.

Coal Spillage Charge

The coal spillage charge and improvement fund drove initiatives to reduce coal spillage in CP4. However the change to the charge in CP5 has reduced its incentive properties and it is now perceived to be a charge levied simply on what coal freight can bear than being reflective of costs.

Efficiency Benefit Sharing Mechanism/ REBS

EBSM drove very little behavioural change in CP4 due to a lack of understanding, poor NR transparency and low materiality. The structure was widely criticised by funders for allowing TOCs to receive benefits without making behavioural changes. It is unlikely that operators will opt into REBS in CP5 due to their aversion to taking downside risk. FOCs did participate in EBSM in CP4, there was no element of downside risk but felt the opportunity was limited due to the greater emphasis placed on passenger trains. All industry participants concurred that alliance-type collaboration was more effective at driving cost efficiencies.

Themes

Various themes, not related to a specific charge were identified. Of most significance is the complexity of the C&I regime which impedes understanding and the potential impact of charge incentive properties. There was also concern that some of the charges were abstracted from the operational reality of the network and therefore seen to be economically pure but lacking in real world context. A second widely acknowledged issue was the calibration of charges, in particular, S8 AML benchmarks which create significant flows of monies to/ from the TOC to NR and drive perverse behaviours, if incorrectly calibrated.

Other Regulated Businesses

The use of C&Is is an appropriate means of driving behaviour in many areas of the rail industry but not all. In rail, there are behaviours where regulation or economic levers/ incentives are seen to work to good effect (e.g. in the monetisation of delays, per schedule 8) and there are some areas where they do little to incentivise desired behaviours (e.g. EBSM which has been overtaken by alliance-type working). Regulators in other industries have shown a controlled use of regulatory pressure, limited to areas where economic levers have been proven to work but allowing market forces or natural industry dynamics to govern in other areas. The ability of a regulator to adjust its behaviour as an industry evolves was seen to be an important driver of good regulation.

1 INTRODUCTION

As part of the ORR's review of the Charges and Incentive (C&I) regime for CP6 and beyond, a study was commissioned in January 2014 to gather evidence on CP4 charges and incentives to understand how "the incentives, individually and in aggregate, impact on decisions made by players in the rail industry and the mechanism through which this occurs." This report presents the findings from that study.

1.1 Project Objectives and Scope

Source: ITT, Evidence gathering on the effectiveness of PR08's incentives regime:

Objectives

This study will consider all charges, and financial and contractual incentives which were in place in CP4.

This study is an evidence gathering exercise to understand how our incentives, individually and in aggregate, impact on decisions made by players in the rail industry and the mechanism through which this occurs. Part of this will be to get a good understanding of how well our incentives are understood by the industry and, if in some cases they are not impacting on decisions, the reasons for this. The ultimate objective is to obtain detailed evidence that will help identify areas of the structure of our charges and incentives which we should focus on (which may, for example, involve incorporating these incentives in to the structure of charges).

Scope

We are interested in the impacts of our incentives regime as a whole but also with particular reference to the following directly incurred charges:

- variable usage charge;
- capacity charge
- traction electricity charge
- electrification asset usage charge
- coal spillage charge

For the fixed charges we are interested in:

- Fixed track access charge (which is allocated on a variable basis and so which may have incentive properties)
- Freight-only line charge
- Station long term charge

We also require consideration of the volume incentive, Schedule 4 possessions regime, Schedule 8 performance regime and of the efficiency benefit sharing mechanism.

As mentioned in the background, CP4 ends at the end of March 2014 and then the decisions we have made for CP5 will take effect for the next five years. We have made changes to the charges but the underlying structure of charges in CP5 remains very similar to CP4. The main changes for CP5 are:

- We are introducing a route-based efficiency benefit sharing (REBS) mechanism which will replace the efficiency benefit sharing mechanism. REBS strengthens the incentive for reducing infrastructure costs by increasing passenger and freight train operators' interest in costs by exposing them to costs in each year of the control period.
- Volume incentive rates will be increased, the design improved and a mechanism [is being created] to transmit the incentive down to Network Rail's route level.
- We are introducing a freight specific charge on commodities that can bear it so that freight pays more of the costs it causes, costs incurred are more transparent and subsidy is diverted from areas where it has little effect on behaviour towards more effective uses.
- Being aware of these changes is useful context and any evidence on how these changes are already impacting on decisions is also of interest. However as they are not yet in place, we are expecting the majority of the evidence gathering to come from stakeholder's responses to CP4 charges and incentives.

We published the final determination on 31 October 2013 which explains the changes we are making for PR13 which includes our new charges and incentives that will be in place on 1 April 2014. This document can be accessed here: <http://www.rail-reg.gov.uk/pr13/publications/final-determination.php>. These incentives are covered in chapters 15, 16, 19 and 20.

In order to consider the impact of CP4 charges and incentives, the successful bidder will need to gather evidence from a full range of relevant stakeholders including but not restricted to Network Rail, train operators (freight, passenger and open access), train manufacturers, rolling stock companies, funders (governments and regional bodies) and other relevant suppliers.

We are particularly interested in understanding the following:

- How well do all the train operators, Network Rail and third parties (such as funders, rolling stock companies and vehicle manufacturers) understand the purpose and intention of each of the charges/incentives?
- Do they estimate/budget for the cost of the charges/incentives in their decisions – for example to what extent do they form an explicit part of any relevant investment decision?
- To what extent are decisions affected by the existence/level of any charges/incentives? Examples of this may be:
- Have funders considered the cost of the capacity charge or variable usage charge in deciding whether to subsidise more services?
- To what extent do charges/incentives affect Network Rail's decisions to allow different types/volumes of traffic onto the network, or affect timetabling decisions?
- To what extent do charges/incentives affect Network Rail's decisions on where to carry out maintenance and renewals, and its planning of possessions and the willingness of TOCs to accept them?
- Are train operating companies' and rolling stock companies' rolling stock decisions influenced by the variable usage charge, and do they do this in practice?

- To what extent do vehicle manufacturers consider the variable usage charge in the design/procurement of new trains? Similarly, to what extent do franchising authorities consider the variable usage charge in the procurement of new trains?
- Does the stations' charging structure encourage the efficient use of stations, for example, making the most of commercial opportunities?
- To what extent do the individual players in the rail industry have an incentive to engage in the periodic review process to help ensure cost reflective charges and well-designed incentives?
- Do franchising authorities think it is important to expose operators to cost reflective charges and what is their appetite to do this?
- How does the impact of charges in the rail industry vary compared with other regulated businesses? Are they of a similar level of complexity and do they adhere to the same principles?
- Have industry stakeholders considered changes following any of the modifications we have made to the incentives in PR13 and if so which modifications are they responding to and what changes are they considering?

1.2 Description of Charges and Incentives

We explored eight charges and four incentives that were effective in CP4, a description of these is provided in tables 1 and 2.

Table 1: Network Rail charges made to Operators (as in place during CP4)

	Charge	Description - as defined by ORR	Incentive properties	Charging approach	Indicative size
Fixed	Fixed track access charge	Determined on basis of Network Rail's revenue requirement after accounting for the income received from variable track access charges, other single till income and network costs	Reflects costs as far as possible, little in the way of incentives	<ul style="list-style-type: none"> Charge is allocated to passenger operators using a top-down approach Fixed value is levied per operator per year 	££££
	Station LTC	Recovers station building and civils maintenance, repair and renewal costs	LTC is fixed, so encourages Network Rail to outperform financial efficiency targets at stations	<ul style="list-style-type: none"> Cost calculated via NR cost model Levied on a station-by-station basis for both managed and franchised stations 	££
	Freight-only line charge	Recovers the fixed cost of Freight only lines	Limited, as charge is intended to recover fixed costs	<ul style="list-style-type: none"> Total cost estimated through NR Infrastructure Cost Model Charge recovered on a £/kgm (1000 gross tonne mile) basis 	£
Variable	Variable usage charge, VUC	Recovers maintenance and renewal costs that vary with traffic	Operators have an incentive to develop 'track friendly' vehicles. Also means Network Rail has no disincentive to accommodate additional traffic	<ul style="list-style-type: none"> Costs estimated through NR models Price list disaggregated to vehicle class level (passenger vehicles). Levied as pence per vehicle mile For freight, disaggregated further by commodity type and whether the vehicle is laden/ tare. Levied £/kgm 	££
	Traction electricity charge, EC4T	Recovers the costs of providing electricity for traction purposes	Low incentive to reduce EC4T costs at present since consumption is (in most cases) modelled by Network Rail. On-train metering has been adopted by some operators, giving more control over consumption.	<ul style="list-style-type: none"> Consumption (kW/train mile) is modelled Charge calculated as 'consumption (kWh) x price (£/kWh)', with a subsequent volume washup Optionally, operators can use metered consumption, where data is recorded on-train per 5-minute intervals, with a markup to account for electrical losses 	££
	Electrification asset usage charge	Recovers maintenance and renewal costs of electrification assets that vary with traffic	Operators pay for the costs they cause. Ensures no disincentive for Network Rail to accommodate additional electric traffic	<ul style="list-style-type: none"> Total annual EAU cost estimated by NR engineering team Levied as pence per electrified vehicle mile (passenger) / £ per kgm (freight) 	£

Capacity charge	Recovers Network Rail's Schedule 8 compensation costs that vary with traffic	Overcomes the disincentive to Network Rail of accommodating additional traffic, and incentivises TOCs / Funders to make efficient use of network capacity	<ul style="list-style-type: none"> • Tariffs determined by estimates of capacity utilisation and train operator revenues at a localised level • All FOCs pay the same tariff, levied per train mile • For passenger operators, levied according to service group, per train mile • 25% weekend discount to reflect less traffic on network 	££
Coal spillage charge	Recovers the costs of coal spillage	Means Network Rail does not face a disincentive to accommodate additional coal traffic	<ul style="list-style-type: none"> • Costs forecasted for clean-up of spillages and impact of delay minutes 	£

Table 2: Network Rail incentive structure (as in place during CP4)

Incentive	Description	Nature of incentive	Charging approach	Indicative materiality
Volume incentive	Payment to Network Rail for accommodating demand over and above that stated in the High Level Output Specification (HLOS) and Freight Route Utilisation Strategy (RUS)	Without incentive, there would be little reward for Network Rail to accommodate additional traffic; revenues for extra trains would only be approx. equal to costs	<ul style="list-style-type: none"> Calculated as additional capacity provided above baseline Set according to additional train miles and farebox revenue (passenger) / additional train miles and kgtm (freight) Incentive accrues over CP and made as a lump sum cash payment at the end of a Control Period – one CP in arrears 	££
Schedule 4 (possessions regime)	TOCs are compensated for the effect of Network Rail possessions on revenue, and for the costs incurred due to replacement buses or additional train mileage during possessions. Freight operators may also claim compensation under Schedule 4	Network Rail incentivised to plan possessions efficiently and early; rates are discounted for advance notice of possessions	<ul style="list-style-type: none"> TOCs pay an Access Charge Supplement to cover forecast possessions, and thereby NR's baseline costs Network Rail agrees a calendar of works in advance, with discounts to Schedule 4 rates for early possession planning Differential in rates by 'Type' of possession, which is influenced by length and level of disruption caused 	££
Schedule 8 (performance regime)	If Network Rail outperforms against benchmarks determined at periodic review, it receives a net payment from TOCs/FOCs in light of increased farebox revenues. Conversely, if Network Rail underperforms, it makes payments to operators to reflect passenger revenues being lower than they otherwise would be	Aligns interests of Network Rail and train operators in order to reduce delays to train services and improve performance where it makes economic sense to do so	<ul style="list-style-type: none"> Responsibility for Minutes Late and Cancelled Stops is allocated to TOC/NR Performance vs. benchmark is used to allocate payment 	££
Efficiency benefit sharing mechanism	Aims to improve Network Rail efficiency by rewarding TOC for assisting towards improvements. TOC shares in upside, but is not exposed to any downside	Newly introduced in CP4 and incentivises operators to engage with Network Rail and work together to increase its efficiency	<ul style="list-style-type: none"> Dependent on NR efficiency performance on operating, maintenance and renewals expenditure Operators exposed to 25% share of upside efficiency, and no downside 	-

1.3 Methodology for Gathering Evidence

We aimed to gather evidence from:

- A diverse group of representatives from the rail industry covering Network Rail (NR), Funders, Train Operating Companies (TOCs), Transport Owning Groups (TOGs), Freight Operating Companies (FOCs), major contractors to Network Rail, Rolling Stock Operating Companies (ROSCOs) and train manufacturers.
- Individuals from different roles within Network Rail, representing the centre and the routes

The nature of the evidence we gathered fell into three areas:

- Views on the effectiveness of the Charges and Incentives (C&Is)
- Examples of how the C&Is have a bearing on operational decisions and actions, if at all
- The overall business context in which the organisation operates, this serves to understand the relative importance of C&Is versus other business drivers

We used three formats to engage with the industry:

1. An online survey aimed at calibrating the industry's view of the effectiveness of particular charges, the results from this are presented in the graphs in section 2 and appendix A. A total of 79 organisations were invited to participate, we received responses from 52 individuals, the profile of the sample can be found in appendix B
2. Telephone and face to face interviews with a representative sample of the industry, with particular focus on Network Rail, the TOCs, Open Access Operators and FOCs who are most directly impacted by the C&Is.
3. Three workshops. The first with the FOC community (discussing freight specific issues), the second with NR and TOCs (covering individual charges) and the third with NR, some TOCs and contractors (covering Schedule 4 and 8)

Through the telephone, face to face interviews and workshops we spoke with 54 individuals from 31 organisations (entirety of Network Rail is counted as one organisation), details can be found in appendix A

Across all formats, we have preserved the anonymity of respondents. Therefore, evidence cited in this report is attributed to the organisation rather than at an individual level. We identify Network Rail, other organisations are referred to as TOC, FOC, Contractor etc., but not by name.

Factual accuracy has been achieved by asking interview respondents to validate meeting minutes, from these we have extracted quotes which have formed the basis of the evidence in this report.

Caveat – we present the views of the industry as given to us, in some cases, responses revealed inaccuracies in understanding of how the charges work. We have highlighted these where known, not to mislead the reader but as evidence of the mixed level of understanding we observe across the industry.

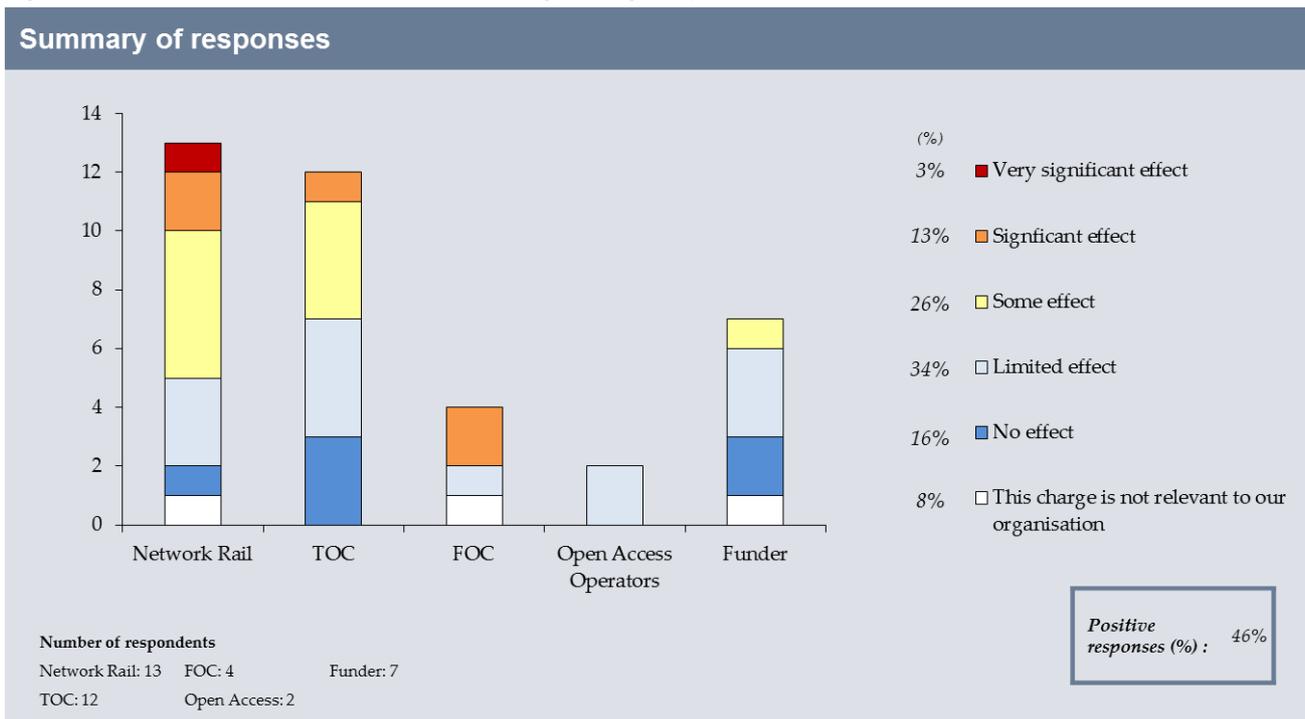
2 INDIVIDUAL CHARGES AND INCENTIVES

This section presents evidence and feedback against the twelve charges and incentives that are the subject of this study – these are described in the introduction. Our aim has been to gather operational examples of how organisations make decisions or act in response to the charges and incentives regime. In some cases, for example the TOCs, such evidence is not available or at best thin, because the franchise agreement holds them neutral to the effects of the regime.

2.1 Variable Usage Charge

2.1.1 VUC Impact– Industry Overview

Figure 8: The extent to which the variable usage charge impacted behaviours in CP4



The variable usage charge had most impact on the behaviours of Network Rail and the FOCs, with limited influence on the funders and open-access operators. The VUC had most influence on the modifications of rolling stock.

2.1.2 VUC - Operational Examples

2.1.2.1 Network Rail

Message	Quote
The variable usage charge had limited influence on NR policies and actions	<i>"VUC is a very sophisticated measure of track wear - but its intention is to really influence TOC/FOC choices over rolling stock, not NR's policies and actions"</i> Network Rail
The variable usage charge had limited impact on the decision to run more trains, only forming part of the financial assessment	<i>"The variable usage charge was part of the equation for evaluating whether to offer train paths, though this only really happened in the last 2 years"</i> Network Rail
The extent to which the variable usage charge influenced rolling stock modifications varied across the routes	<i>"TOC have modified the bushes on a number of the rolling stock fleets ... and have been able to agree a reduction on the VUC based on these 'friendly' trains..."</i> Network Rail <i>"VUC is good for NR as it reduces the impact on infrastructure and encourages TOCs to implement initiatives quickly"</i> Network Rail
Network Rail observed some TOCs using the variable usage charge to justify investment in rolling stock in CP4	<i>"TOC have recently used a piece of kit to make their trains more track friendly and reduce track access charges. They used the difference between the VUC charge cost now and after modification as justification in their business case"</i> Network Rail

The variable usage charge had limited impact on the business decisions made by Network Rail over CP4 with Network Rail acknowledging that the charge had greater incentive properties for TOCs and FOCs. While the variable usage charge therefore did not feature in the day to day decisions by Network Rail, it was mentioned that in some routes the variable usage charge was considered during the more strategic decisions on whether to offer additional train paths.

The extent to which the TOCs engaged with Network Rail on this charge differed between the routes. In some routes, Network Rail was actively engaged with the TOC to implement modifications, *"We supported the TOC to receive a VUC discount as a result of their modification."*

In other routes, there was little evidence of either the TOC or Network Rail changing behaviours as a result of this charge. Evidence suggests that in some cases, this was because the charge was simply viewed as an accepted cost of doing business while in other routes it was suggested the impact of the charge had been limited by the cost of implementing modifications and disagreement over who was responsible for this cost: *"VUC is an important driver to modify rolling stock but these modifications are very expensive to achieve and it's unclear who should pay for it."*

Where TOCs made modifications to the rolling stock in CP4, Network Rail observed the TOCs using the difference between the VUC charge before and after the modification to justify investment.

2.1.2.2 TOC

Impact on rolling stock choice and additional services

Message	Quote
The VUC had a low impact on TOC decision making, partly due to the franchise process which holds franchised TOCs harmless to the regime, except for decisions at the margin e.g. post-bid rolling stock modifications	<i>“Although we can make a small difference at the margins, the VUC is not material enough to drive those decisions”</i>
	TOC
	<i>“We are held neutral through the franchise process, except for decisions at the margin e.g. additional services or modifications to rolling stock”</i>
	TOC
	<i>“We are committed to operating a base SLC, for which the costs are ‘bid out’ at the start of the franchise. Protection clauses in the franchise agreement also mitigate any incentive effects of changing the rates between control periods”</i>
	TOC
Although the VUC did impact decisions at the margin (e.g. additional services not included in the franchise), those decisions tended to be driven by other factors	<i>“VUC is a cost line in each business case, but is relatively insignificant compared to other business case drivers. We have not invested in any new trains or track friendly bogies to reduce the VUC”</i>
	TOC
	<i>“Rolling Stock deployment decisions are driven by mileage benchmarks from the ROSCO and not by the VUC charge”</i>
	TOC
In the main, decisions on new or replacement rolling stock were driven by other factors (e.g. availability and vehicle capacity), both for bidders, franchised TOCs and open access operators. There were some rare exceptions	<i>“We chose to keep X rolling stock rather than Y in the bid, but this was driven by passenger benefits and not by the VUC”</i>
	Transport Owning Group
	<i>“Does not affect choice of rolling stock – as like most TOCs we just have to take what is available”</i>
	TOC
	<i>“Even at the margin, the VUC does not drive any decision making, as it’s effect is insignificant compared to other factors such as the capacity of rolling stock which drives revenue “</i>
	TOC
	<i>“Rolling stock decisions are driven by availability, compatibility with existing fleets, vehicle capacity etc, not by the VUC charge”</i>
	TOC
	<i>“Rolling stock decisions are very occasionally driven by the VUC. For example, we decided to replace the our vehicle type due to the VUC being particularly high”</i>
	Transport Owning Group
The VUC also impacts decisions to run additional services through inclusion in the business case	<i>“The VUC does drive the marginal decisions on provision of additional services not included in our SLC”</i>
	TOC

Impact on rolling stock modifications

Message	Quote	
The VUC did have some impact on rolling stock modification decisions, but the process and outcomes were not always positive	<i>"We are progressing modifications to our fleet to make them more "track friendly" in response to the VUC incentive"</i>	TOC
	<i>"When the Franchise was renewed, the higher VUC hit our cost base. This incentivised us to invest in track friendly bogies. The outcome was a reduction in our VUC but no improvement in track wear – so an unsatisfactory outcome for the industry"</i>	TOC
	<i>"We have a current initiative to change the suspension on our rolling stock to reduce track wear. However, it has taken five years of negotiation with NR to agree the lower VUC rates."</i>	TOC
But for some TOCs the VUC saving is too small to justify any investment within the payback period of a franchise	<i>"The VUC saving is too small to recoup the cost of fitting track friendly bogies"</i>	TOC

2.1.2.3 FOC

Message	Quote	
The extent to which the VUC influenced the rolling stock choices differed between the FOCs	<i>"The variable usage charge costs are a very small part of the operating costs...the difference in VUC between the different types of train isn't large enough to impact on the choice of rolling stock"</i>	FOC
	<i>"The variable usage charge does impact rolling stock choices"</i>	FOC
The impact of the VUC on rolling stock was limited by the contrast between the frequency of charge changes at control periods and the asset life of rolling stock	<i>"Trains have a life of c.30 years and it is therefore difficult to accommodate changes between control periods. We will make a decision based on the savings available at the time and make an assumption that they will continue"</i>	FOC
One FOC had modified rolling stock to receive a VUC discount	<i>"We have modified the suspension type on our wagons to reduce the VUC"</i>	FOC

The extent to which the VUC influenced the choice of rolling stock differed among the FOCs, with the larger FOCs tending to give the charge greater consideration. However the FOCs were united in their opinion that in CP4, the VUC was never the key deciding factor in their decision as the cost of VUC was marginal in comparison to the significant costs of operating rolling stock. When selecting rolling stock the smaller FOCs tended to focus on performance and operating costs stating that the difference in VUC between the types of rolling stock were not significant enough to factor into their decision. In the larger FOCs, the variable usage charge was included in the financial model but its relative influence was limited by its materiality. In addition, the FOCs felt that the impact of the VUC was limited by the disparity between the life of their assets c. 30 years and the frequency of change in the VUC fees. FOCs had to assume the VUC would not change considerably before the end of the asset life when factoring VUC costs into their decisions.

While the VUC seemed to have limited influence on the choice of rolling stock, there was evidence in CP4 that the FOCs assessed whether to make modifications to their rolling stock based on receiving VUC discounts. In one FOC this led to a decision not to make any modifications as they were already using the most efficient bogie types. However some of the other FOCs made modifications such as a change to the suspension type on wagons to their fleet.

2.1.2.4 Funders

Message	Quote
The VUC had limited impact on decisions on additional services	<i>“Theoretically, this charge may have had a marginal effect in our calculations of the costs and net benefits of potential future changes to service patterns. This would however be very minor”</i>
	Funder
The VUC had limited impact on decisions on rolling stock	<i>“The variable usage charge will be included in the financial model to decide which stock to purchase but it is a very small part of the costs and the difference in costs between model X and model Y are too small to make much influence”</i>
	Funder
The majority of funders felt the VUC was cost appropriate	<i>“Unlike the capacity charge, the variable usage charge is much more easily translated back into cost on the NR infrastructure”</i>
	Funder

There was evidence in CP4 that the VUC was considered by funders when assessing the business case for running of additional train services. However the charge was only one cost of many included in the calculations of overall costs required to run a service. In this case the relative impact of the charge was small and unlikely to be a deciding factor in whether to run a service or not, but rather an accepted cost of running trains on the railway.

Again the variable usage charge had limited impact on the selection of rolling stock as the charge is not very material in comparison to the rolling stock operating costs. This charge had particularly limited impact on smaller funders as one funder summarised: *“The VUC had limited impact on rolling stock choice as we tend to run smaller light trains anyway.”*

The majority of funders accepted the VUC as a cost of doing business on the railway and felt it was accurately modelled and translatable back into the cost on the infrastructure.

2.1.2.5 ROSCO

Message	Quote
The VUC has impacted on rolling stock choice and the modification of rolling stock	<i>“The VUC has had an impact on rolling stock and the modification of rolling stock. Heavy trains used for high speed intercity rail, had stiff characteristics, a criteria used in assessment for track access charges. Over the last 4 years, we have worked with the industry to reduce stiffness and reduce track access charges. This has had substantial impact, reducing charges by 20-30%. “</i>
	ROSCO
In CP4, ROSCOs have observed a greater appetite from TOCs to work with ROSCOs to implement improvements	<i>“At the end of a franchise, operators were never very interested in working with us to implement improvements. But over the last few years, TOCs have responded much more positively. Seem to be more responsible and want to do the right thing for the industry”</i>
	ROSCO

Operators are very influenced by costs when making rolling stock decisions and consequently in CP4, one ROSCO explained how they were aware of the potential to make their fleets more attractive by reducing

operating costs. These operating costs are directly impacted by track access charges including the variable usage charge. In CP4 therefore, the ROSCO assessed business cases for rolling stock modifications based on reducing the variable usage charge. In the example above the ROSCO pro-actively approached an operator to propose a modification to a high speed intercity rail rolling stock with the primary objective of reducing the VUC.

However in general over CP4, the ROSCO observed TOCs becoming more responsive towards collaborating to implement modifications. The ROSCO did not attribute this change to the variable usage charge but rather a change in culture with operators becoming more responsible and focusing on the wider railway industry.

2.1.2.6 Train Manufacturer

Message	Quote
The variable usage charge has impacted on train design	<i>“Charges have a direct impact on operating costs so were considered during the train design of our latest generations.”</i> Train Manufacturer
The variable usage charge has some impact on train modification	<i>“We made a modification on our trains to reduce track access charges”</i> Train Manufacturer

There was evidence that train manufacturers did consider the variable usage charge when designing trains due to the impact this charge had on operating costs. The extent of impact was limited by the lag between design and implementation, during which the criteria of the charge can change.

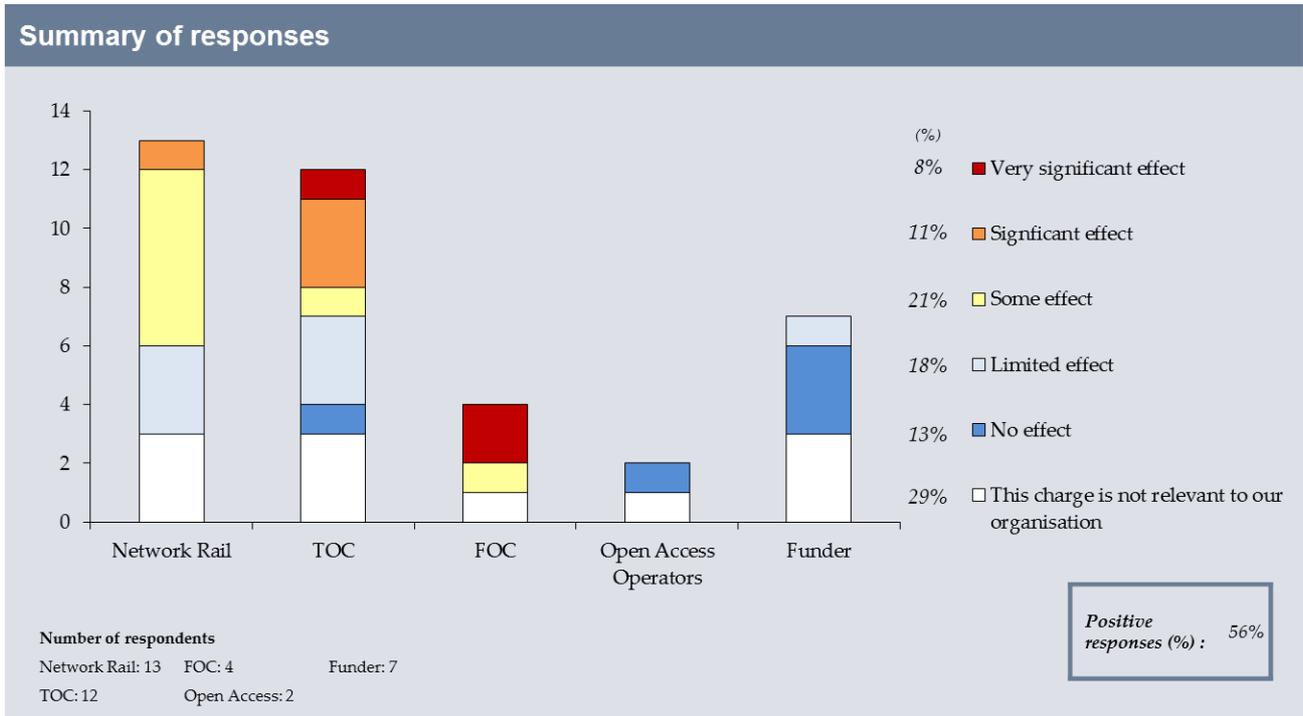
The variable usage charge had less impact on modifications on rolling stock. While one manufacturer gave an example of a modification of some of their rolling stock to reduce the variable usage charge, the manufacturer also acknowledged that during CP4, it was very challenging to make modifications to trains. Firstly, because it was unclear who would pay for the modifications (the need to be cost competitive made it challenging to pass these costs up the supply chain) and secondly because it was difficult to quantify the benefit of the modification. Network Rail’s VTISM model does not adjust for small modifications on existing stock. The impact of the variable usage charge was further limited by the length of the franchise agreements. TOCs at the end of franchise agreements in CP4 were less likely to be interested in making modifications to rolling stock due to the limited timeframe to receive the costs and financially benefit from the modification.

The variable usage charge was often considered as one of many factors in decisions on additional train paths and rolling stock choice but the extent of its influence was limited by the low materiality of the charge. The VUC had greater influence on modifications of rolling stock; however this was limited by the expense of these modifications and a lack of clarity over who was responsible for these costs

2.2 Traction Electricity Charge and Electrification Asset Usage Charge

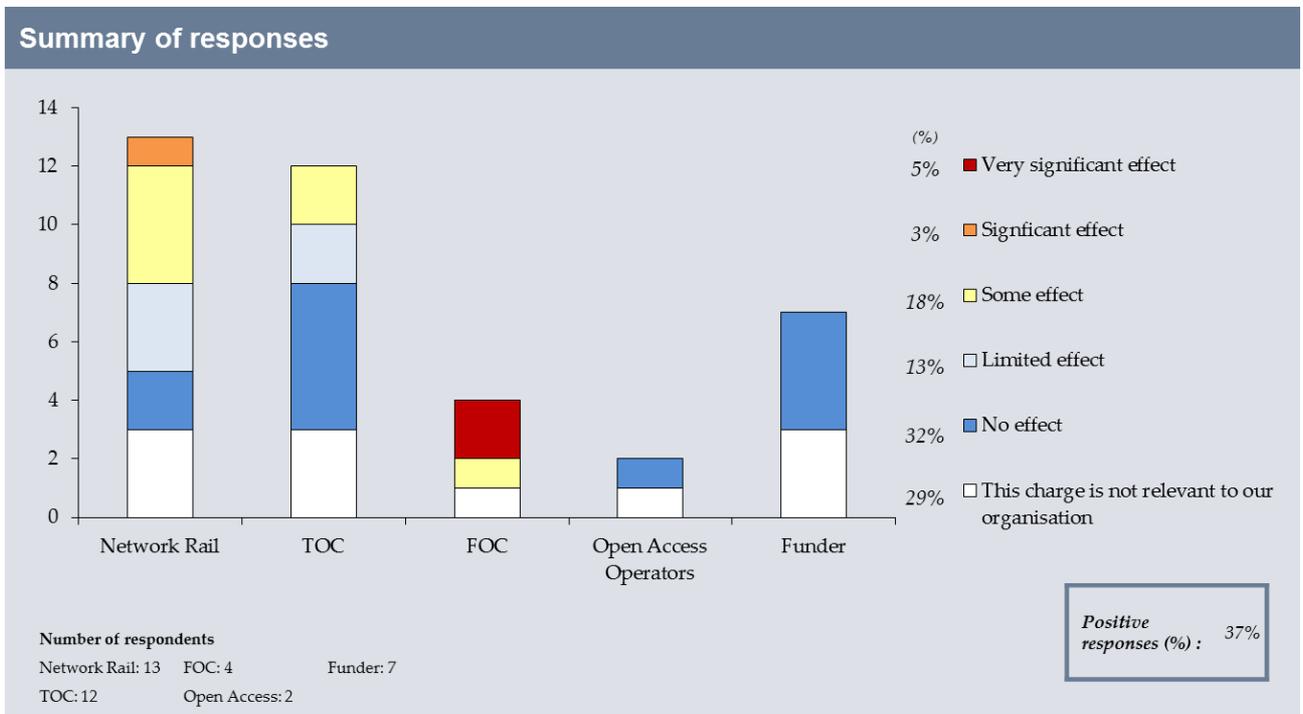
2.2.1 EC4T & EAUC Impact– Industry Overview

Figure 9: The extent to which EC4T impacted behaviours in CP4



The EC4T charge had most impact on the train operators with some impact on Network Rail behaviours. The EC4T influenced operators to develop technology and driving techniques that both minimise usage/wastage and to monitor usage.

Figure 10: The extent to which EAUC impacted behaviours in CP4



The EAUC has limited effect with the exception of the FOC community. This contrasts to the view of the FOCs in interviews. It is likely this was considered significant due to its link with the EC4T. The EAUC had less impact than the EC4T.

2.2.2 EC4T & EAUC - Operational Examples

2.2.2.1 Network Rail

Message	Quote	
The EC4T charge had limited direct impact on Network Rail but Network Rail has observed the TOCs respond to the charge	<i>"The increasing charges being felt by TOCs is driving behaviours to develop technology and driving techniques that both minimise usage/wastage, but can also monitor usage - this should have a positive longer term impact"</i>	Network Rail
Some Network Rail teams supported the TOCs to make the EC4T more efficient	<i>"TOC_X's move towards on-train metering put a focus on how EC4T could become more efficient, and how could we help them make that move"</i>	Network Rail
EAUC has limited understanding in Network Rail and no impact on behaviours	<i>"No-one understands EAUC and the charge is too small to have a significant impact"</i>	Network Rail

There was little evidence that EC4T had an impact on Network Rail behaviours however Network Rail did observe the charge driving behaviours amongst the TOCs. Some TOCs responded to the charge with behaviours to reduce usage while many more began the process to introduce on-board metering. NR centre forecasted a significant move to metering by the year 1 of CP5: *"We hope to see metered consumption increase from c.25% today to 50% during year 1 of CP5. Metering will help to ensure a more accurate allocation of the electricity bill, there will be a wash-up at the end to ensure complete allocation of the electricity bill."*

Some of the routes acted to support the TOCs to move to metering and a charge that more accurately reflected their usage.

Network Rail responded to the perception in parts of the FOC/ TOC community that NR could should be more active in reducing 'losses' in their electricity transmission infrastructure:

"There's a misconception in the industry about what NR can do to reduce transmission losses – the losses are effectively heat, a large amount of it is inevitable, it's just physics, there's very little we can do about it. The electricity we buy is apportioned to TOCs based on a number of factors, estimated consumption levels are marked up depending on whether it's AC (5% markup) or DC (27% markup). The markups reflect transmission losses which will also be driven by things that are out of our control like the weather, it's not simply a factor of NR's asset quality."

The EAUC charge had no impact on Network Rail with the Network Rail suggesting that this was because the charge was relatively unknown and understood. The charge is also relatively small when compared to EC4T. Similarly, Network Rail did not observe this charge having any impact on the TOC/FOC communities.

2.2.2.2 TOC

Impact on decision making

Message	Quote
This did have some impact on decision making, as TOCs are not held neutral to electricity price fluctuations	<i>"This does impact our decision making because it's a significant cost, around 5% of our cost base, and we are not protected from it under Schedule 9 of the FA"</i>
	TOC
	<i>"This does receive some attention as the risk of cost fluctuations is borne by TOCs. However, I cannot think of any specific initiatives which have been driven by the EC4T charge. We have a much bigger and more powerful group culture and initiative to reduce energy consumption across the business – regardless of how this is captured in the C&I regime – it's just the right thing to do"</i>
	TOC
For most TOCs, EC4T incentivised a number of initiatives	<i>"We have invested in eco-driving programs. The results are tracked using data received from line side meters as we do not have metered trains"</i>
	TOC
	<i>"EC4T impacts our strategy regarding train temperature. Firstly, whether to turn on heating in advance in the morning – this is a trade-off between saving electricity and the negative customer experience effect of putting cold trains into service. Secondly, what train temperature to maintain during service"</i>
	TOC
	<i>"It also effects decisions (at the margin) on stopping patterns as accelerating and decelerating uses additional electricity"</i>
	TOC
EC4T did not impact the choice of diesel versus electric vehicles. Firstly, because there is limited choice in terms of rolling stock, TOCs have to take what is prescribed or available through cascade. And secondly, because electricity is cheaper than diesel, so operators will run electric stock wherever possible, regardless of the regime	<i>"EC4T is a big cost and consequently we have introduced regenerative breaking"</i>
	TOC
	<i>"We implemented limited metering in CP4, and aim to be 100% metered by 1st April 2014. This was driven by the EC4T charge. We are also trialling regenerative breaking"</i>
TOC	
EC4T did not impact the choice of diesel versus electric vehicles. Firstly, because there is limited choice in terms of rolling stock, TOCs have to take what is prescribed or available through cascade. And secondly, because electricity is cheaper than diesel, so operators will run electric stock wherever possible, regardless of the regime	<i>"It does not drive decisions on diesel versus electric stock. Electric is just much cheaper than diesel regardless of the incentive regime, so we would run electric stock wherever possible"</i>
	Transport Owning Group
The EAUC was too small to have any impact on TOC decision making, but operators felt the charge was justified and necessary	<i>"Too small to affect decision making, but it is needed to reflect this cost"</i>
	TOC

Impact on the decision to move towards metered electricity use

Message	Quote	
The move to metering can be hampered by the cost of implementation or a perception that the TOC will subsequently be exposed to higher charges. Most TOCs we spoke to have reservations in moving to metered usage	<i>"We have not invested in metering for trains as the business case is not positive."</i>	TOC
	<i>"We do not have metering on our trains as there is currently no business case"</i>	TOC
	<i>"We are also exploring metering of trains, but this has not yet been introduced – it will depend on the business case"</i>	TOC
	<i>"We are currently running a trial for Eco-Driving initiatives. But as we are not metered this is based on "doing the right thing" rather than the EC4T charge"</i>	TOC
	<i>"We have not invested in Regenerative Breaking, as without metering we would only see a very small and diluted proportion of the benefit – so again there is no business case. If we are metered in future, this charge will have more significant incentive properties"</i>	TOC
Only one of the 12 TOCs we spoke to had switched to metering their entire fleet and was using this to monitor and reduce consumption. In this instance, the installation was subsidised by Network Rail	<i>"We have a fully metered electric fleet, and the installation was subsidised by Network Rail in CP4. This enables us to track electricity consumption more accurately. We have used this to map driving styles and initial results suggest that a slightly less aggressive driving style leads to a significant reduction in consumption"</i>	TOC
One fully metered TOC highlighted a potential issue with the cost reflectiveness of the metering rules. Electricity transmission losses are based on an average across the entire route, and not charged by individual Electrical Supply Tariff Area (ESTA). Now that metering enables more accurate calculation of losses by ESTA, this TOC believes that the industry should switch to a more cost reflective ESTA based model, enabling metered TOCs to get the full benefits of the investment in metering	<i>"We have not been able to exploit the full benefits of having a fully metered fleet in CP4 due to the metering rules in place. AC losses were set at a fixed % which represented a significant uplift for some operators. Fortunately this will be amended in CP5 with AC losses split by individual ESTA as opposed to a route average"</i>	TOC

2.2.2.3 FOC

Message	Quote
EC4T were generally accepted by the FOCs in CP4	<i>“Network Rail are not allowed to make a profit out of supplying electricity although I don’t know what incentive they have to buy electricity efficiently”</i>
	FOC

In CP4, the EC4T charge was generally viewed as an accepted cost that they had little control over. One FOC raised a concern on whether Network Rail was incentivised to buy electricity efficiently due to the fact that the costs were passed straight through to the operators. This led to discussions at the end of CP4 on the potential for freight operators to purchase the electricity themselves but currently these discussions have not led to further action.

In CP4 there was an appetite from the FOCs to introduce more electric locomotives. However this was not driven by the EC4T charge but rather due to the cheaper operating costs of electric locomotives versus diesel. The extent to which the FOCs moved to electric locomotives in CP4 was limited both by the cost of the locomotives and the availability of electrification on some of the Network Rail infrastructure.

Changes to the charge in CP5 have already impacted on business decisions with operators investing in moving to metering. There was a view that from operators that they are being forced to do this due to the increased costs of using the flat rate. However despite this, the FOCs seem positive about moving to metering with one FOC expecting the cost reduction to be significant which would help to counteract the increases in other charges such as Schedule 8.

2.2.2.4 Funder

Message	Quote
The impact of the EC4T charge on Network Rail is limited by the fact that it does not measure the efficiency of electricity delivery by Network Rail	<i>“The charge doesn’t establish whether Network Rail is efficient at delivering electricity to operators... some of these transmission losses could be down to poor maintenance of the infrastructure. Network Rail could potentially be set a level of acceptable leakage”</i>
	Funder
EC4T had limited impact on driving the choice of rolling stock to electric	<i>“It is much cheaper to run electric trains than diesel and we expect that to be the case going forward so this is more of a driver to switch to electric than the traction electricity charge”</i>
	Funder

Funders agreed that EC4T was needed and helpful for assigning the cost of electricity to operators but commented on how the impact of EC4T on Network Rail was limited because the charge doesn’t measure how effective Network Rail is at providing electricity. Some funders felt it was unfair for operators to have to pay for the transmission losses of the electricity.

EC4T had limited impact on driving the funders’ choice of rolling stock to electric. While there was a greater appetite for electric rolling stock in CP4 this was driven by the saving in costs rather than the structure of the EC4T charge. Funders also commented that the EC4T provided limited incentive for freight operators to move to electric rolling stock: *“On our network we have a number of freight trains which slow down and consume track capacity. Their performance would be improved by moving to electric but don’t think the incentive is there.”*

There was also some feedback that the EC4T charge also affected the business case for new electrification of the network.

- **Train Manufacturer**

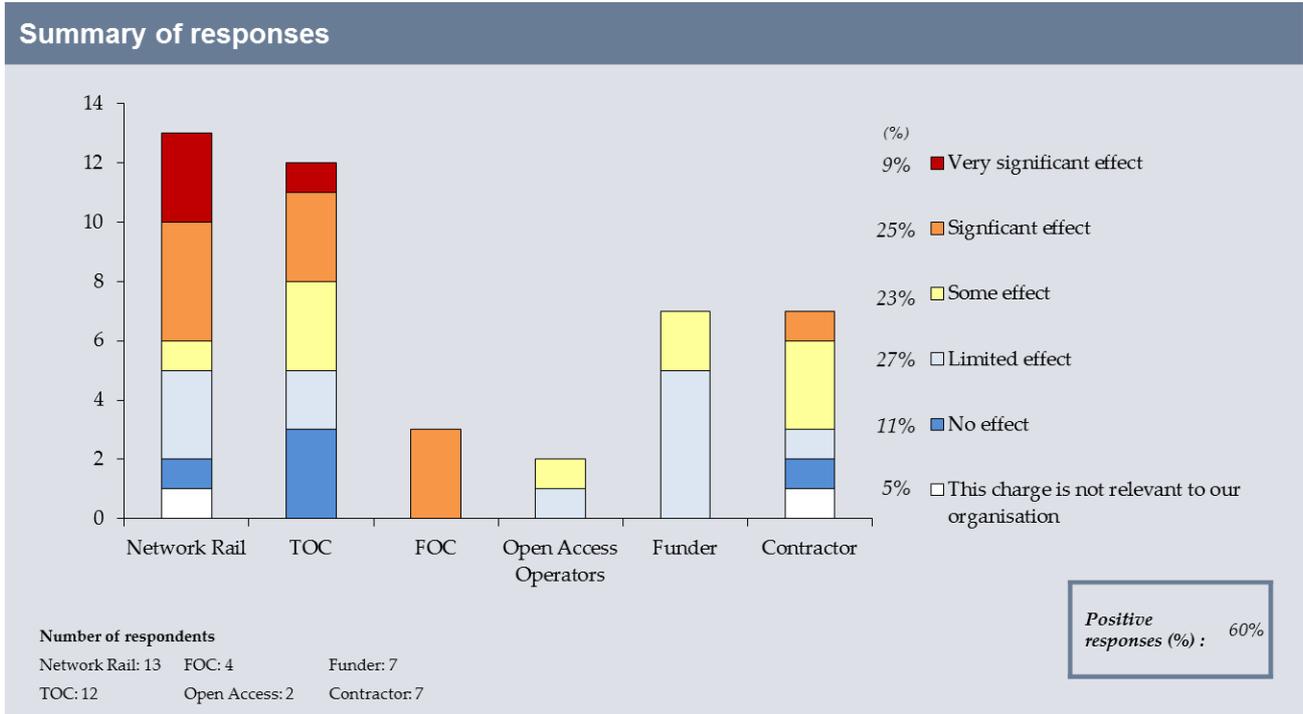
Message	Quote
Train manufactures have now moved to offer electrical metering should their operators ask for it	<i>“Operators now want electric monitoring on rolling stock so that they know exactly how much electricity they have used. We have recognised that our clients are now looking for this and now offer electrical metering should the operator wish it”</i>
	Train Manufacturer

The EC4T is an accepted mechanism of recovering the costs of electricity. The charge influenced the TOCs to introduce a number of initiatives to reduce electricity usage although the move to metering was limited by the cost of investment. The EAUC did not impact on behaviours due to its low materiality.

2.3 Schedule 8

2.3.1 Schedule 8 Impact– Industry Overview

Figure 11: The extent to which schedule 8 impacted behaviours in CP4



Of all the charges and incentives, Schedule 8 had the most significant impact on behaviours in the rail industry in CP4, in particular on Network Rail, FOCs and TOCs. This impact was mostly seen on strategic decisions rather than day to day behaviour although in some Network Rail routes it influenced where maintenance would take place.

2.3.2 Schedule 8 - Operational Examples

2.3.2.1 Network Rail

Impact on day to day decisions

Message	Quote	
Schedule 8 is indirectly linked to PPM, which NR considers of great importance	<i>"Our focus is on PPM...we understand that if we get performance right, schedule 8 payments will be lower"</i>	Network Rail
Schedule 8 was less well understood in the routes compared to NR Centre	<i>"Schedule 8 payments are less well known but the route accepts underperformance needs to be paid for"</i>	Network Rail
There was one example where schedule 8 affected the way a Network Rail route approached delay	<i>"We're more likely to agree with the TOC to cancel trains to get on a service pattern rather than carry delay throughout the day"</i>	Network Rail
Some routes used schedule 8 payments and PPM impact to inform decisions on where to carry out maintenance; by focussing on areas that are most vulnerable to performance issues, they sought to minimise S8 charges	<i>"We employ an approach to asset planning that takes into account S8 charges and PPM, these two factors will drive where maintenance works get planned. S8 charges are a very significant element of our budget, up to 25% last year."</i>	Network Rail

Day to day decisions were principally driven by PPM and delay minutes targets with an understanding in Network Rail that if these targets were achieved the schedule 8 payments would be lower. Many reasons were given for why Schedule 8 didn't have a bigger impact on day to day decisions with a key reason being the limited flow of communication to the teams on the ground of how their decisions drive schedule 8 payments.

In a couple of routes, however, S8 charges are being devolved in a very granular fashion into budgets and targets. This will increase over CP5 as the devolution process completes.

Though schedule 8 payments will feature in budgets, there is general view that route has very little control over it - payments can swing significantly in materiality from one period to a next: *"Last period we paid out more in Schedule 8 payments than we were budgeted for the whole year. I accepted this however if we were driven by Schedule 8 I would be a lot more concerned."*

In CP4, the focus on PPM led to schedule 8 payments that felt perverse, one route explained: *"Despite successfully achieving our PPM targets in the last few periods in CP4, we still had to make payments to the operator. While I understand it, it doesn't make sense to most of our track workers."*

While Schedule 8 was not a key driver of day to day decisions to promote improved performance, in some routes it was used to identify the key areas of the infrastructure driving greatest underperformance and therefore in most need of maintenance.

Impact on strategic decisions

Message	Quote
There was evidence that Schedule 8 had some impact on the decision to provide additional services	<i>"In May 2011, services on our route increased. When we analysed the increase in capacity charge and the increased performance risk, we actually felt exposed as the capacity charge didn't cover the increased risk. We were not incentivised properly to increase services. At the route level, it was more important to meet customer expectations for capacity demand. We recognised the industry benefit of additional services and in this instance it wasn't the best option for Network Rail"</i>
	Network Rail
The influence of factors outside of Network Rail's control questioned the incentive properties of Schedule 8 in CP4	<i>"We have mused oft and long about whether Schedule 8 really behaves as an incentive regime. In the end we still get rain / cable theft / suicides"</i>
	Network Rail

In Network Rail Centre and some of the routes Schedule 8 was considered in decisions to run additional services. The key drivers of the decision in the routes were whether the capacity was available and what the associated performance risk would be. Schedule 8 costs would therefore in most cases be considered as part of the performance risk and were particularly helpful in monetising delay. As a result of the £80 million fine Network Rail received for poor performance on its long distances services, Network Rail actually acted to raise the profile of the performance risk resulting from additional services. A national panel was set up to review sales of access rights. Prior to the panel, a pro forma for each additional service had to be completed which asked for an assessment of the volume incentive, capacity charge and schedule 8. This process aimed to increase awareness of the performance risk of new services and ensure a balance of the benefit of the additional trains to the industry with the additional risk for Network Rail. However while the performance risk was a key consideration, the routes tended to focus on customer service which could sometimes override economic disincentives.

There were numerous performance (PPM) improvement initiatives undertaken in CP4 by the TOCs, FOCs and Network Rail and a performance improvement fund was established. However there was little evidence that Network Rail was incentivised by Schedule 8, as one route explained: *"Performance initiatives are driven by customer service and our relationships with our customers rather than Schedule 8."* Reputational risk was another key driver for the routes and Network Rail centre as shown by the step change of focus on performance after the very public fine to Network Rail due to their poor performance on the long distance routes. One route explained: *"The fine created a step change in Network Rail. Network Rail would rather invest to improve performance than be fined."*

While Schedule 8 wasn't a key driver of performance, in CP4 the savings from Schedule 8 were used to justify investment for performance initiatives or infrastructure works by providing a monetary value for the forecasted benefit of the initiative. However one route argued that there was too much reliance on assessing projects based on their reduction in schedule 8 payments in CP4: *"We need a fresh approach to assessing investment projects. Priority of funding should be based on the projects that will deliver improvements in PPM and boost local economy rather than the largest reduction in schedule 8 payments."*

This view that there was too much focus on Schedule 8 for investment decisions wasn't consistent across Network Rail with the freight team explaining: *"Investment decisions often had a small reduction in performance payments but had an important impact on the overall performance of the railway such as the new cord line in Nuneaton to help freight operators avoid the east coast mainline."* In this case, overall performance on the railway was used rather than Schedule 8 to justify the investment.

Feedback on the structure of the incentive

Message	Quote
The process of delay attribution to assign Schedule 8 payments created conflict in relationships between Network Rail and Operators	<i>“On several occasions NR and the operator moved into ‘cold war’ or beyond”</i> Network Rail
Some of the schedule 8 payments in CP4 lacked a scientific approach to their calibration and led to net outflows of payments to the FOCs	<i>“Schedule 8 payment rate to FOCs was set by asking FOCs for their view on the cost of delay to them and taking a midpoint of the answers. However there was significant variability in the results and this was not necessarily the most scientific or accurate approach...In CP4 most FOCs received net income payments with one FOC even placing this as an entry in their annual statement”</i> Network Rail

A challenge for Schedule 8 as an incentive regime arises from the fact that Network Rail pay delays resulting from factors outside of Network Rail’s control such as poor weather, suicides and cable theft. These delays can significantly outweigh any payments for poor performance, one route remarked: *“due to the latest poor weather performance, Network Rail will pay out to the FOCs more for that period than they have over the last 3-4 years”*.

For many teams in Network Rail, schedule 8 is seen primarily as a compensation scheme and therefore there was not an expectation for Schedule 8 to drive changes in behaviour.

Some comments suggest that the calibration of payment rates drove perverse outcomes, particularly in the FOCs. Net payments of schedule 8 should be zero however in CP4 most FOCs were net winners from the Schedule 8 payment. However Network Rail also recognised that the payments rates FOCs pay out are high especially when compared to Europe and that while manageable in CP4, could impact on FOC profits when the charge rates increases in CP5. This was viewed as counter-intuitive to the government’s pro-rail freight stance.

The process of delay attribution created conflict in relationships between Network Rail and Operators in CP4. The extent of this went as far as impacting passengers in CP4 when the desire to avoid schedule 8 payments, led to neither side wanting to accept responsibility for not being able to run a full timetable. Significant schedule 8 payments occurred and the production of an appropriate emergency timetable in the interest of passengers was delayed.

2.3.2.2 TOC

Impact on behaviours

Message	Quote
Schedule 8 does impact bid development and in some cases it is seen as an area of high risk*	<i>"Schedule 8 has a significant impact on bid decisions, and overall it does lead to a reduction in the risk premium i.e. our risk premium would be higher in the absence of Schedule 8. The mechanism is very well understood by the bid team and significant time is spent making sure we get it right"</i>
It is the single biggest concern TOCs have over and above other charges and incentives	Transport Owning Group <i>"Schedule 8 has high variability and uncertainty – so it's an area of significant risk for TOCs and franchise bids"</i>
Franchised TOCs are held harmless to <u>changes</u> in benchmarks or policy through the franchising process	<i>"It is less important to franchised TOCs as they are held harmless to any changes in benchmarks or policy, through an adjustment to premium payments"</i>
However, franchised TOCs are not held harmless to Schedule 8 compensation payments for delay minutes attributed to their own operational performance.	<i>"Schedule 8 is pushing in the right direction. The measuring, benchmarking and recording of daily performance events are invaluable and do help drive incentives and behaviours"</i>
Therefore Schedule 8 did have some positive incentive on TOC performance	<i>"Schedule 8 incentivises operators to invest in improving their own performance, to avoid compensation payments"</i>
	<i>"Schedule 8 costs can be extremely high for TOCs, variable and difficult to forecast. Getting it wrong can financially cripple a franchise. They therefore have an impact on TOC decision making. For example, Schedule 8 impacts our decisions to invest in better fleet reliability"</i>
However, Schedule 8 was overshadowed by other more material performance drivers such as profit maximisation and compliance with Franchise Agreements	<i>"We are incentivised through Schedule 8 to deliver operational performance at or above benchmark. However, Schedule 8 incentives are relatively weak in this respect, as there are other incentives which have a greater impact. The main ones are business success and delivering against our FA to give credibility to future franchise bids"</i>
	<i>"In spite of the significant cost or benefit of Schedule 8, the targets in our FA (for delay minutes and cancellations) actually provide a far greater incentive to improve perform"</i>
	<i>"It is part of our corporate policy to work closely with Network Rail to reduce incidents and delays – but this has nothing to do with Schedule 8 incentives. Instead it is driven by profit targets and FA compliance, which drives our ability to retain existing and win future franchises "</i>
One operator felt that Schedule 8 was a relatively weak incentive for NR	<i>"For NR Schedule 8 costs are insignificant in the context of their cost base. For this reason, Schedule 8 does not appear to work as an</i>

incentive for NR. For example, despite deterioration in performance since 2010 and high Schedule 8 compensation payments, NR did little to address the problems until regulator intervention. This suggests that other more material forces were at work, overwhelming the Schedule 8 incentives”

TOC

* TOCs agreed with the Transport Owning Group that Schedule 8 plays an important role in minimising the risk premium in franchise bids. In the reality of day to day operations on the network, Schedule 8 payments can swing dramatically and this uncertainty builds in risk. However despite this uncertainty, TOCs are supportive of the role of Schedule 8 as the overall risk in franchise bids would be higher without it.

Feedback on structure of the charge

Message	Quote
A number of operators said that Schedule 8 could lead to some perverse incentives and outcomes, and that the incentive properties would vary depending on the type of operation and the amount of discretionary travel, for example long distance business and leisure versus London commuter	<p><i>“Schedule 8 could provide a disincentive on TOCs to make major operational investments in delay recovery e.g. more on station staff or full crew working. These both cost money, and the investment does not make commercial sense for a commuter operator who will receive compensation for every delay throughout the day attributed to a single incident in the morning, and whose revenue will not be severely affected by those delays “</i></p> <p style="text-align: right;">TOC</p> <p><i>“Schedule 8 is flawed in London, where poor performance has less effect on revenue and profits. This leads to perverse incentives where TOCs are not encouraged to invest in recovering quickly from delays”</i></p> <p style="text-align: right;">TOC</p> <p><i>“The two minute threshold under schedule 8 also provides a low incentive to recover from minor sub two minute delays. For example, removal of dispatch staff at certain stations led to no above threshold delays or costs but lots of minor sub two-minute delays. This decision made sense commercially under the regime but is not the best outcome for passengers”</i></p> <p style="text-align: right;">TOC</p> <p><i>“Schedule 8 can be a perverse incentive. For example, we are focussed on performance improvement, which could help NR to outperform their AML benchmark, a good outcome for passengers. But consequently, we can have our profit margin wiped out by a bonus payment to NR”</i></p> <p style="text-align: right;">TOC</p> <p><i>“Schedule 8 leads to a perverse scenario where a TOC and NR work together to improve performance, a good outcome for passengers, but the TOC profit margin is reduced by a large bonus payment to NR, which may not be offset by increased passenger revenue”</i></p> <p style="text-align: right;">TOC</p> <p><i>“There is a strong incentive to just focus on maximising revenue from the regime, i.e. benefitting from windfall payments”</i></p> <p style="text-align: right;">TOC</p> <p><i>“A TOC with whom we share infrastructure exceeded their own performance targets in early CP4 whilst NR also exceeded their targets. The result was significant bonus payments from the Operator</i></p>

	<i>to NR which were greater than any revenue uplift from improved performance. More recently performance has been poor from both Operator and NR, but with an overall net financial benefit to us which may be masking the incentive properties of the regime. This has been discussed during meetings with the ORR</i>	TOC
There were some issues around AML benchmarks in CP4 and the volatility of Schedule 8 (NB Schedule 8 is based on AML not PPM)	<i>“CP4 benchmarks may have been too high leading to perverse effects and losing any “incentive” due to being unachievable. This has been partly addressed in CP5 with lower targets and much more devolution of responsibility to route level, but addressing these problems have in themselves created an anomaly in that the same level of performance on Day 1 of CP5 as was achieved on the last day of CP4 will result in a significant step-change in payments between the parties”</i>	TOC
	<i>“AML benchmarks should be based on expected future performance, linked to PPM targets, and not on past performance”</i>	TOC
	<i>“Schedule 8 is also far too unpredictable and volatile. We can receive £1m per day in compensation or pay out £250k on another day”</i>	TOC
	<i>“Schedule 8 falls down due to growth, which impacts performance and the Schedule 8 benchmarks. High growth means that a calibration every five years can lead to significant shifts in the benchmarks and changes in the payments between operators and NR”</i>	TOC
	Transport Owning Group	
Despite the some odd incentive outcomes, most operators do not “play the system”, and simply focus on performance improvement regardless of any disincentives	<i>“Performance is so key to our business objectives that we effectively ignore any dis-incentives of Schedule 8 – and do work closely with NR to improve performance. Because it’s the right thing to do, for our business and for the industry”</i>	TOC

2.3.2.3 FOC

Message	Quote	
There was evidence from one FOC that the caps on schedule 8 prevented effective compensation when Network Rail particularly underperformed	<i>“There was a cap on Network Rail pay-outs to FOCs. Last year we reached this cap so we stopped investigating the other delays as we couldn’t receive any more pay-out”</i>	FOC
There was a view that the change in CP5 rates will not incentivise better performance	<i>“Despite performing against our benchmark in CP4, and Network Rail underperforming, the benchmark will move in favour of Network Rail. This doesn’t incentivise long term improved performance”</i>	FOC
There are significant concerns that CP5 payment rates will hinder freight industry growth	<i>“The performance regime is now a business critical issue”</i>	FOC

The impact of Schedule 8 on the FOCs was significant with the FOCs implementing a number of initiatives to reduce schedule 8 payments, including amending schedules to give more time at depots; investing in traction reliability; and working with Network Rail to deliver better planning at coal terminals.

One FOC thought that effectiveness of Schedule 8 as a method of compensation for delay was limited by the presence of caps for Network Rail. The caps for Network Rail attributable delay were perceived as too low and led to a number of unexplained delay minutes in CP4.

The FOCs felt that the movement of the benchmark for CP5 has reduced the credibility of the regime for the FOCs. The FOCs explained that despite the FOCs achieving their benchmark in CP4, the benchmark has moved in favour of Network Rail which has limited the incentive for long term improvements. The increased charges in CP5 are significant and are of concern to the FOCs because of the materiality of the payments versus the small profit margins of FOCs, as one FOC explained: *“A 10 minute train delay can wipe out the train’s profit.”*

This concern over the changes to the performance regime has already led one FOC to cancel 25% of its trains in the intermodal part of their business. There was a view therefore that Schedule 8 could have a significant negative impact on rail freight growth in CP5.

2.3.2.4 Funder

Message	Quote	
There is limited evidence of Network Rail investing sufficiently to mitigate Schedule 8 payments	<i>“Network Rail tend to accept costs of schedule 8 payments or fines for underperformance. Network Rail need to make bigger investments to mitigate schedule 8 payments”</i>	Funder
There were occasions when schedule 8 impacted on operators profitability	<i>“Some TOCs have a full risk contract so significant swings in schedule 8 payments can affect the profitability of a franchise”</i>	Funder
There was a view that schedule 8 drove inefficiency simply by passing money between organisations. The allocation of delay minutes created significant admin burden	<i>“Schedule drove industry cost through the administration of schedule 8...650 people are employed in the process of delay minute attribution”</i>	Funder

Funders observed little evidence of schedule 8 impacting on the behaviour of Network Rail and suggested this was because the charges were not sufficiently material. In this case, schedule 8 acted as simply a compensation mechanism as opposed to a driver of performance. Most funders however were confident that over CP4, when there were problems on the railway the industry did react to do the right thing and focus on getting passengers home. Schedule 8 as an incentive for performance is therefore less important in these situations. However for the more usual running of the network, there was a view that Network Rail needed to make more significant investments to mitigate schedule 8 payments and poor performance.

2.3.2.5 Contractor

Message	Quote	
The extent of schedule 8 impact depended on the type of commercial agreement. However reputation was much more key to driving behaviours than financial penalties	<i>“Reputation is a much more important driver of performance than schedule 8. There is a saying in the industry, “you are only as good as your last weekend”</i>	Contractor
Penalties can promote better ways of working	<i>“Penalties can promote, greater programme management training etc. but need to be proportional and ensure there are opportunities for gain if savings are made”</i>	Contractor

There is evidence that pain/gain contracts have greater impact on driving efficient working	<i>"The pain/gain contract gives us a strong incentive to be efficient and these type of contracts require a greater level of planning"</i>	Contractor
Penalties can drive industry cost for the delivery of possessions	<i>"The risk of schedule 8 penalties can drive contractors to build in more costs to avoid causing penalties e.g. additional resource"</i>	Contractor
Risk of penalties can drive in efficiencies in the delivery of works and potential short-cuts	<i>"The risk of penalties for an over-run could lead us to overstaff projects and programme in contingency. Where contingency can't be built it, this has the danger to lead to shortcuts"</i>	Contractor
There is evidence that the risk of schedule 8 payments has caused contractors to cancel work	<i>"This has in some cases, prevented us from accepting work because of schedule 4/8 costs. For one job due to adverse weather conditions we were concerned that we wouldn't be able to complete the job on time and cancelled the work. In this instance, the regime did what it was meant to do- it made us cancel work that we couldn't guarantee that we could deliver. However this work will now be put back and improvement to the network delayed"</i>	Contractor
There is evidence that the risk of schedule 8 payments have caused contractors to turn down work at the tender stage.	<i>"Penalties can make the risk of work too high, we could lose all profit."</i>	Contractor
The challenge of administering penalties can cause deterioration in relationships	<i>"Some of the penalties are difficult to administer- if we cause a problem we don't always feel the pain as the complexity of administration causes Network Rail to take on the cost. This can lead to deterioration in relationships."</i>	Contractor

The direct impact of Schedule 8 on contractors in CP4 depended on the type of contract the contractors had with Network Rail. Where Schedule 8 did directly impact the contractors there was a view that it had helped provide a focus on better planning. The relative impact of the schedule 8 payments differed between contractors based on how material the payments were. For some the penalties were material and could impact profit, making them a greater driver of efficiency while for other contractors the penalties carried little weight. Contractors with pain/gain contracts explained that these contracts were a more powerful driver of efficient working than contracts where just the penalties passed through, due to the potential rewards they could receive. While all the contractors agreed that Schedule 8 had some impact on driving performance it was a relatively small impact. For contractors in the rail industry the greater driver of performance was the reputational risk of not delivering what they said they would deliver on time. Reputation is key for maintaining a successful customer relationship with Network Rail and securing more work.

There was evidence in CP4 that the risk of schedule 8 payments influenced contractors to assess more carefully whether they were able to carry out the required works in the timeframe available without risk of over-run. In some cases this led contractors to cancel works or turn down work at the tender stage. In these situations schedule 8 helped to mitigate the risk of delays to operators as a result of over-runs.

For some contractors, there was evidence that the risk of schedule 8 payments led perverse behaviour that did not promote cost-efficient delivery of works. The uncertainty of schedule 8 payments led to examples where contractors built in the risk into the costs of works and in other cases, contingency was built into the delivery plan. A more concerning perverse outcome occurred when that contingency was not available, with

one contractor explaining there was a risk that short-cuts would be taken to deliver the work without any over-runs.

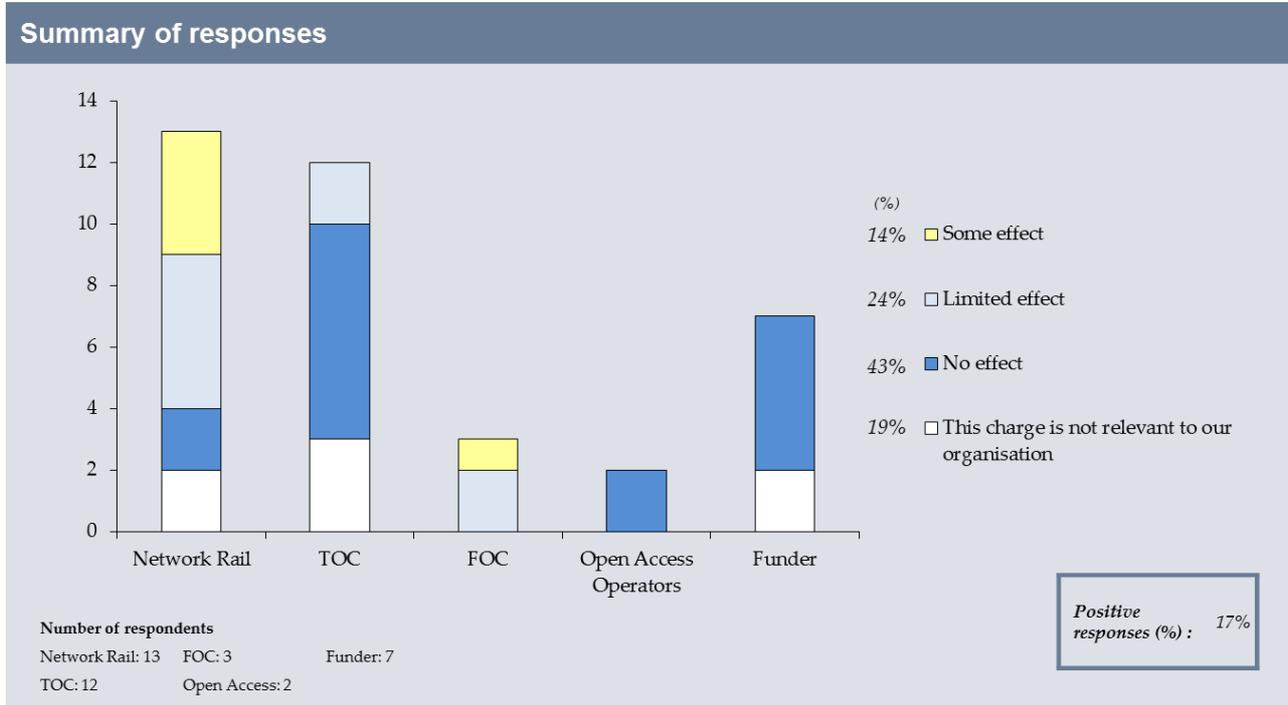
There was evidence in CP4, that delay minute attribution led to conflict in the Network Rail and contractor relationships as one contractor explained, “the circumstances that give rise to an over-run are never straight forward which can lead to commercial bun-fight”. One contractor also explained how the challenge of administering penalties can result in Network Rail accepting the cost which again is damaging for the Network Rail and contractor relationship.

Schedule 8 had less impact on day to day decisions although in some Network Rail routes Schedule 8 influenced where maintenance should take place. Schedule 8 had greater impact on Network Rail strategic decisions such as investment in performance initiatives and the running of additional services. In this case Schedule 8 did not drive the decisions but helped inform and influence them. Schedule 8 provided some incentive for TOCs and FOCs to improve performance to reduce S8 payments but for the TOCs this was overshadowed by more material performance drivers such as profit maximisation and compliance with Franchise Agreements.

2.4 Volume Incentive

2.4.1 Volume Incentive Impact– Industry Overview

Figure 12: The extent to which the Volume Incentive impacted behaviours in CP4



The Volume Incentive had minimal impact on rail industry behaviours in CP4. This was due to the small materiality of the charge and its accumulation into one budget at the end of the control period.

2.4.2 Volume Incentive - Operational Examples

Operational examples segmented by party:

2.4.2.1 Network Rail

Message	Quote	
The Volume Incentive was relatively unknown	<i>"I think the volume incentive has had little impact and is relatively unknown"</i>	Network Rail
Little impact on decisions on whether to run additional services, greater focus is on the potential performance risk	<i>"Because PPM is such a focus, people are nervous about maximising network capacity, some routes are very congested and allowing more services on these routes does drive very little profit gain compared to the strain it would put on PPM. The trade-offs you might observe in other industries between capacity utilisation and driving profit are muted in rail."</i>	Network Rail
There was opinion from the routes that the Volume Incentive could become more significant as it moves to the routes in CP5	<i>"The volume incentive was more well known in the centre as they had control over how to spend the accumulated fund at the end of the control period. The volume incentive therefore felt very distant to the routes. Moving the volume incentive to the routes will have more impact as the responsibility will lie with the people who can have most influence"</i>	Network Rail
Network conducted analysis to show that there was very little marginal financial gain to allowing more services onto the network	<i>"The interplay between S8-volume incentive- capacity charge does not incentivise NR to run more services. On some routes there are minimal gains, on others; it makes more (financial) sense to run fewer services"</i>	Network Rail

The view of the Volume Incentive was similar across the entirety of Network Rail. It had minimal impact on business decisions with the majority commenting that it was relatively unknown. One route explained how they only found out about the Volume Incentive through the Periodic review at the end of CP4.

When deciding whether to run additional services, the key considerations were whether the capacity was available and the potential impact on performance not the Volume Incentive offered: *"When looking at introducing new services, we look at the capacity available and the resulting performance risk. Schedule 8 consequences would be considered as part of the performance risk... The volume incentive would have minimal impact."*

2.4.2.2 TOC

Message	Quote	
Most operators did not support the Volume Incentive, and some were not even aware of it	<i>“Unnecessary layer which should be rolled-up into another charge. TOCs do not want so much complexity”</i>	TOC
	<i>“This charge is not visible enough”</i>	TOC
	<i>“This charge has no incentive properties or impact on decision making – it should be abolished”</i>	TOC
	<i>“This is so opaque that it has no effect”</i>	TOC
	<i>“The charge is so poorly understood, particularly within NR, that it fails to achieve the desired effect despite being set at a rate that over-compensates NR for any additional risk from increased maintenance costs”</i>	TOC

2.4.2.3 FOC

Message	Quote	
Minimal impact on behaviours as the FOC community as the incentive was funded by the government	<i>“The volume incentive is paid purely by the government so has limited impact on FOCs”</i>	FOC

There was little evidence of the impact of the Volume Incentive on FOC behaviours in CP4. This was a result of the incentive being funded by the government. However the FOCs were critical of the incentive due to its scope over the whole control period, as one FOC summarised, *“If there was sufficient underperformance in year one of the control period this would prevent the incentive from being relevant for the rest of the control period. It would have been much better to have an annual review and allocation of payments.”*

2.4.2.4 Funder

Message	Quote	
The volume incentive doesn't incentivise Network Rail to run more trains	<i>“The volume incentive is too small. It is just a token incentive”</i>	Funder

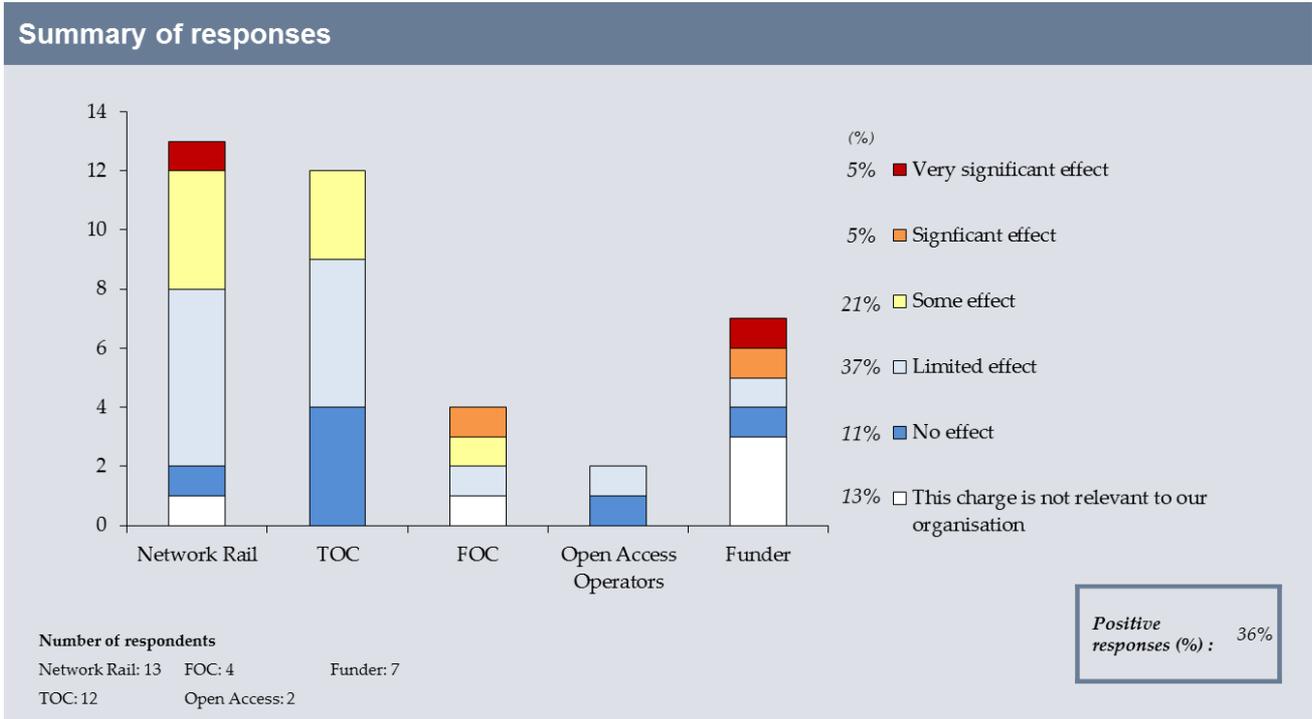
There was no evidence of the Volume Incentive having impact on funder behaviour or Network Rail behaviour. The Volume Incentive was too small to have significant impact. The funder also criticised the incentive for its focus on volume of trains rather than the wider social economic value of trains.

The volume incentive had minimal impact in CP4. The incentive was small in value and overshadowed by performance considerations. It therefore provided minimum incentive for Network Rail to run additional trains on the network. The incentive was not well understood in the Network Rail routes.

2.5 Capacity Charge

2.5.1 CC Impact– Industry Overview

Figure 13: The extent to which the capacity charge impacted behaviours in CP4



The capacity charge had some impact on rail industry behaviours with a greater impact on funders and Network Rail behaviour. In some routes and in Network Rail centre the capacity charge was considered as part of the decision on whether to run additional train paths although its materiality limited its influence. The capacity charge particularly impacted on funders funding regional services where the capacity charge was a significant cost of running an additional service.

2.5.2 CC - Operational Examples

Operational examples segmented by party:

- **Network Rail**

Message	Quote
The capacity charge had some impact on decisions to offer additional train paths	<i>"This was part of the equation for evaluating whether to offer train paths, though this only really happened in the last 2 years"</i> Network Rail
There was limited evidence that the interaction of the capacity charge with schedule 8 was understood.	<i>"The interaction of the capacity charge and schedule 8 is murky"</i> Network Rail
There was evidence that the capacity charge offered insufficient incentive for Network Rail to run additional services	<i>"NR has conducted analysis that shows there is very little marginal financial gain to allowing more services on to the network, in that sense, the interplay between S8-volume incentive- capacity charge does not incentivise NR to run more services. On some routes there are minimal gains, on others, it makes more (financial) sense to run fewer services."</i> Network Rail

The capacity charge had some impact on Network Rail decisions. Where it was considered, it was just one financial considered as part of the assessment on all costs and income of offering additional train paths and here the materiality of the charge was too small to change the outcome of the decision. Decisions on whether to run additional trains in CP4 therefore focused instead on whether there was sufficient capacity and the associated performance risk to Network Rail. Schedule 8 was considered as part of the associated performance risk.

There was evidence in CP4, that the capacity charge was insufficient in size to accommodate the increased schedule 8 payment risk of new services. In May 2011 post an increase in East Coast traffic, one route analysed the increase in capacity charge income and the increased risk and the outcome showed that Network Rail was exposed to the performance risk. Network Rail was therefore not incentivised properly to increase services. The decision to increase services was therefore made for the benefit of the industry through additional revenue and not for Network Rail. The capacity charge provided little incentive for this decision.

2.5.2.1 TOC

Message	Quote	
In CP4, the Capacity Charge (CC) had a low impact on decision making for most operators	<i>"Not well understood and not factored into decision making"</i>	TOC
	<i>"It has little Impact on our decision making and is treated as a fixed cost"</i>	TOC
	<i>"It is included as a cost when looking at additional services – but it's not material enough to drive any decisions"</i>	
	<i>The CC is an unnecessary layer of complexity – and could be part of the VUC"</i>	TOC
	<i>"The CC was too small in CP4 to affect our decision making"</i>	TOC
Opinions on the Capacity Charge were mixed.	<i>"The significant increase in this charge in CP5 could stop additional services from being provided, as the business case will not stack-up"</i>	TOC
Most TOCs in the sample did not support the capacity charge and felt that it would be too high in CP5	<i>"Our business cases are already marginal, and the increase in the CC in CP5 will make it almost impossible to get a positive business case for service enhancements, which could be of benefit to passengers. It could certainly effect the commercial viability of extra services for special events, leading to severe over-crowding on existing services"</i>	TOC
	<i>"It is a cost line in the business case for marginal services. But I do not support the CC. It is hard to forecast and to justify economically"</i>	TOC
	<i>"The increase in the CC in CP5 will mean a re-assessment of each business case for marginal services, and potentially for services to be withdrawn if they are no longer cost effective"</i>	TOC
	<i>"Also, it will be difficult to complete with existing OA operators for new services, as these operators will continue to pay the CP4 CC rate, as negotiated with the ORR"</i>	TOC
An TOC and Transport Owning Group both supported the Capacity Charge and felt that the increase in CP5 was the right decision	<i>"The increase in CP5 is a positive step. It will make operators think carefully about the economic value of the path they are using, and send the correct market signals"</i>	TOC
	<i>"This is a good incentive because it makes operators think more carefully about the real value and cost of the path they want to use. The rail</i>	

industry has been pushed towards high frequency timetables with shorter trains, as this drives higher demand. These timetables are now embedded and prescribed in Train Service Requirements (TSRs) for franchise bids. The consequence is a full infrastructure and need for expensive enhancement projects to accommodate any additional traffic. The increase in CP5 will send the right market signals in terms of the value and cost of each path"

Transport Owning Group

2.5.2.2 FOC

Message	Quote	
There was limited evidence that the capacity charge helped to manage the capacity on the network	<i>"The capacity charge in theory makes sense but in reality it doesn't relate to capacity on the network. It has just become a tax on additional services"</i>	FOC
The capacity charge had limited impact on driving FOCs to be more efficient with the capacity they were allocated	<i>"The capacity charge did not drive our decisions to run longer trains."</i>	FOC

There was a view from the FOCs that as a congestion tax, the charge actually constrained the available network rather than allowing operators and Network Rail to make the most use of it. The view of the FOCs was that the establishment of the freight team at Network Rail was a bigger driver of more efficient capacity use of the network.

There was a move by FOCs to running longer trains over CP4. This was not a result of the capacity charge but was instead driven by commercial reasons as FOCs looked to increase the efficiency of their operations. The majority of freight costs are in the operating costs of the locomotive so running longer trains reduced these costs per unit/wagon allowing freight operators to be more cost competitive.

2.5.2.3 Funder

Message	Quote	
Funders felt there was little evidence that the capacity charge improved capacity of the network in CP4	<i>"ORR believes that the capacity charge encouraged FOCs and TOCs to re-route their services. However there was very little opportunity to influence re-routing with this charge as the rates were roughly homogenous across geographical areas and didn't accommodate congestion on the tracks"</i>	Funder
For larger funders the capacity charge was considered as just one cost in the assessment of costs to run additional services	<i>"The capacity charge is just one of the many costs that are considered in the financial costs of an additional service."</i>	Funder
For larger funders performance risk and capacity had a greater impact on the decision to run additional trains	<i>"In CP4, we wanted to run additional services into one of the London terminals at peak time. We decided that the performance risk was too significant and therefore the additional services were not contracted"</i>	Funder
	<i>"We wanted to extend the one of our lines to link more deprived areas with employment opportunities in the larger city. The line is very congested so additional services would require significant investment."</i>	

	<i>Despite its wider economic benefit. This is just not possible"</i>	Funder
There was evidence that the capacity charge had significant impact on the decisions by smaller funders on whether to run additional services	<i>"We fund service enhancements on a main line. Capacity charge made up 20% of the entire cost of this enhancement where we were charged exactly the same rate for running on an uncongested part of the network as running into a busy station at the height of the peak. This level of cost was unsustainable to us and led to the funding for the enhanced weekday off-peak service being withdrawn."</i>	Funder

There was limited evidence presented to the funders that showed that the capacity charge had any impact on managing capacity of the network but rather it was just a congestion tax on additional services and therefore had a direct impact on the cost of running additional services.

The extent to which the capacity charge capacity charge impacted on the decision to run additional services differed among the funders. All funders considered the capacity charge when assessing the case for additional train services but it had more influence on the smaller funders than the larger funders. For the larger funders, this capacity charge had marginal impact due to its small value.

For some of the smaller funders however the capacity charge had significant influence on decisions on additional train paths in CP4, due to its materiality. In the example above the capacity charge made up 20% of the costs of additional services resulting in their cancellation. The funders also argued that this capacity charge vastly overstated the additional cost to Network Rail to run these additional trains.

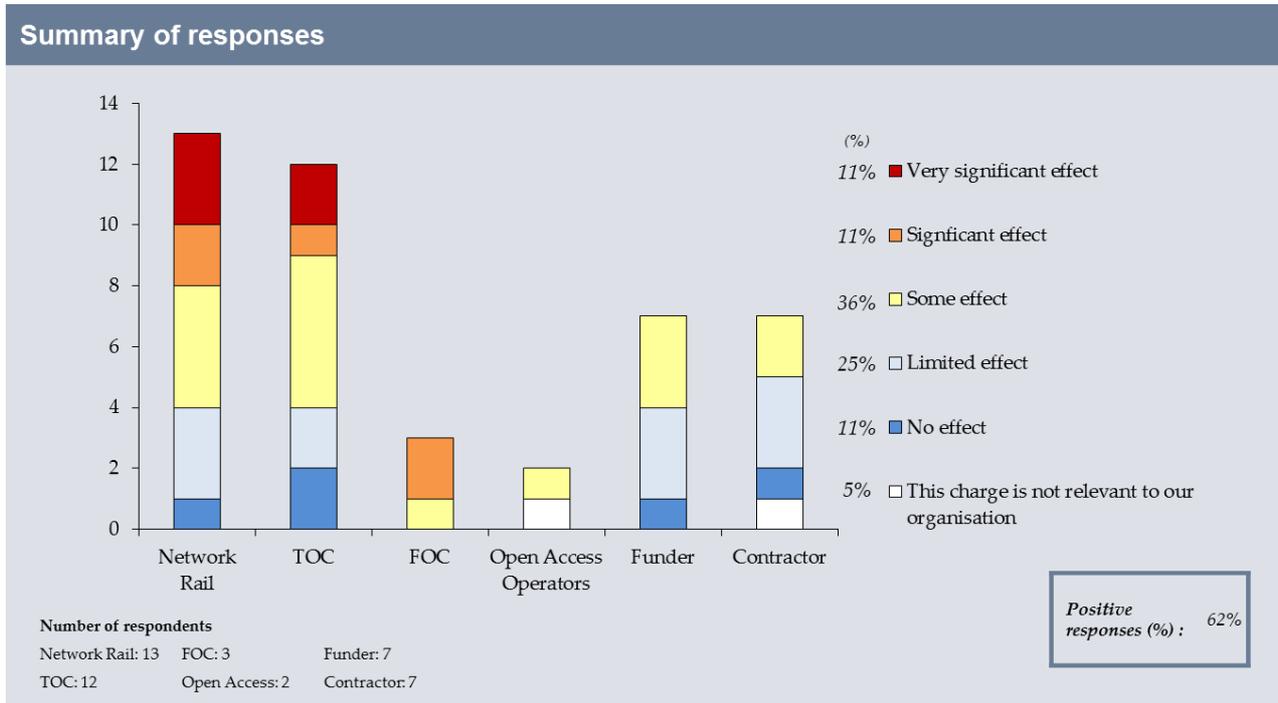
When discussing the capacity charge, funders also raised more general points about capacity allocation. The network is limited by capacity and operators/ funders compete for this capacity. Some funders were of the view that a better method of assigning capacity was desperately needed. There was frustration from some funders that the commercial opportunity of intercity trains always seemed to be preferred over the wider economic value of regional trains. One funder noted an increase in long-distance services in their area which prevented the running of more regional trains. There was a view that potentially the capacity charge could be adjusted to help support the case for regional trains.

The capacity charge didn't incentivise Network Rail to add additional services and had limited impact on distributing congestion across the network with funders viewing regional rail services as unfairly impacted by the charge.

2.6 Schedule 4

2.6.1 Schedule 4 Impact– Industry Overview

Figure 14: The extent to which schedule 4 impacted behaviours in CP4



Schedule 4 had significant impact on Network Rail, TOC and FOC behaviours but discussions with these industry parties revealed that schedule 4 was rarely the key driver of behaviours but rather one factor of many considered. The importance of Schedule 4 therefore depended on its relative materiality.

2.6.2 Schedule 4 - Operational Examples

Operational examples segmented by party:

2.6.2.1 Network Rail

Impact of schedule 4 on the planning of possessions

Message	Quote	
The discounts offered by schedule 4 drove earlier planning in the routes. However in the centre the impact was limited.	<i>"At the beginning of CP4 the Schedule 4 budget was held centrally and I agree that it had minimal impact on possessions decisions. In the last two years, the schedule 4 budget has moved to the routes and raised the profile of schedule 4"</i>	Network Rail
There was evidence that the discounts offered by Schedule 4 drove perverse behaviours	<i>"Sometimes possessions will be booked in ahead and then just cancelled nearer the time if they are not needed to benefit from Schedule 4 discounts"</i>	Network Rail
The timings of engagement with operator were not influenced by Schedule 4 but by the size of the project	<i>"Generally the larger the project, the earlier the engagement with the operator... For example we have been speaking with Operators about the works at Banbury station Christmas 2015 for 6 months already"</i>	Network Rail

The evidence gathered in CP4 showed that the impact of schedule 4 on early planning differed depending on where the schedule 4 budgets were managed. Schedule 4 discounts had minimal impact on the timings of possession planning when the budget was managed centrally in Network Rail at the beginning of CP4. Central Network Rail explained that earlier planning was instead driven by the fact that due to the requirements of their licence agreement once the access plan was confirmed, any later possessions could only be accommodated within the limitations of the plan. This lack of flexibility meant that teams requesting later possessions were met with significant resistance and were not always able to have their plans the way they had originally intended them.

Schedule 4 had more impact on early planning once budgets were transferred to the routes in the second half of CP4. Here the discounts of schedule 4 encouraged early planning with one route explaining how they tracked possessions to identify any that didn't receive the maximum schedule 4 discount to identify why this had occurred and take actions to prevent similar situations happening again.

Schedule 4 appeared to have little impact on Network Rail engagement with the operators on upcoming possession plans. Central Network Rail explained that operators tended to be engaged earlier for major projects than for minor projects; however this was driven by project delivery requirements rather than Schedule 4. There was an appreciation from Network Rail, that while the engagement with TOCs had improved with larger projects, Network Rail were inconsistent with their approach and there was scope for further improvement.

There was evidence that the engagement with operators improved when the Schedule 4 budgets were transferred to the routes. Access planning relies on relationships and Network made an organisational change which re-enforced this, with the introduction of route planning managers whose role was to co-ordinate possessions with the TOCs. The introduction of the role was driven by the need for good customer service rather than Schedule 4. The movement of schedule 4 budgets and the consequent introduction of route planning managers therefore had a greater influence on the engagement of operators than schedule 4 itself.

Impact of schedule 4 on the delivery of possessions

Message	Quote
Schedule 4 is one of the factors involved in the decision on which type of possessions strategy to adopt	<p><i>“Projects would estimate Schedule 4 costs before deciding what type/length of possessions to book”</i></p> <p style="text-align: right;">Network Rail</p> <p><i>“Schedule 4 is not the sole driver but it is one of the factors involved in decision making on possessions. For example the cost of Schedule 4 played a part in the decision to move away from a blockade strategy at Watford Station”</i></p> <p style="text-align: right;">Network Rail</p> <p><i>“I don’t believe the schedule 4 payment is sufficiently large to outweigh the other factors and is therefore not a key driver of behaviours. For example we closed part of the Northern route for a week. We discussed schedule 4 implications however decided it was still in the best interest of operators to take this approach. This over-rode schedule 4 implications”</i></p> <p style="text-align: right;">Network Rail</p>
The extent to which schedule 4 impacted decisions on the type of possessions differed among the routes.	<p><i>“Schedule 4 is less of an influence on type of possession... This is more about customer service and minimising disruption to passengers Imagine we will start thinking about Schedule 4 more in the future as it can save a lot of money”</i></p> <p style="text-align: right;">Network Rail</p> <p><i>“The relative importance of Schedule 4 will depend on the relative cost of schedule 4 versus total project costs</i></p> <p><i>If we are already tight on budgets- we might be more firm on conducting the possession in the original way it was forecasted”</i></p> <p style="text-align: right;">Network Rail</p>
The central team took actions to raise the awareness of Schedule 4 costs	<p><i>“We have worked with many areas to educate people and try to reduce the schedule 4 costs that Network Rail pays out. This means working with projects, timetable planners, access planners, commercial teams etc. to educate them about these costs”</i></p> <p style="text-align: right;">Network Rail</p>
Schedule 4 in some cases has driven a more innovative approach to a conduction of possession	<p><i>“In one instance instead of paying a schedule 4 charge we trained drivers on an additional diversionary route... the costs were more than paid more by the savings in schedule 4 costs”</i></p> <p style="text-align: right;">Network Rail</p> <p><i>“If we had already proposed a blockade then due to the schedule 4 costs we might try to piggyback off that blockade and do more work at the same time that was scheduled for later in the year... In the same way we also look to work at other stations that are effectively cut off by a blockade. For example if you blockade Birmingham you might as well blockade Wolverhampton”</i></p> <p style="text-align: right;">Network Rail</p>
Some routes were looking to increasingly understand the whole industry cost of a possession	<p><i>“The IAP tool has been much more powerful at driving smart behaviour than Schedule 4... The IAP tool at whole industry cost for a piece of work; costs to NR, operators etc”</i></p> <p style="text-align: right;">Network Rail</p>

In CP4, the evidence again showed a difference between the impacts of Schedule 4 on the delivery of possessions in central Network Rail versus the routes. When the budget resided in central Network Rail, it had limited impact. Schedule 4 costs were calculated later on and only drove a late change to the possession approach if the costs were very material. Once the budget moved to the routes, Schedule 4 was then much more consistently considered as one of the factors in deciding how to carry out a possession, with an estimation of schedule 4 costs being a compulsory part of a possession proposal.

As CP4 progressed, there was a greater recognition in some of the routes of the importance of considering the impact of possessions on the industry as a whole and not just as the cost to Network Rail. This was not driven by Schedule 4 but by the adoption of a more collaborative approach to possessions with the operators. Collaborative working generated sensible discussions about the best approach for possessions and was key for driving a greater acceptance towards longer blockades in CP4 as TOCs where able to greater understand the increased efficiencies of the longer blockades. TOCs were also more inclined to consider blockades more favourably following well-performing precedents such as the Ipswich Tunnel blockade.

Alliancing reinforced this collaborative approach to possessions. In one example it was agreed at the executive level that there would be a more flexible approach to overruns in the morning. The increased leniency on over-runs allowed more efficient working and allowed works to be completed more quickly.

2.6.2.2 TOC

For passenger operators, the Schedule 4 regime is designed to be financially neutral provided that Network Rail delivers its baseline plans efficiently. Franchised passenger operators pay an Access Charge Supplement (ACS) equal to the forecast cost and revenue impacts of possessions. The ACS permits recovery of baseline Schedule 4 costs by Network Rail. In return for the payment of the ACS, Schedule 4 provides formulaic cost and revenue compensation to operators for possessions. However, Schedule 4 payments to operators may be higher or lower than the ACS depending on the actual possessions.

Message	Quote
Most operators understood the thinking behind Schedule 4, but for the majority it had no impact on their decision making	<i>"It may be good economic theory, but in practice is too complex.</i>
	<i>We see this as a requirement on NR and it's doesn't affect our decisions or behaviour. We do work with NR to minimise delays – but this is driven by our Concession Agreement and not Schedule 4"</i>
	TOC
	<i>"We are not able to challenge the ACS – it's a cost that we accept and therefore has no effect on decision making"</i>
	TOC
	<i>"The Network Code (the set of common rules and procedures behind the contractual relationship between operators and Network Rail) overwhelms any incentives from Schedule 4. The Schedule 4 regime works OK and personally I don't think it is that complex – but I know a lot of people do find it hard to understand"</i>
	TOC
	<i>"Schedule 4 does not affect our decision making</i>
	<i>We work closely with NR to minimise disruption to our passengers – but this is not driven by Schedule 4"</i>
	TOC
	<i>"I was involved in the design of Schedule 4. I believe the regime works well and does what it is supposed to do. The ACS simply provides a visible benchmark for NR. And the certainty we get from schedule 4 in respect of revenue and costs allows more open discussions to take place"</i>
	TOC
	<i>"The Schedule 4 regime is well understood by the bid team and does</i>

	<i>lower the risk premium"</i>	Transport Owning Group
There were mixed opinions on how well it compensated operators for possessions, but most operators felt it was about right over the long term	<i>"In general we feel that Schedule 4 covers our costs for short weekend possessions, but not for longer possessions which run into weekdays."</i>	TOC
	<i>"The formulaic nature of Schedule 4 means that it's not 100% cost reflective. Sometimes it overcompensates and sometimes undercompensates - but we think it evens out in the long run"</i>	TOC
One operator felt the a better mechanism was required, which may not be a financial lever, but focused on how to drive collaboration within the industry	<i>"Overall, I think a better mechanism is required to bring the parties together earlier and incentivise the right behaviour in terms of planning engineering works"</i>	TOC
Generally Schedule 4 had no bearing on possessions planning with NR, but it did impact the planning of alternative services around possessions and help TOCs to understand the additional costs versus the compensation received	<i>"Schedule 4 is not really part of our calculations or decision making when it comes to planning possessions. The regime is far too opaque."</i>	TOC
	<i>"We do not see Schedule 4 as a big incentive but it does influence the planning of replacement bus services or rail diversions – we take into account the payments from Schedule 4 and try to ensure that we remain financially neutral"</i>	TOC
	<i>"The focus for TOCs is on cost recovery – Schedule 4 does not drive decision making with respect to planning possessions"</i>	TOC
	<i>"Schedule 4 does sometimes incentivise TOCs to think about the level of bus replacement solutions, compared to what we may receive in compensation"</i>	TOC
There is a perception among some TOCs that Schedule 4 did not incentivise the right behaviour from NR	<i>"The planning & management of possessions is so poor – it seems there are other drivers here, possibly around engineering contract penalties between NR & contractors"</i>	TOC
	<i>"There is a perverse incentive to plan possessions in advance at a discounted rate and then cancel at late notice"</i>	
	<i>Under a path charging system, Schedule 4 could simply be a path charge rebate"</i>	TOC
	<i>"Provides a perverse incentive for NR to package work into more numerous (and hence disruptive) but shorter sub 60 hour blockades (Type 1), and reduce their exposure to the £10k Schedule 4 'additional cost' compensation from operators"</i>	TOC
The move to route level was seen as a positive development and had led to	<i>"We think the move to route level is a good thing as this will mean RDs are held accountable for their Schedule 4 budget. It may also lead to a</i>	

better possession planning

closer working relationship between NR and TOCs

TOC

Most operators supported the thinking behind Schedule 4 and the certainty it provides does reduce risk. But it did not impact operators decision making and in some instances led to perceived perverse behaviour from NR. For example it was felt that Schedule 4 provided a perverse incentive for NR to package works into more numerous but shorter sub 60 hour blockades. This can actually be more disruptive for TOCs.

2.6.2.3 FOC

Message	Quote	
Schedule 4 is an appropriate structure to administer compensation of possessions on the network	<i>"The structure of the charge is fine. The rates of compensation are wrong"</i>	FOC
The FOCs felt that that the compensation rates didn't incentivise Network Rail to minimise disruption to FOCs	<i>"Payments to passenger operators are higher than FOCs, this can lead to Network Rail to focus on minimising disruption to passenger operators"</i>	FOC

There was a view that the higher rates of the schedule 4 payments to TOCs over FOCs led Network Rail to focus on minimising disruption to TOCs, for example by increasing the proportion of night-time possessions. However 60% of freight traffic runs at night so this was completely against the interests of the FOCs. In addition, the FOCs didn't feel that the compensation of Schedule 4 rates was sufficient to accurately compensate for the impact possessions can have on FOCs, as possessions can impact the FOC's ability to fulfil their customers' requirements and can lead to loss of business.

2.6.2.4 Funder

Message	Quote	
There was evidence that schedule 4 was not sufficient to protect the value of franchise bids from the impact of possessions	<i>"There are examples where long term possessions have devalued the value of franchises and depressed the tax payer's return on investment"</i>	Funder
Evidence that schedule 4 costs limited the amount of investment in specific projects	<i>"On the majority of our routes, we have only one operator. We are currently sponsoring a scheme for lift improvement at the station. Part of these costs includes Schedule 4 however the closure is for our benefit the benefit of the operator. It doesn't make sense to pay schedule 4 costs. These costs could have been invested into a better lift system which would have in turn have had a better impact on passengers".</i>	Funder
The Funders observed little evidence of Schedule 4 having incentivised Network Rail's behaviour	<i>"The reputational risk of poor management of possessions is a greater driver of Network Rail behaviour than schedule 4. The regime does not offer a strong enough financial incentive for Network Rail"</i>	Funder
The rates of schedule 4 payments had perverse outcomes in CP4	<i>"There were occasions where TOCs made more money through Schedule 4 than the revenue they would have received if they had run a particular train"</i>	Funder
	<i>"Schedule 4 can financially incentivise to TOCs to run buses over diverting trains and take the Schedule 4 payments from NR even though this is not in the interest of passengers"</i>	

	Funder
Funders felt that Schedule 4 was inefficient with unnecessary money passing between organisations	Funder

Impact on Network Rail behaviour

Funders stated that there was little evidence that Schedule 4 incentivised Network Rail to reduce the impact of possessions on operators. Instead funders suggested Network Rail saw the schedule 4 regime as simply an accepted cost of doing business on the railway. Where funders had observed Network Rail trying to minimise the disruption of possessions it was suggested that Network Rail were more motivated by reputational risk rather than schedule 4 payments.

Structure of the charge

The funders gave evidence where the rates of schedule 4 led to perverse outputs for example occasions where TOCs received more money for schedule 4 than for the revenue of a train. The schedule 4 could also financially incentivise TOCs to use buses rather than direct trains which would not be in the best interest of customer. However despite this, funders actually observed an improvement in operators diverting trains rather opting to use buses. Although funders were of the view that this was driven by pressure from passengers and commercial reasons rather than Schedule 4.

2.6.2.5 Contractor

Message	Quote
There was limited exposure of contractors to the schedule 4 influence on the planning of possessions	<i>“Schedule 4 is relatively invisible. At the tender stage we are shown the possession strategy and asked to work within that”</i>
	Contractor
Contractors felt that schedule 4 influenced Network Rail towards shorter possessions	<i>“The unit cost of work decreases with the length of a possession, longer possessions are much more efficient. However this is completely different to the current strategy of rail”</i>
	Contractor
Contractors gave examples where schedule 4 costs influenced Network Rail to make late changes to the access available for a project	<i>“For a xxx project, we were originally given an x hr access slot and we planned our delivery around this. Network Rail then reduced the access because of Schedule 4 costs. We were informed very last minute and not told what the costs were or given the opportunity to share in the savings. If we had been told earlier, it would have been easier to have planned the project accordingly”</i>
	Contractor
There was appetite from contractors to be more exposed to the planning of works including schedule 4 costs	<i>“We want to operate in the best interest of the Railways- we have a strong legacy in rail and have made significant contributions over the years. Alliancing would be a stronger driver of efficiency. Steps have been taken towards this with the tender and alliancing strategies... There is still more that can be done”</i>
	Contractor

Impact of Schedule 4 on planning of works

Contractors planned works carefully to be able to deliver works in the timeframe allocated by Network Rail. This was driven by reputation and wanting to deliver works efficiently. There was also some consideration for not wanting the schedule 8 payments on an over-run. However there was evidence of where Schedule 4 impacted on planning where contractors were in pain/gain contracts. In this case contractors had visibility of the schedule 4 costs allocated to the project and had the opportunity to reduce the costs and benefit in the performance payment. This did drive contractors to test different approaches to the work to find an alternative method of delivery that would benefit the schedule 4 costs.

Impact of Schedule 4 on the delivery of works

The contractors believe that due to the differential payment rates by type of possession within Schedule 4, there is a preference within Network Rail for shorter possessions. However this is the most inefficient approach for the contractors and can result in works taking considerably longer than they otherwise would. There was a strong view from contractors that the industry needed to review its approach to shorter/ versus longer possessions to reduce industry overall costs.

In CP4, there were examples where Network Rail approached contractors, requesting shortened possession times due to wanting to reduce Schedule 4 costs. The occurrence of these instances led one contractor to comment that it seemed that Network Rail were happy for the contractors to pay for the maintenance of the railway. Arguably this behaviour by Network Rail was not really driven by schedule 4 but the late calculation of schedule 4 costs by Network Rail and the late communication of this to its contractors. This lack of early planning also meant that in some instances the scope of the project had changed considerably by time of delivery meaning that the commercial costs agreed during the tender process no longer were relevant. In CP4, this led to commercial bun fights and in some cases a strain on Network Rail-contractor relationships.

The devolution of Network Rail was welcomed by the contractors who hope that this will allow opportunities for discussions on approach similar to the ones they have been able to have with the alliance. For example in CP4 one contractor was able to negotiate directly with the alliance to improve the delivery of projects. *"We negotiated directly and discovered that there we were assuming constraints that were not actually constraints. We found it was easier to cancel later evening trains and pay for taxis for the dozen passengers to allow more efficient working. As more responsibility moves to the regions, we hope there will be more opportunity for these discussions to take place"*. In these situations, personal relationships were more important than schedule 4 for driving the efficient delivery of possessions.

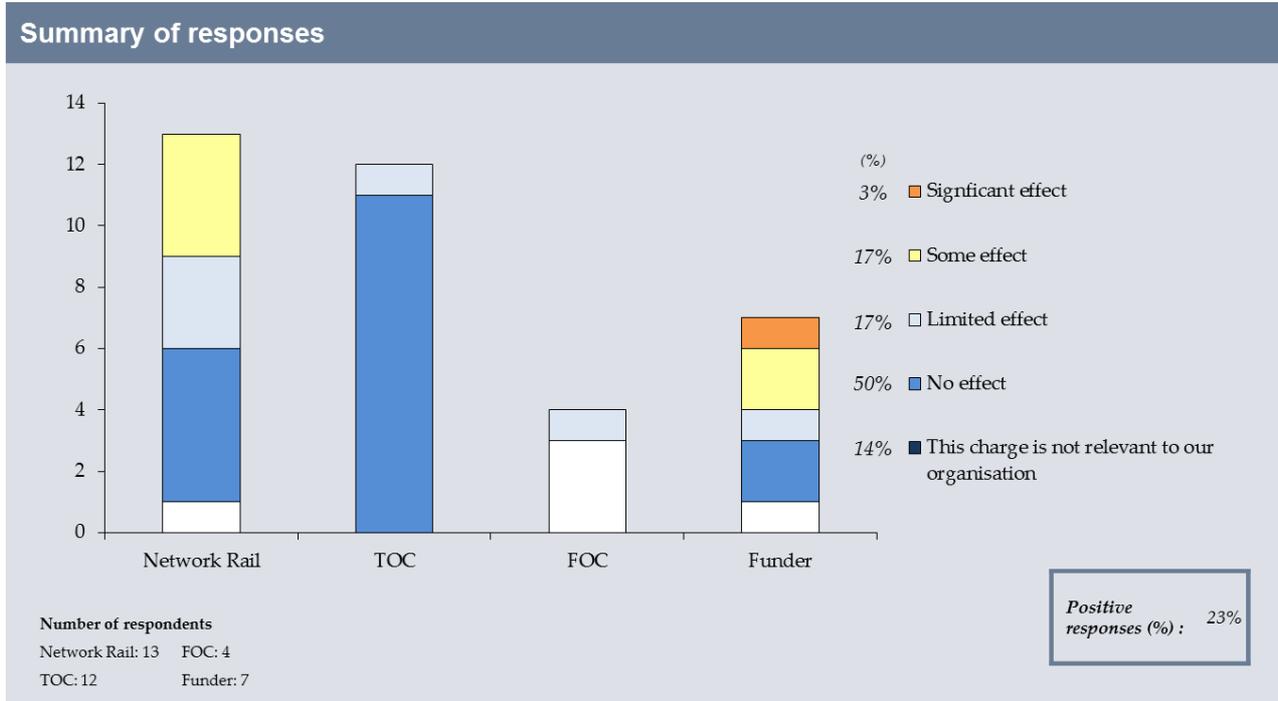
There was significant appetite for the contractors to be involved earlier in the planning process. The contractors felt that they all had significant expertise to offer Network Rail, this expertise not just limited to the specific projects but on Network Rail's approach to managing its asset base. Contractors wanted to be able to benefit from providing this expertise. All contractors preferred the pain/gain contracts and felt this was a step in the right direction but there was still more potential through greater alliancing.

Schedule 4 was considered an effective method to compensate operators for the disruption of possessions but its incentive properties on Network Rail were limited. The consideration of schedule 4 in the planning and delivery of possessions increased when the budget for schedule 4 moved to the routes

2.7 Fixed Track Access Charge

2.7.1 FTAC Impact– Industry Overview

Figure 15: The extent to which FTAC impacted behaviours in CP4



The FTAC had very little impact with the exception of funders. Smaller funders were particularly impacted by the allocation of FTAC.

2.7.2 FTAC - Operational Examples

Operational examples segmented by party:

2.7.2.1 Network Rail

Message	Quote	
The FTAC had limited impact on behaviours	<i>"The FTAC has not changed behaviours as the charge is imposed and we could not do anything about this"</i>	Network Rail
There is little potential to revise FTAC as the national FTAC needs to stay at the same rate	<i>"Should we rebase FTAC based on geographical changes in franchise? The national FTAC needs to stay the same"</i>	Network Rail

While the FTAC is principally about cost recovery its incentive properties are a function of how it is allocated i.e. its cost reflectivity. The cost reflectivity of the charge was perceived as limited and the charge therefore had minimal impact on CP4 Network Rail behaviour.

2.7.2.2 TOC

Message	Quote	
FTAC is a material cost in TOC P&L/bid but because it effectively passes through to the franchising authority, it has limited impact on behaviours	<i>"This is just a large fixed cost that we cannot influence, so has no impact on our bid decisions"</i>	TOC
	<i>"This is a big cost, but it's included in the bid cost base and fixed throughout the Franchise"</i>	TOC
The lack of transparency of the FTAC limits the confidence in cost reflectivity and therefore its incentive properties	<i>"We make sure we get it right, as it's a big number. But it's not a factor in decision making as the TOC can't influence it"</i>	TOC
	<i>It is taken as a given and already included in the cost base at bid stage"</i>	TOC
	<i>"This is just a pass through that we cannot influence, so has no impact on our decision making"</i>	TOC
	<i>"This is fixed cost included in the bid and just a pass through for the TOC. It is a very large number and difficult to scrutinise or audit so has no impact on our decision making"</i>	TOC
	<i>"This is a pass through from HMG to make up NRs funding requirement, so has no impact on our decision making"</i>	TOC
The variable allocation approach is unlikely to make any difference to the incentive properties of this charge	<i>"As FTAC becomes more cost reflective its incentive properties may increase. But we still cannot really influence it in the short term, and it is also factored into the franchise bid, so has no impact on TOC decision making"</i>	TOC
One TOC felt that the balance of NRs revenue requirement could be recovered more effectively in another way	<i>"I would support the FTAC disappearing and becoming part of a 'path charging' mechanism"</i>	TOC

2.7.2.3 Funder

Message	Quote	
Funders thought the only purpose of the charge was to fill gaps in funding	<i>"Appears to be a random fixed charge that only acts as a balancing factor in overall funding settlement"</i>	Funder
There was a view that in CP4, FTAC was not felt to be sufficiently cost reflective	<i>"Government subsidy is split roughly as PTE 15%, intercity 35% and South East 50% but FTAC is split PTE 30%, intercity 30% and South East 40%. Regional rail services are therefore overcharged"</i>	Funder
	<i>"We have to pay the entire of cost of managing the network and through the FTAC our operator has to pay for infrastructure they don't generally use".</i>	Funder
	<i>"Northern Rail franchise is being reviewed at the moment. The cost includes the £150million redevelopment of Kings Cross Station even though it is only one route Northern use"</i>	Funder

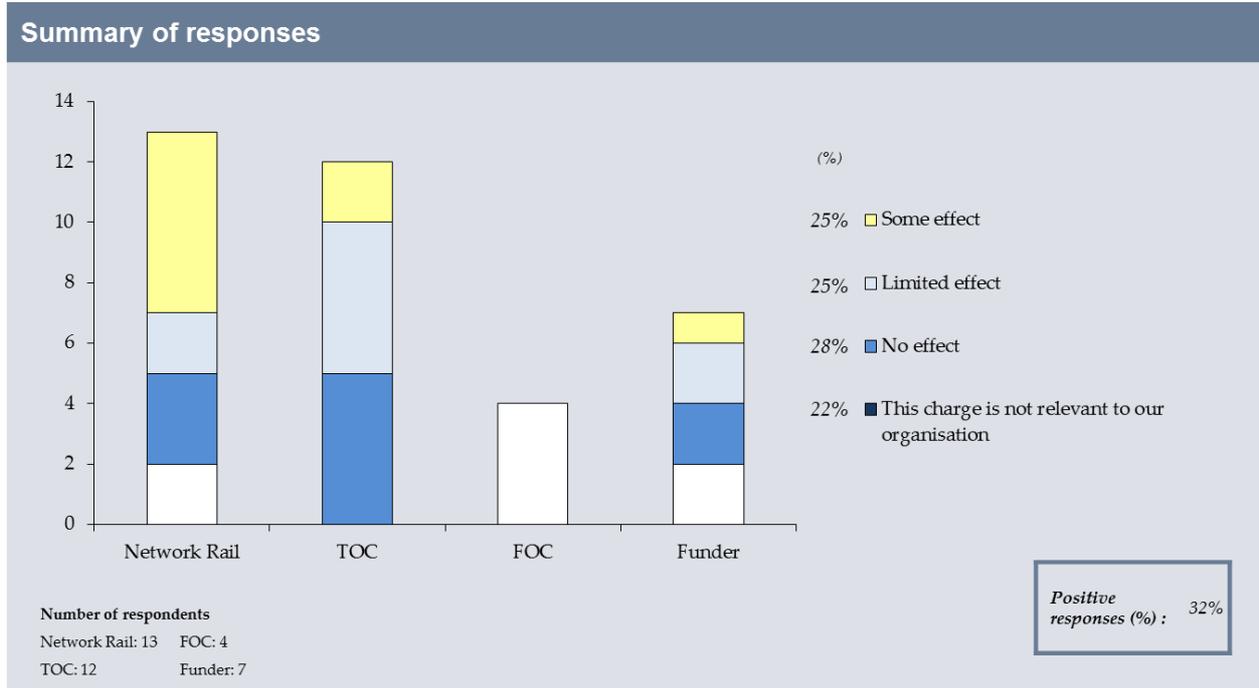
The FTAC and how it was calculated was well understood by the funders however they had strong criticism of its structure and its impact on regional rail services. The funders felt that the charge was not cost reflective and despite Network Rail having increased its understanding of the costs of the running the network there was little evidence that this had been translated into the FTAC. There was a request for greater transparency on how the FTAC from regional services was spent. One funder explained, *"One TOC was considering vertical integrated operations and they struggled to get detailed cost details of FTAC from NR"*. The funders did not want to get rid of the FTAC but make it more cost reflective.

The FTAC had very limited impact on Network Rail and operators. The charge was generally felt not to be cost reflective and its incentive properties were further weakened by it being treated as a cost passed through by the franchising provisions

2.8 Station Long Term Charge

2.8.1 Station LTC Impact– Industry Overview

Figure 16: The extent to which FTAC impacted behaviours in CP4



The station long term charge had very limited impact on the behaviours of the rail industry.

2.8.2 Station LTC - Operational Examples

Operational examples segmented by party:

2.8.2.1 Network Rail

Message	Quote	
The station long term charge had a very limited impact on a route's approach to station management in CP4	<i>"Over the last 12-18 months we have been analysing the National Passenger Survey to identify areas where Network Rail can drive performance improvements. Station facilities are one such example of this. We work with the TOCs to maximise commercial opportunities at the stations. We have a very clear business with a primary objective being customer service and secondarily, to service train passengers. Many of our decisions and actions are therefore driven by a desire to exceed our customer's expectations. The Station Long term charge has limited impact"</i>	Network Rail
The evidence in CP4 suggests that the station long term charge was just an accepted cost in NR	<i>"We have few Network Rail managed stations. I don't think the station long term charge drives any behaviours. It is an accepted charge"</i>	Network Rail

There was limited evidence in CP4 that the station long term change influenced Network's Rail's approach to the management of stations.

2.8.2.2 TOC

Message	Quote	
The Station LTC had no impact on decision making, and was just seen as a fixed cost which could not be influenced	<i>"The Station LTC is another fixed cost we have to pay and we cannot really influence, so it has no impact on decision making"</i>	TOC
	<i>"This is just a fixed cost of using stations. It is included in the business case, but does not drive decision making"</i>	TOC
	<i>"Included in the business case for running additional services – but it has limited impact on decision making"</i>	TOC
Operators felt the ownership structure did not always lead to the best outcome for passengers, with NR more focused on Asset Stewardship and less on the customer experience	<i>"There is some tension and distrust between NR and TOCs as to who can make best use of the asset. Station developments between TOCs and NR tend to be based on a fight and not on optimisation for the passenger."</i>	TOC
	<i>"The structure does lead to some issues between NR and TOCs. For example, the redevelopment of xx station has led to a significant increase in the Station LTC, driven by escalating costs without any clear additional direct benefit to passengers (e.g. the public square area at the front of the station will be 100% funded by TOCs through the Station LTC)"</i>	TOC
Most operators felt that NR was potentially better placed to extract maximum value from commercial	<i>"In terms of commercial opportunities, NR may have slightly more leverage in terms of negotiating national deals with retailers"</i>	

opportunities due to its national contracts with retailers	<i>“NR can probably sweat the asset more through national contracts with retailers and being better at delivering big schemes”</i>	TOC
		TOC
	<i>“The Station Facility Operator, whether NR or TOC wants to maximise revenue from leasing of commercial space. The TOC maybe more customer experience focussed in its choices”</i>	TOC
There was some evidence that operators taking long leases on stations could reduce MRR costs and improve station management, but this had its challenges and potential risks	<i>“Where TOCs manage stations...we see this as a positive for the rail industry. It's cheaper in terms of MRR cost and TOCs are able to be more responsive and reactive through co-ordinating internally”</i>	TOC
	<i>“One issue we have is calculating charges for other TOCs using our stations. NR are able to calculate this on a long run basis and for a portfolio of stations, but we are not able to do this, which presents challenges in terms of agreeing costs with beneficiary TOCs”</i>	TOC
	<i>“In terms of taking over MRR on stations – although it may lead to decreased MRR costs, I'm not sure we would want to take on that level of risk and responsibility. It could also go the other way”</i>	TOC

2.8.2.3 Funder

Message	Quote	
Network Rail is active in station management	<i>“Network Rail has a delivery plan for each control period which includes stations”</i>	Funder
Model for management of stations is less effective and needs reviewing	<i>“There are many different models for managing stations. We still don't have the right answer...”</i>	Funder

There was little evidence for Funders that the Station Long Term charge encouraged the efficient use of stations by Network Rail. Network Rail has its own commercial arm which specialises in property development. Network Rail was therefore incentivised to be more efficient and commercial because of the potential financial benefit. The challenge arises where there is limited property development opportunities at a particular station, Network Rail will have little incentive to be efficient.

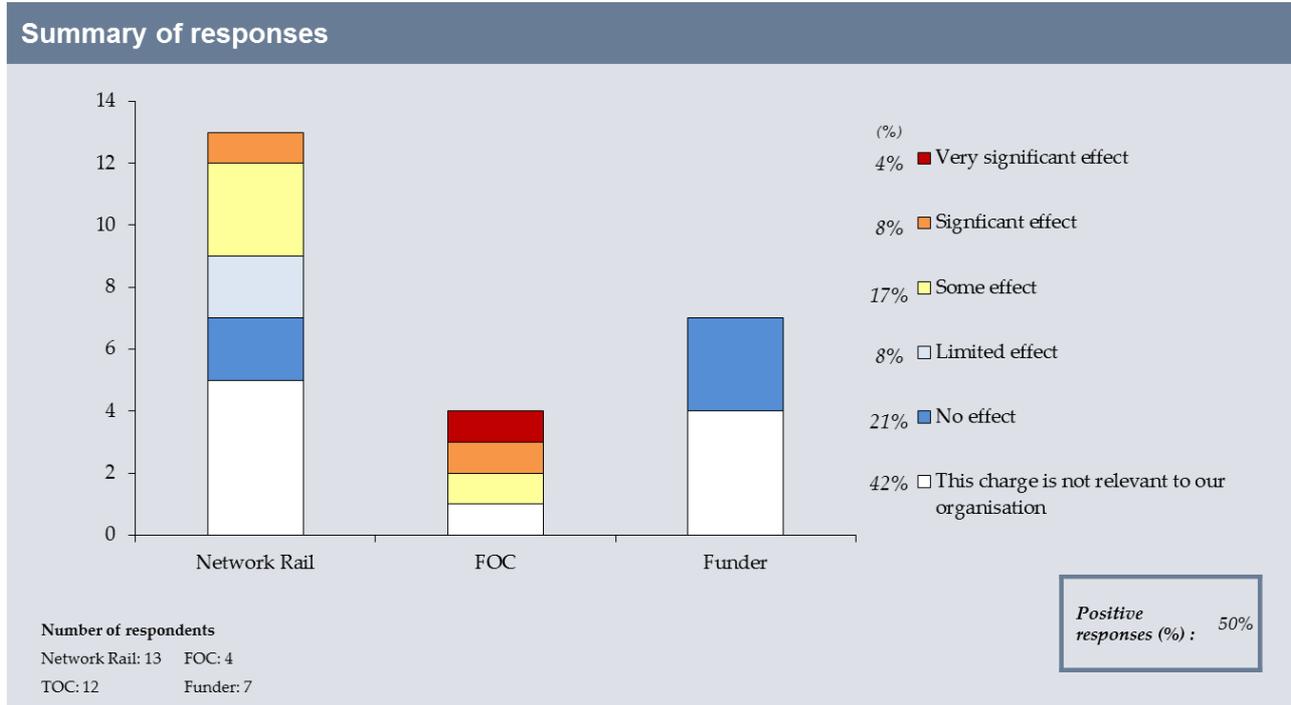
The funders felt that the effective management of stations was limited by the inconsistent approach over which party was accountable for this role each station. Different models of station management have been tried. In some instances operators have been able to manage station maintenance more efficiently than Network Rail, however TOC's are not incentivised to maintain stations post the franchise so it is unclear what the approach should be going forward to help promote the efficient use of stations

The Station Long Term Charge had very limited impact on Network Rail to manage stations effectively. Network Rail was more likely to take an active management role when there were opportunities for their property development team to drive commercial opportunities.

2.9 Freight Only Line Charge

2.9.1 FOL Charge Impact– Industry Overview

Figure 16: The extent to which freight-only line impacted behaviours in CP4



The freight-only line charge had limited impact on behaviours, with the exception of the freight operators where there was disparity in the level of impact observed. However interviews with the freight operators suggested the charge had less impact as the FOCs felt they had little ability to influence it, although as a cost it can impact on FOC profitability.

2.9.2 FOL Charge - Operational Examples

2.9.2.1 Network Rail

Message	Quote	
The freight specific charge is expected to have minimal impact on Network Rail in CP5	<i>"It's not a huge financial value for NR but may be material for FOCs, a few millions in value. It may affect a few issues around track access but there will be no real changes at NR resulting from this."</i>	Network Rail

The freight-only line charge had minimal impact on Network Rail in CP4 and Network Rail expect the freight specific charge to also have minimal impact in CP5. However there is recognition from Network Rail that the charge could be material for the FOC community.

2.9.2.2 FOC

Message	Quote	
The FOL charge was mostly viewed an accepted cost in CP4	<i>"As operators and customers cannot move their location, the charge is not an incentive but a cost recovery mechanism. Therefore the behaviour has not changed. Whether the charge has led to NR being more efficient in the management of freight only lines is doubtful"</i>	Other
The FOCs believed that the freight avoidable costs defined in this charge were inaccurate	<i>"I do not accept the Network Rail definition of freight avoidable costs... These figures lack significant justification"</i>	FOC

There was little evidence that the Freight only line charge had driven any behaviours in CP4 due to the FOCs' view that they had limited ability to influence the charge. While FOCs felt that the structure of the charge was adequate, the FOCs felt the freight avoidable costs figures had become established by being repeated regularly rather than justified properly.

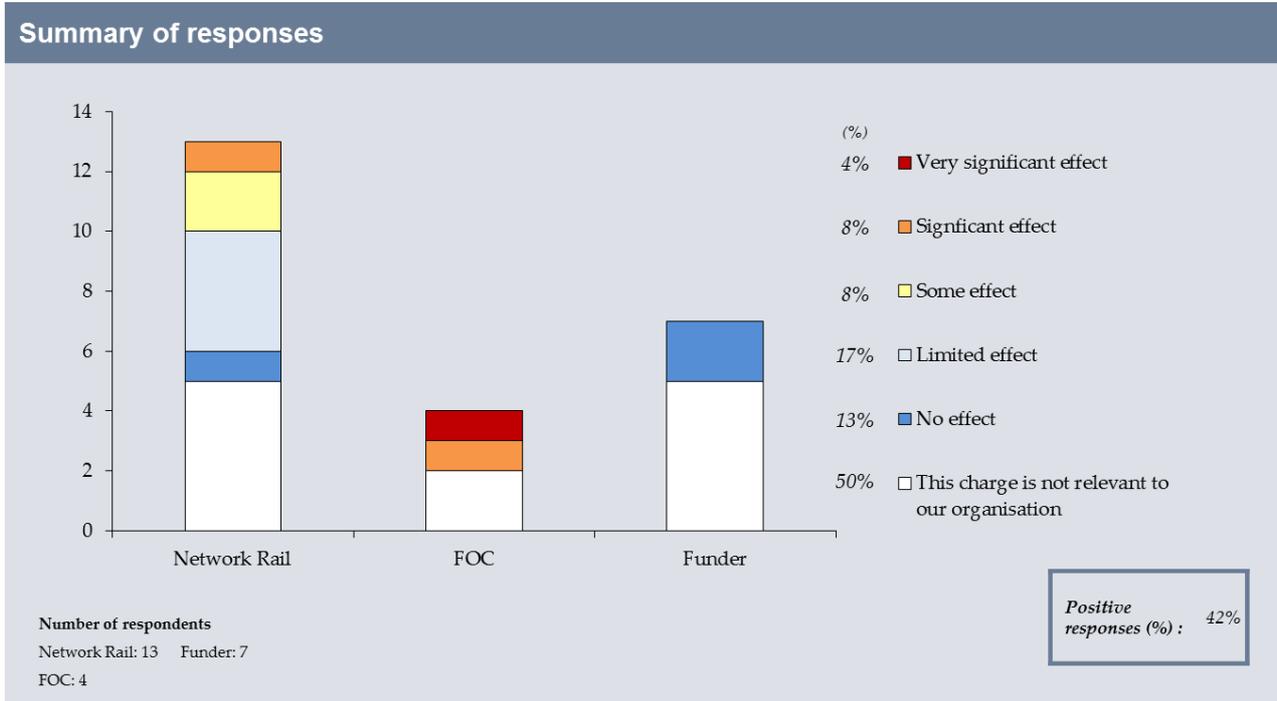
The introduction of the freight specific charge could impact on FOC's profitability in CP5 due to the challenge the FOCs face in passing on costs to their customers. While the coal customers for example can afford to pay the charges, they also have huge market power and it is difficult for the FOCs to negotiate with them. The FOCs could end up having to pay for these increased charges out of their profit margins.

The freight-only line charge had minimal impact on behaviours in CP4. There are concerns that the freight specific charge could impact on FOC profitability in CP5

2.10 Coal Spillage Charge

2.10.1 Coal Spillage Impact– Industry Overview

Figure 17: The extent to which coal spillage charge impacted behaviours in CP4



The coal spillage charge had significant effect on FOCs who implemented a number of initiatives to reduce the levels of coal spillage. As expected the charge had limited impact on the rest of the rail industry.

2.10.2 Coal Spillage - Operational Examples

2.10.2.1 Network Rail

Message	Quote	
The coal spillage charge had limited impact on Network Rail behaviour	<i>"We work closely with the FOCs to monitor the spillage of coal. This is triggered by the charge and the need to revisit at each periodic review"</i>	Network Rail

In CP4, the coal spillage charge had limited impact on Network Rail aside from driving increased monitoring of the spillage of coal to inform the periodic review process.

2.10.2.2 FOC

Message	Quote	
In CP4, the coal spillage improvement fund was effective at driving initiatives to improve performance	<i>"The fund enabled terminals to invest in new equipment which otherwise they would have had no reason to do so. This led to improved performance"</i>	FOC
Changes to the regime in CP5 will not incentivise performance	<i>"The charge is now fixed so there is no incentive to improve performance"</i>	FOC

In CP4, the establishment of the coal spillage fund was effective at driving initiatives to improve performance. However as a result of these improvements, the freight industry expected the costs of the coal spillage charge to decrease in CP5. In contrast the payments increased which the freight community explained did not incentivise long term improvement in performance, *"There has been considerable effort to fit cleaning equipment at terminals and on wagons. However, as the charge has not fallen in consequence it is unlikely this will continue."* There was also some scepticism over the role of the coal spillage charge with the introduction of the freight specific charge. The FOCs felt that they had little ability to influence the costs of either of these charges and they could have been included as one charge, *"The charge now seems more about charging coal because coal is perceived as being able to afford it rather than a cost reflective charge for coal spillage. If this is the case the ORR should be open about it."*

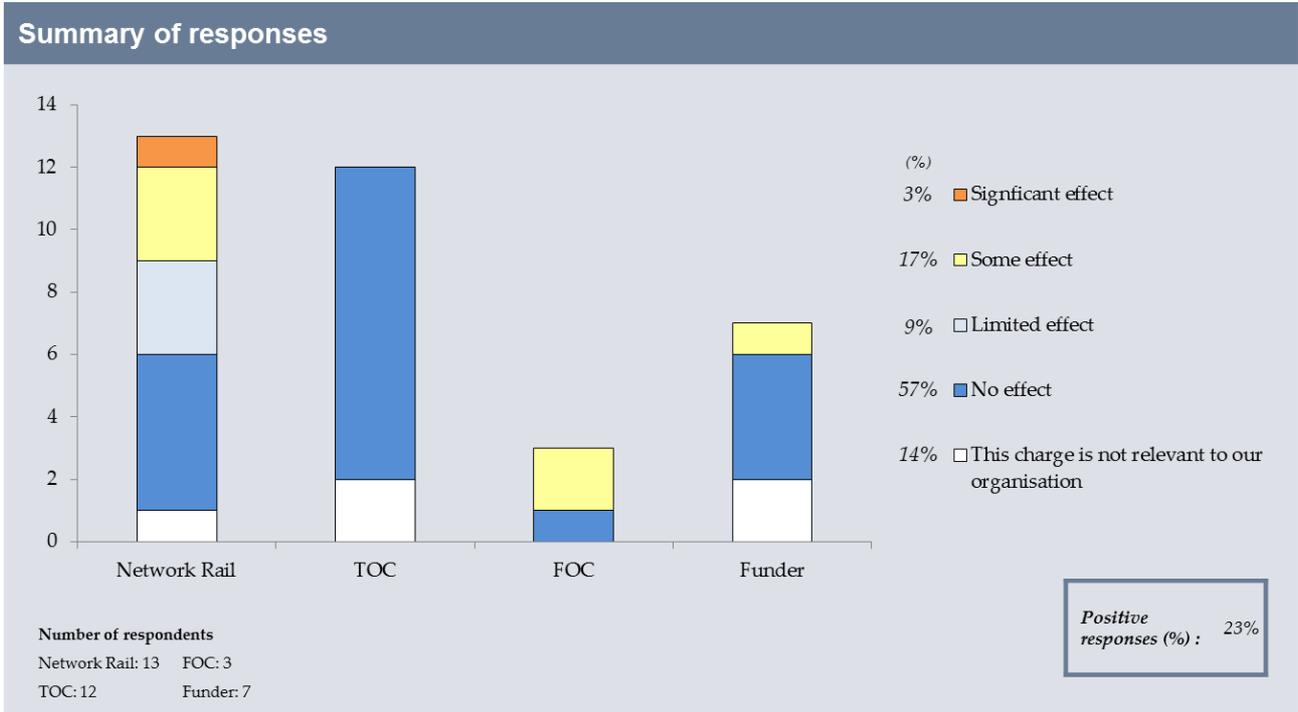
The FOCs are also concerned that the increased CP5 costs was based on the outcome of a report which they perceived as having used very crude and flawed methodology.

The coal spillage charge and fund drove initiatives to reduce coal spillage in CP4. However the change to the charge in CP5 has reduced its incentive properties

2.11 Efficiency Benefit Sharing Mechanism and REBS

2.11.1 EBSM and REBS– Industry Overview

Figure 18: The extent to which EBSM impacted behaviours in CP4



The EBSM had limited impact on the rail industry's behaviours in CP4. There was a lack of understanding from the operators on how to influence the outputs of EBSM.

2.11.2 EBSM and REBS - Operational Examples

2.11.2.1 Network Rail

Message	Quote	
EBSM had limited impact on Network Rail behaviours	<i>"This was centrally controlled so limited exposure to affect behaviours"</i>	Network Rail
	<i>"EBSM started off as a good idea but too many modifications were made"</i>	Network Rail
There was concern that REBS could become a perverse incentive where TOCs just opt in where they think they can benefit without making any behavioural changes	<i>"REBS not sure whether our TOC will opt in but if they do they will chose the best economic option"</i>	Network Rail

The EBSM had limited impact on Network Rail behaviours in CP4 both centrally and in the routes. The EBSM was limited by a number of factors and there was also view that alliancing had overtaken EBSM as an incentive to encourage greater collaborative working.

The view from the majority of routes in Network Rail was that their operators were unlikely to opt into REBS as the incentive has become too complicated. The Network Rail Centre summarised the view of REBS from Network Rail, *"This has become so complicated, we expect everyone (the TOCs) to opt out of it so it won't have any effect (unless the DfT forces TOCs to opt in). We're broadly in favour of it but we think it's best to promote the desired behaviour through alliances."* There was a view that the concept of REBS had been a good idea but the ORR had been too quick to tweak the incentive during the consultation period.

2.11.2.2 TOC

Effectiveness of EBSM and REBS

Message	Quote	
A consensus among all operators that EBSM was ineffective in CP4 and had no impact on decisions making	<i>"EBSM was designed to incentivise TOCs to work with NR to achieve efficiency benefits. But there is a lack of transparency regarding the NR cost structure and TOCs are not in a position to influence it – so this incentive does not work. Alliances and bespoke agreements between NR and Operators are far more effective in achieving the desired outcome"</i>	TOC
	<i>"The effects of the CP4 EBSM mechanism are so small as to be negligible"</i>	TOC
	<i>"This incentive was poorly understood in CP4 and therefore had little impact. In addition, any outperformance benefits received were so small as to not even register with the FD"</i>	TOC
	<i>"We have a "light alliance" with NR, and work well together. But this is not driven by the EBSM incentive"</i>	TOC
Most operators said they would opt out of REBS in CP5, with only one exception	<i>"We do not feel comfortable taking risk on the NR cost base – for items that we do not directly control, and will definitely opt-out of REBS in CP5"</i>	TOC

"We will definitely opt out of REBS in CP5"

TOC

"I think that our FA precludes us from opting into REBS – even if it doesn't we would not opt in"

TOC

"For CP5 we have raised concerns with the ORR about the principle of TOC exposure to NRs commercial risk, given that we have very little influence over their costs. Alliancing is much better way to achieve the objectives sought by these incentives"

TOC

"We felt that there is a high probability of upside on our route in CP5, so we will take the punt on REBS"

TOC

Alternative drivers of efficiency

Message	Quote
All operators believed that alliances were far more effective	<i>"EBSM has been superseded by the Alliance. The key to the success of the Alliance has been a single team working closely together, in the same office and under one management team"</i>
	TOC
	<i>"Alliance deals or side commercial agreements are more likely to influence behaviour. The 4th Railway Package could have an important impact on alliances, and how operators and infrastructure owners work together"</i>
	TOC
Operators supported the need to work more closely with NR, and wanted NR to be more responsive to incidents. They felt that the move to route level management would help this	<i>"Bespoke alliances are more effective"</i>
	TOC
	<i>"We have bespoke agreements with NR on specific enhancement projects. As part of these agreements we have resources embedded in the NR project team. For example, on a recent enhancement project we embedded 3 people into the NR team. This enabled an early sense check on the planned possessions and a reduction in costs and ultimately increased industry efficiency. The result was 48 separate weekend blockades replaced by a single 3 week blockade. This led to a 50% reduction in possession hours and significant cost savings"</i>
	TOC
	<i>"I believe in a vertically integrated railway – a move towards the full alliance model across the whole network"</i>
	Transport Owning Group
Operators supported the need to work more closely with NR, and wanted NR to be more responsive to incidents. They felt that the move to route level management would help this	<i>"One big criticism is that NR do not set or guarantee response times – all our other suppliers do. A big improvement in our joint working relationship would be for NR to guarantee response time to incidents and to provide more visibility on maintenance plans"</i>
	TOC
	<i>"The move to route based incentives and the RD model is good, but it's effectiveness in getting parties to work together will vary. It may be highly effective on single operator routes, but less effective on mixed / multi-operator routes"</i>
	TOC

2.11.2.3 FOC

Message	Quote	
The FOC community participated in EBSM	<i>"There was only an upside of EBSM. Why wouldn't you partake?"</i>	FOC
There was a view that the structure of the incentive meant it was challenging to link the outputs to the inputs	<i>"The EBSM is a national scheme. It was therefore quite difficult to link savings in one location to the national output"</i>	FOC
The EBSM had some impact on driving efficiencies with Network Rail	<i>"The EBSM created a more general awareness that we need to work with Network Rail to drive efficiencies but a bigger of efficiency in the past has been the reductions in charges and incentives at each control period"</i>	FOC
FOCs are unlikely to opt into REBS	<i>"Don't think the FOCs will opt into REBS as it has a greater focus on passenger trains and we can only make a limited impact"</i>	FOC

The FOC community participated in EBSM due to the fact it only offered an upside. However there were challenges from the FOC community about the structure of the incentive and that it was difficult to identify outputs of the incentive from the inputs in local areas. FOCs pay a very small % of the charges for Network Rail, so FOCs felt there was less incentive for Network Rail to engage with the FOCs as part of EBSM. While the EBSM helped to create a more general awareness of working with Network Rail to drive efficiencies, there impact on initiatives was limited. A greater driver of working with Network Rail to create efficiencies has been the historical reduction of the overall charges and incentives in previous control periods because of the efficiency overlay.

FOCs are unlikely to opt into REBS because of its focus on passenger trains. Instead the FOCs are in discussions with Network Rail about a scheme that would be more appropriate to them and include factors within the FOCs' control.

2.11.2.4 Funders

Message	Quote	
There was evidence that operators received high pay-outs without working with Network Rail to drive improvements	<i>"EBSM didn't work effectively in CP4 and some TOCs received significant pay-outs despite not visibly contributing to the overall performance of Network Rail"</i>	Funder
Some operators received these pay-outs without performing at the levels set in their franchise agreements	<i>"If operators are not achieving the targets set in their franchises then it doesn't seem appropriate that they can pass on efficiency payments to TOCs"</i>	Funder
There was a view from the funders that REBS will not be effective in CP5	<i>"REBS is unlikely to be successful in CP5 as the potential upside isn't that material given the downside risk and other incentives the TOCs have"</i>	Funder

Funders didn't believe there was much evidence that the EBSM had driven improvements in the effectiveness of Network Rail in CP4 and were critical of its structure due to the fact that TOCs received significant pay-outs without making any changes in their behaviour. They also criticised the fact that EBSM didn't co-ordinate effectively with the franchise agreement. There was evidence in CP4 that operators received EBSM pay-outs when they hadn't managed to reach the targets outlined in their franchise agreements which suggested that the EBSM was not driving the right levels of efficiencies or performance.

The impact of EBSM was also restricted by the franchise agreements cap on profit. One funder commented that they didn't think the EBSM on its own was enough to drive better behaviour and alliancing was a much stronger incentive. However alliancing is still in its infancy and there is a real disparity in the appetite for alliancing among operators as some operators still have significant distrust in Network Rail.

The funders were sceptical about the role of REBS and for short term direct awards, REBS were deliberately turned off by one funder as it didn't think there was sufficient time for the operator to make a significant influence Network Rail's performance. For the longer term direct awards, operators will be able to choose whether to turn it on or off in CP5. The view from the funder was that individuals needed a better understanding of how REBS will work and how they can influence the outcome. Another funder stressed the importance that for REBS to work for the best impact on the industry the incentive needed to incentivise longer term improvements in performance and not solely focus on immediate savings.

EBSM drove very little behavioural change in CP4 due to a lack of understanding. The structure was widely criticised by funders for allowing TOCs to receive benefits without making behavioural changes. It is unlikely that operators will opt into REBS in CP5. All industry parties concurred that alliance-type collaboration was more effective at driving cost efficiencies.

3 THEMES

Several themes emerged from our conversations with the industry that were not charge specific. In this section, we have amalgamated these views along with other remarks that may have an impact going forward and present them below.

3.1 Complexity

The C&I regime is necessarily complex in certain areas but the profusion of charges is seen by some as confusing or excessive. This is an issue because industry participants sometimes fail to grasp how a charge works or misunderstand it and therefore they are less likely to consider the impact of it in their daily roles. That is, the charge can lose its incentive effect because it is ignored or seen as immaterial.

“Incentives work best when people can understand them. The more abstract they are, the more likely they are to be poorly understood or simply ignored.”

TOC

There was a feeling that the ORR had, in recent times, become more focussed on the use of economic levers to drive competition and behaviours, but in certain instances this was removed from the reality of activity on the railways.

“The C&I regime consists of lots of minor charges designed to achieve economic purity. But the regime lacks real world practicality and creates high uncertainty.”

TOC

3.2 Calibration of rates and benchmarks

Calibrating charges at the right level was an issue that the industry felt strongly about - the wrong level can drive undesirable outcomes or dis-incentivise desired outcomes.

One of the most financially material outcomes results from the level of the S8 benchmark (Average Minutes Late) prescribed at the beginning of a control period. Set too high or too low, it can create significant flows of monies to/from the TOC and not necessarily drive a change in behaviour in NR. This can be due to factors outside of the NR Route’s control e.g. the recent floods and winter weather or because capacity has been constrained and without significant investment (enhancements) the scope to improve performance is limited.

“I have some concerns on how Schedule 8 payment rates were calibrated, if done incorrectly it could lead to leakage of funds from taxpayers to TOCs and vice versa. S8 compensates for long-term effects of unreliable service; in CP5 they are 70% higher than in CP4. If they are too low/ high it could create perverse incentives and inappropriate money flows between NR and train operators.”

Network Rail_Centre

The Volume Incentive was perceived too immaterial during CP4 and has subsequently been increased for CP5. This was thought to be important because the volume incentive, capacity charge and S8 are considered to be closely related when developing the economic case for introducing new services.

“The volume incentive in CP4 was small, in CP5 the rates have been increased but the profit upside is marginal, not compelling enough. The interplay between the volume incentive, the capacity charge and S8 is key.”

Network Rail_Centre

3.3 Franchise protection

TOCs are, by design, held neutral to the effects of charges and incentives to existing services through their franchise agreements. This is seen to dull incentive properties of many of the charges, affecting decisions only at the margins. However, the TOCs were unanimous in their view not to take on further risk by being given greater exposure to the charging regime.

“The main issue with the C&I structure is franchise protection, it does not drive the TOCs’ behaviours, they are less engaged and put forward fewer ideas in industry debates. The alternative is that they are given greater exposure to changes in the charges at periodic review change, and they build that into their franchise risk premia, not a perfect solution either.”

Network Rail_Centre

“The Franchise regime adds another layer of complexity and holds franchised TOCs neutral to the effects of the C&I regime, so the incentive properties are very limited. Having said that, we are able to make a small difference at the margins. But it is marginal and not material enough to drive decisions.”

TOC

“We make fairly meagre profits already, I can’t imagine any TOC would want to take on more risk by being exposed to charges.”

TOC

“Charges and incentives are arguably less of a concern to TOCs as they are largely held neutral to these. Some would argue it may be better to put the Schedule 8 income that accrues to TOCs into a performance fund and use that to improve performance that would attract more interest.”

Rail Delivery Group

3.4 Engagement with the Periodic Review Process

There was a general view across the rail industry that it was important to engage with the Periodic Review Process due to the potential impact the charges and incentives regime could have on the rail industry.

Network Rail Centre leads the engagement of the Periodic Review Process whereas the routes tend to focus on the more material charges and incentives such as Schedule 8. The routes are also more likely to engage on charges and incentives that they manage the budget for and therefore have the ability to influence.

Despite their protection from the charges and incentives in their franchise agreements the TOCs tend to engage to some extent in the Periodic Review Process. Although there were examples where this was not the case as Network Rail Centre explained, *“During Periodic Review 13, NR set up a variable track access charge group that met monthly, this was well attended by FOCs and OA operators, it clearly mattered a lot to them but they represent c.10% of the traffic on the network. Conversely, the TOCs who comprise the most traffic were not interested and did not attend.”*

Funders believe they have a strong incentive to engage in the periodic review process to ensure that the charge and incentive regime is fit for purpose and does not discriminate against regional rail, as one funder summarised: *“We have a major incentive to engage in the periodic review process as the current structure of charges and incentive regimes are not fit for purpose and have the potential to undermine our efforts to deliver better local rail services.”* Smaller funders have limited resources and the consultation process can be very long and complicated. Smaller funders therefore tend to focus their engagement on the areas they think will have most influence on their future decisions: *“We engage where we have strong views such as the FTAC, capacity charge, and schedule 4/8... We keep an eye on the other areas where we believe the changes will be marginal”.*

The FOCs believe there is a strong incentive to participate in the periodic review process due to the potential impact these charges can have on their ability to compete with road. The FOCs felt there was sufficient opportunity for consultation within the periodic review however one FOC commented on the importance of being engaged even before the start of the periodic review process: *“Once the periodic review begins, the remits are already set. It is important for us to get involved with Network Rail and the ORR before this.”*

3.5 Innovation

Industry comment does not appear to support the view that the C&I regime incentivises innovation. Although there was no body of evidence to suggest that the C&I regime impedes innovation. There are other forces at play that appear to have a greater impact, the principal one appears to be a desire in the industry to effect improvements, either because it is in the corporate good, it is good for customers/ reputation, or there is a compelling economic case for it. Innovation is also limited when the payback from innovation spans over more than one control period.

“Our company’s commercial success, reputational success that drives our business. My personal drive is to improve things, be that outputs to passengers or how we use our stations, journey times etc.”

TOC

“C&I regime does not really drive innovation; note there has been a £50m innovation fund, matched in value by the ORR. Historically, there’s not been much innovation; the industry is conservative, partly because of safety issues. R&D spend is typically low. ORBIS (handheld asset information technology) is good, it was not driven by C&I though. Innovation that pays back within the control period is supported by the regime in the sense that there is a clear business case for it. Where the payback period spans more than one control period it is more complicated.”

Rail Delivery Group

3.6 Relationship between Network Rail and TOCs

The relationship between the TOCs and NR has generally improved over CP4 with greater collaboration driving some of the positive outcomes that we observed e.g. around planning possessions and control centres working more closely to recover from delays. This operational engagement is not attributed to the C&I regime but alliancing structures, stronger personal relationships between organisations and greater accountability at the route level.

One NR Route remarked that this may change in CP5 as the nature of the franchise agreements may drive more tension in the relationship.

3.7 NAO change (decision to record NR’s accounts as part of the Treasury)

In December 2013, the National Audit Office decided that NR’s accounts would be recorded as part of the Treasury, it effectively becomes a public sector body. This may have broader implications for CP5 that are yet to be understood.

4 OBSERVED BEHAVIOURS AND DRIVERS

The Charges and Incentive (C&I) regime has varying degrees of impact on industry participants, its most material impact appears to be on Network Rail and the FOCs, as the TOCs are largely held neutral to its effect. To provide context to the C&I regime, we provide as a backdrop, the industry's perspective on what really drives behaviours in their companies.

The different ownership structures, funding mechanisms and other incentive drivers or motivators that pertain to each party often over-ride the impact of the C&I regime. We present observed behaviours by industry group but acknowledge that even within a group e.g. the TOCs, there can be disparate views on business priorities, we highlight these where observed.

The secondary purpose of understanding what drives observed behaviours in the rail industry is to allow comparison with other markets and where possible, uncover insights on how their C&I regimes have a bearing on industry participants in driving desired behaviours or drawing out lessons that may be instructive for the rail industry. See appendix B for more details.

4.1 Network Rail

Drivers of observed behaviour	Degree to which driven by regulation vs other factors
<p>Safety</p> <p><i>"Safety is our number one priority - our ultimate objective is to get a train safely to its destination within PPM"</i></p>	<p>This is driven by safety regulations imposed by ORR through the Health and Safety at Work Act 1974 and the risk of reputational damage to Network Rail</p>
<p>Operational performance</p> <p>Network Rail focus on PPM and a variety of other performance metrics.</p> <p><i>"PPM is top of mind, it is the thing that most tangibly affects our customers and passengers. It is of reputational importance (we don't want to be in the press for the wrong reasons)"</i></p>	<p>Various operational performance measures are closely monitored by the ORR and taken into consideration when setting benchmarks for the next control period.</p> <p>There is an indirect link (via AML) to schedule 8 payments; aside from this there is little impact of the C&Is on behaviours that drive performance.</p>
<p>Financial targets</p> <p>Related to achieving efficiency goals and managing the business within the funding determination to deliver agreed outputs.</p>	<p>Financial goals are agreed with the ORR and ultimately the government.</p> <p>Charges drive financial goals only at the margins. The FTAC is a very material component of NR's funding but in itself has limited incentive properties.</p>
<p>A desire to 'do the right thing'</p> <p><i>"There is a desire at the employee level to 'do the right thing', people want NR to be successful, for the industry to do well and they take pride in what they do."</i></p>	<p>This is driven by the culture of Network Rail, its leadership and how it devolves its responsibilities rather than the regulatory context</p>

4.2 Train Operating Companies

Drivers of observed behaviour	Degree to which driven by regulation vs other factors
<p>Safety</p> <p>Safety is of paramount importance and there is a strong culture of safety in the rail industry</p> <p><i>"We are driven by the reputational risk. Safety is high on every Director's agenda as they are ultimately accountable"</i></p>	<p>The ORR oversees industry wide safety regulation.</p> <p>The reputational risk and consequential impact on financial performance and share prices has an even greater bearing on the safety culture than industry regulations.</p>
<p>Franchise Agreement</p> <p>The franchise agreement is effectively a contract with the DfT with committed obligations and expectations that are required to retain the franchise</p>	<p>Compliance with the franchise agreement is an absolute requirement to remain in operation. Though TOCs are not officially regulated, it is the mechanism by which the DfT exercises power akin to that of a regulator.</p> <p>Further, to be considered a 'good operator' is seen as an unstated requirement for success in future franchises, therefore, TOCs strive to remain in good standing.</p>
<p>Profit and Shareholder expectations</p> <p>TOCs have a requirement to make profit for their shareholders who have financial goals and targets</p>	<p>Shareholders and Transport Group Companies set the financial expectations against which the TOC is measured. Regulation plays no direct role but the DfT, through revenue support mechanisms and the risk structure designed into the Franchise Agreement will exercise some control over the TOCs ability to make profit against an agreed level of risk exposure.</p> <p>Charges and incentives contribute to a TOC's cost base but the limited influence over these costs limits their impact on decision making</p> <p><i>"The C&I regime does constitute 30% of our cost base – so has a significant impact on profits. But we have limited influence and therefore the regime does not drive decision making"</i></p>
<p>Customer satisfaction</p> <p>A focus on customer satisfaction is important for driving growth in the franchise</p>	<p>Customer satisfaction is important in the way it contributes to increase profit and the value of the franchise; it has nothing to do with the regulatory framework but has much to do with reputation. The customer experience is directly impacted by delays and can over-ride the way the C&I can work:</p> <p><i>"On a good day decisions are made on profit and customer experience which tend to go hand in hand. On a bad day where it is a recovery situation schedule 8 doesn't incentivise TOC to get a delay back really quickly but we will do so anyway because it is in the best interest of customers"</i></p>
<p>Performance</p> <p>Performance is key to ensuring an upward trajectory of revenue growth</p> <p><i>"Performance is critical to our business as a high proportion of our demand is leisure / discretionary travel. Poor performance over the long term will have a severe impact on demand."</i></p>	<p>The regulatory framework besides monitoring PPM across the industry has no direct impact on behaviours that drive better performance.</p> <p>Contractual targets on performance and profit are more important: <i>"We aim to improve operational performance. But this is driven by our focus on delivering the contract we have with the DfT and on delivering profit targets, not on the charges and incentives regime."</i></p>

4.3 Freight Operating Companies

Drivers of observed behaviour	Degree to which driven by regulation vs other factors
<p>Safety <i>“Freight involves moving large equipment and goods. There is huge potential risk to individuals”</i></p>	<p>Safety is overseen by the ORR but behaviours are also driven by a FOC’s sense of responsibility and good business practices. The risks of poor safety are significant and can result in a FOC losing their licence</p>
<p>Profit FOC ownership varies from private equity to state investors, all will have expectations on financial returns: <i>“Without profit we can’t invest or continue to run as a business”</i></p>	<p>Regulation has little direct bearing on profits, rather these are expectations set by shareholders. However, we note FOC profits are vulnerable to charges and incentives: <i>“10% of costs are charges and incentives.”</i> Profit margins in the freight business are low and therefore changes to the charging regime can have great significance on traffic types</p>
<p>Sector demand Demand for rail freight is driven by dynamics in end user markets (coal/ aggregates, NR wagons, containers/ intermodal etc.) which in turn drive revenues</p>	<p>Demand is driven by the economic cycle and the cost differential between road and rail freight but C&I have an impact on price. Charges and incentives are one of the key costs that influence freight’s ability to compete with road, particularly in the intermodal business: <i>“Some customers will change to road even with a difference of £1 in costs.”</i> The changes in the charges regime during the control period can undermine customer confidence in rail and make it harder to sign contracts with customers: <i>“The whole industry was spooked by PR13”</i></p>
<p>Fleet utilisation FOCs need to maximise the utilisation of their fleets to demonstrate an acceptable level of return on capital</p>	<p>This is driven by the high fixed costs of the freight industry. FOCs therefore be efficient to maximise the return on these fixed costs and drive profit</p>

4.4 Conclusion

The above overview of what drives behaviours at NR, TOCs and FOCs demonstrates that regulatory intervention is rarely the reason why these organisation behave the way they do. Regulation may not be the key driver of behaviours even where regulatory interventions exist, other factors can trump the impact of regulation or charges and incentives. That is not to say that C&Is have no effect, many in the industry argue that without some of the key components of the C&I framework the industry would be in a worse position.

That said, there are behaviours where regulation or economic levers/ incentives are seen to have more effect (e.g. in the monetisation of delays, per schedule 8) and there are some areas where they do little to incentivise desired behaviours (e.g. EBSM which has been overtaken by alliance-type working).

The use of C&Is is an appropriate means of driving behaviour in many areas of the rail industry. However, it is generally a relatively less powerful driver of behaviour compared with other drivers such as reputational or commercial/ strategic priorities

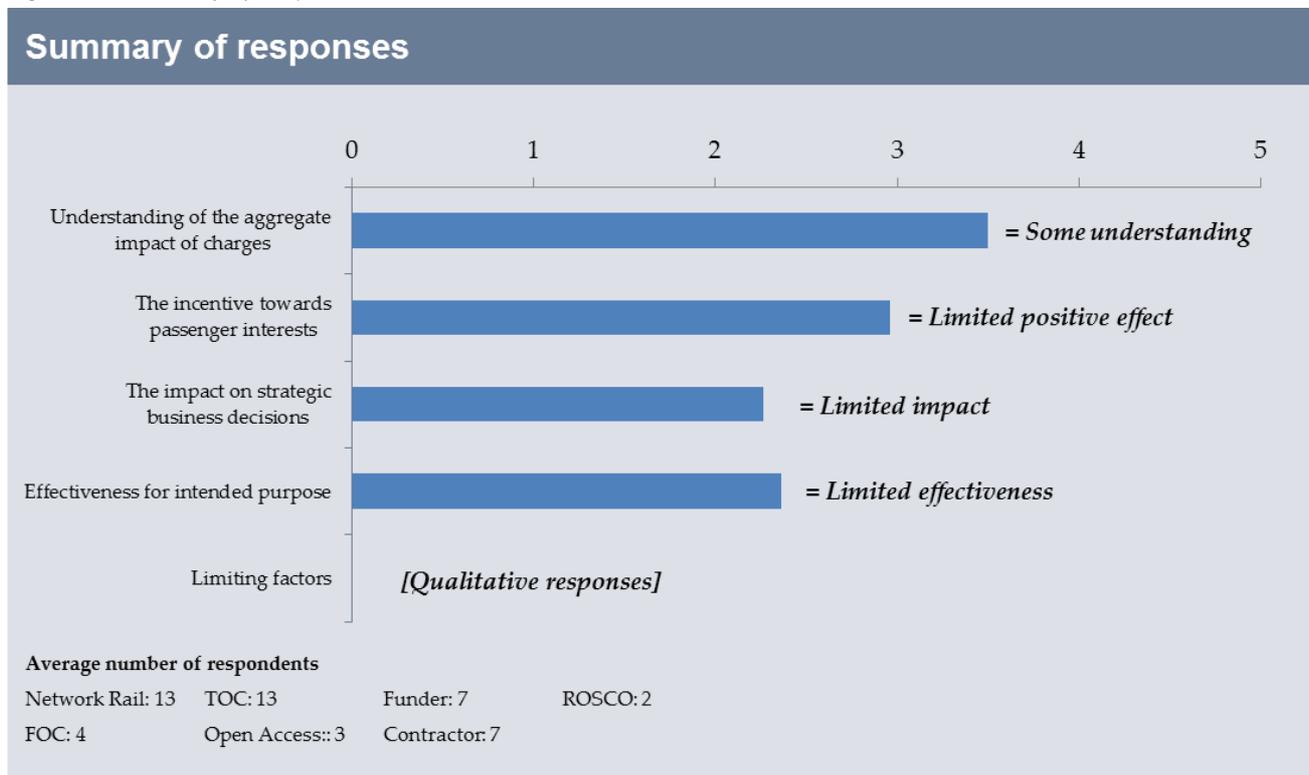
5 APPENDIX A: UNDERSTANDING AND IMPACT OF CHARGES AND INCENTIVES

5.1 Calibrated responses

In this section we present the responses on the effectiveness of charges and incentives and the degree to which the charges and incentives are understood and acted upon. We asked respondents to calibrate their responses (typically against a scale of 1-5) and present these quantitative findings at a summary level in Figure 1 below. In subsequent sections we present qualitative responses and examples of operational evidence.

- 1) How well did you understand the impact, in aggregate, of charges and incentives between Network Rail and Operators in CP4? i.e. the interplay of charges and their net effect on train operators and Network Rail commercially, or otherwise
- 2) To what extent did charges and incentives impact on your organisation's strategic business decisions in CP4?
- 3) How effectively do you think the charges and incentives achieved their intended purpose in CP4?
- 4) Were there any factors that limited the effectiveness of the charges and incentives regime in CP4?

Figure 1: Summary of responses



5.1.1 How well did you understand the impact, in aggregate, of charges and incentives between Network Rail and Operators in CP4?

Figure 19: Understanding of the aggregate impact of charges and incentives



Figure 19 shows how the level of understanding of the aggregate impact of charges and incentives was highest for the industry parties directly impacted by the regime. TOCs, FOCs, Open Access Operators and Network Rail all claimed to have a good understanding whereas the funders, contractors and ROSCOs had limited to some understanding.

Network Rail feel they have a good level of understanding; however interviews with individuals in the organisation revealed there was a clear difference between the levels of understanding in the centre versus the routes: *“the interplay of charges is very well understood at the centre”*, Network Rail Centre.

The degree to which routes understand the regime, in aggregate, is improving with devolution. In the routes, individuals’ knowledge tended to be restricted to a couple of the more material incentives such as Schedule 4 and 8. This meant that it was challenging for the routes to assess the weight of the aggregate impact of charges and incentives on driving business decisions: *“It is too hard to isolate the impact of the charges and incentives and assign a relative weight.”*

The routes also had limited understanding of the financial implications of the Charges and Incentives (C&Is) with many of the charges viewed as accepted costs budgeted for, but not actively managed.

The TOCs had a slightly lower understanding of the charges and incentives than the FOCs and Network Rail. A likely explanation for this could be the fact that the impact of C&Is was limited by the design of franchise agreements which largely hold TOCs neutral to the effects of charges. There was therefore less need for comprehensive knowledge.

Both TOCs and Transport Owning Groups bid teams have an expert or experts within their organisations with a good understanding of the charges and incentives regime and how it affects their business. However, there is limited understanding of the regime outside these hubs of expertise.

The FOCs feel that they have a good understanding of the impact of the aggregate of C&Is and interviews with the FOC community confirmed this was the case for larger FOCs although the understanding was less

for the smaller FOCs. This level of understanding is driven by the need to be able to calculate the cumulative impact of the regime on their finances and to be able to translate the impact on customers pricing. The larger FOCs tend to have small profit margins c. 2-3% and the charges and incentives are a significant proportion of costs, typically around 10%.

The charges and incentives can therefore impact profit and the ability of the FOCs to be cost-competitive vs. road, particularly for container haulage. The weaker understanding of the charges and incentives by the smaller FOCs is influenced by their comparatively recent market entry and the challenge of getting up to speed on these charges, as one smaller FOC commented: *“We needed our hands holding. We believe that the ORR could have assisted us more when we entered the market”*. FOCs are particularly aware of the aggregate impact of charges due to their concerns over changes to the scheme in CP5. During the periodic review the FOCs argued that the aggregate impact of the charges had not been considered properly and would therefore be damaging on their ability to successfully grow their businesses.

Funders answered less positively on their understanding of the aggregate impact of charges and incentives. However the interviews with funders suggested that there was a good level of understanding about how the charges and incentives interacted to influence the costs of running additional services and also their impact on franchise bids. The level of understanding of the financial impacts was greatest among the smaller funders where the costs were more material. For the larger Funders e.g. the DfT, these charges were relatively marginal in comparison to other operating costs.

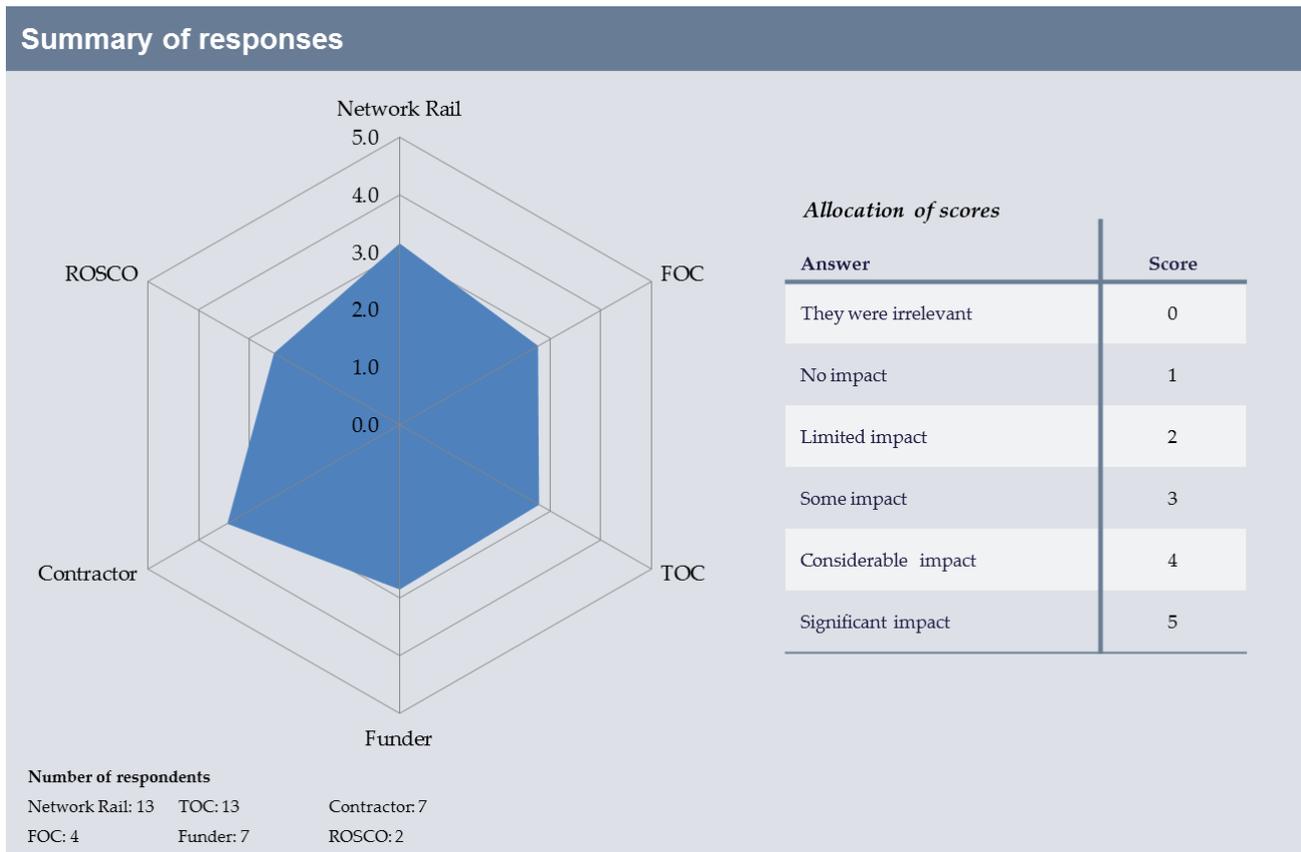
Contractors had the weakest understanding of the charges and incentives, they were only aware of Schedule 4 and Schedule 8 which were well understood. The level of understanding was greatest in pain/gain contracts where contractors were directly exposed to the costs of Schedule 4/8. These contracts necessitated the contractors to understand the regimes in order to be able to influence their outcome and reduce the costs of Schedule 4 or mitigate the risk of schedule 8 payments.

The ROSCOs had a similar level of understanding to the contractors and their knowledge was limited to the charges that impact on the operating costs of rolling stock such as the variable usage charge and the EC4T charge. For these charges they had good understanding of how to reduce the impact of the charges to make their rolling stock more attractive to potential customers.

The understanding of the aggregate impact of charges and incentives varied across the industry parties and the level of understanding was greatest for the organisations where the relative materiality of the charges and incentives was greater i.e. NR, the FOCs and TOCs.

5.1.2 To what extent did the charges and incentives impact on your organisation's strategic business decisions in CP4?

Figure 20: The impact on strategic business decisions



The general industry view was that C&Is had some influence on strategic business decisions in CP4 but other drivers were considered to be of greater influence such as operational performance or customer relationships. There was a general hope in the industry that if decisions were made in the interest of doing the “right thing” for the network or for passengers then the financial impact of the charges would adjust accordingly.

C&Is were often considered in strategic decisions, but they were one of many factors considered in the decision. The impact of the charges and incentives was therefore dependent on their relative materiality. For example for funders, TOCs and FOCs making strategic decisions on rolling stock, the various charges would be considered but these would be marginal in comparison to the significant costs of operating rolling stock and would therefore have limited impact.

There were some occasions where the materiality of the C&Is resulted in greater influence on strategic decisions e.g. for some funders the C&Is impacted significantly on their decisions to run additional trains because the capacity charge made up a significant proportion of the costs c.20%. Similarly for contractors in contracts which exposed them to schedule 4 and 8 charges, it affected their approach to project delivery.

There is some expectation that charges and incentives will have more impact in CP5 as they increase in materiality. For example some routes expect schedule 4 to be more relevant to Network Rail. Another example is the increased charges on the FOCs which will now have more significant impact as one FOC explained: “Penalties could now equate to 30% of profit.”

Charges and incentives had some impact on the business decisions made by organisations in the rail industry. The charges and incentives were rarely the key factor in these decisions and the weight of the regime depended on the relative materiality of the charges

5.1.3 How effectively do you think the charges and incentives achieved their intended purpose in CP4?

Figure 21: The effectiveness of charges and incentives

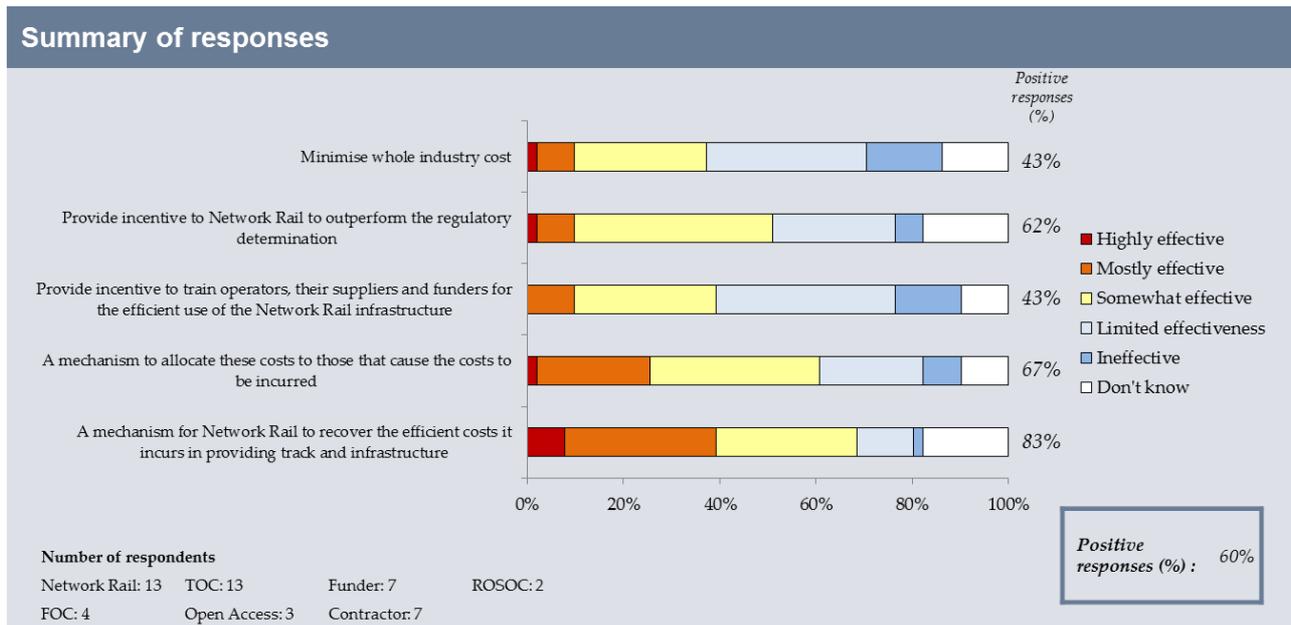
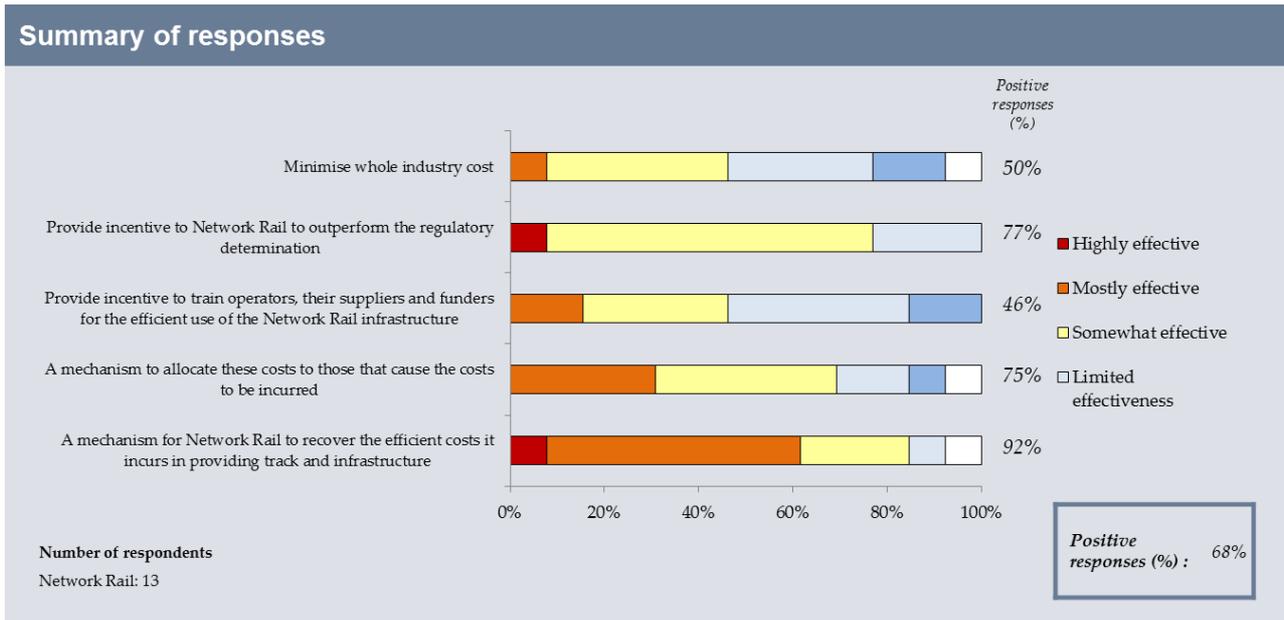


Figure 21 shows that there was a consensus in the industry that the most effective aspect of the charges and incentives regime was to recover the efficient costs of the running trains on the railway. Next, over 80% of the industry supported the view that C&Is were effective as “a mechanism to allocate costs to those that cause the costs to be incurred”. There was particular support for the performance regime, with the TOCs and Network Rail giving consistent feedback that the Schedule 4 and 8 incentives were well structured and that without them the process of allocating the costs of delay or possessions would be very challenging. The third area of support was for the view that the C&Is were effective at providing incentive to NR to outperform the regulatory determination.

The charges and incentives were considered less effective at providing incentives for greater efficiencies or improved performance. Indeed less than 50% of individuals agreed that the charges and incentives had a positive effect on “providing incentive to train operators, their suppliers and funders for the efficient use of the Network Rail infrastructure”. The incentive properties of the regime were limited by other forces outside of the regime being of greater relevance.

The charges and incentives were not considered effective at minimising industry cost in CP4. There was strong opinion that the processing of C&Is required significant administration/ resource which built in cost that could have been more effectively invested back into the infrastructure or performance initiatives as one funder commented: “We need to consider what costs these charges are driving... Would it not be better to recycle this money and have more investment that would benefit passengers?”

Figure 22: Network Rail view on the effectiveness of charges and incentives



Network Rail was more positive than the rest of the industry with regard to the effectiveness of the C&Is regime in recovering the cost of providing track and infrastructure; over 60% of respondents rated this as highly effective or mostly effective. There was also a more positive view that the regime provided incentive for Network Rail to outperform the regulatory determination. However through the interviews with Network Rail individuals, the general feedback was the financial impacts of the charges and incentives were not sufficiently material to Network Rail to incentivise behaviour and that Network Rail was more incentivised by performance targets and reputational risk. In the routes the more important driver was the delivery of performance: *“Performance is key, this is more important at driving NR behaviour than charges and incentives.”*

Figure 23: TOC view on the effectiveness of charges and incentives



Most TOCs felt that the regime was effective as a mechanism for allocating costs to those that cause them and for NR to recover the cost of providing the infrastructure. However, the regime was perceived to be less effective at minimising whole industry cost and providing an incentive to NR and operators to improve performance and make more efficient use of the network.

FOCs thought that the charges and incentives were more effective at providing incentive to train operators, their suppliers and funders for the efficient use of the Network Rail infrastructure than the TOCs. This is likely impacted by the fact the franchised TOCs are protected from the regime whereas for FOCs the regime can have a significant impact on profitability, as one FOC explained: *“Charges vary between 10-20% of our costs depending on the service delivered...we are taking active steps to reduce negative impact of incentives.”* Although FOCs commented that these incentive properties were limited by the number of charges that were fixed costs and therefore they were accepted costs of using the railway.

OA operators were supportive of the cost recovery and mechanism of cost allocation that the charges achieved but were unsupportive of the view that the charges had any other benefits.

Funders had a less positive view on the effectiveness of the charges and incentives as a mechanism to allocate costs to those that cause the costs to be incurred. A likely explanation for this could be the fact that franchised operators are largely held neutral to the C&Is with costs flowing back to the funder, as one funder described: *“it is frustrating that TOCs are held harmless to charges and passed onto funders. There is no incentive for TOCs to adjust behaviours.”*

While funders found this frustrating there was mixed appetite to expose operators to cost reflective charges. Some funders were concerned by the impact this could have on increasing the risk premium in franchise bids. While others were more concerned that the C&Is drove the right behaviours and that it was less important that they were cost reflective. One funder explained cost-reflective charges were only beneficial when TOCs can address the cause of costs: *“Where charges accurately reflect costs and can be acted upon by TOCs, they can lead to more efficient behaviour. However, if they don’t reflect underlying costs or TOCs can do nothing in response then they are just a transaction cost with little or no benefit.”*

Funders also commented that the decisions that shape the network are made in the franchise stages; the C&Is have less impact. It is therefore important the decisions made at the franchise stage are made with the best understanding of costs. This is more important than having cost-reflective charges as one funder explained: *“We can only make optimal decisions on where to invest if we have a true understanding of costs.”*

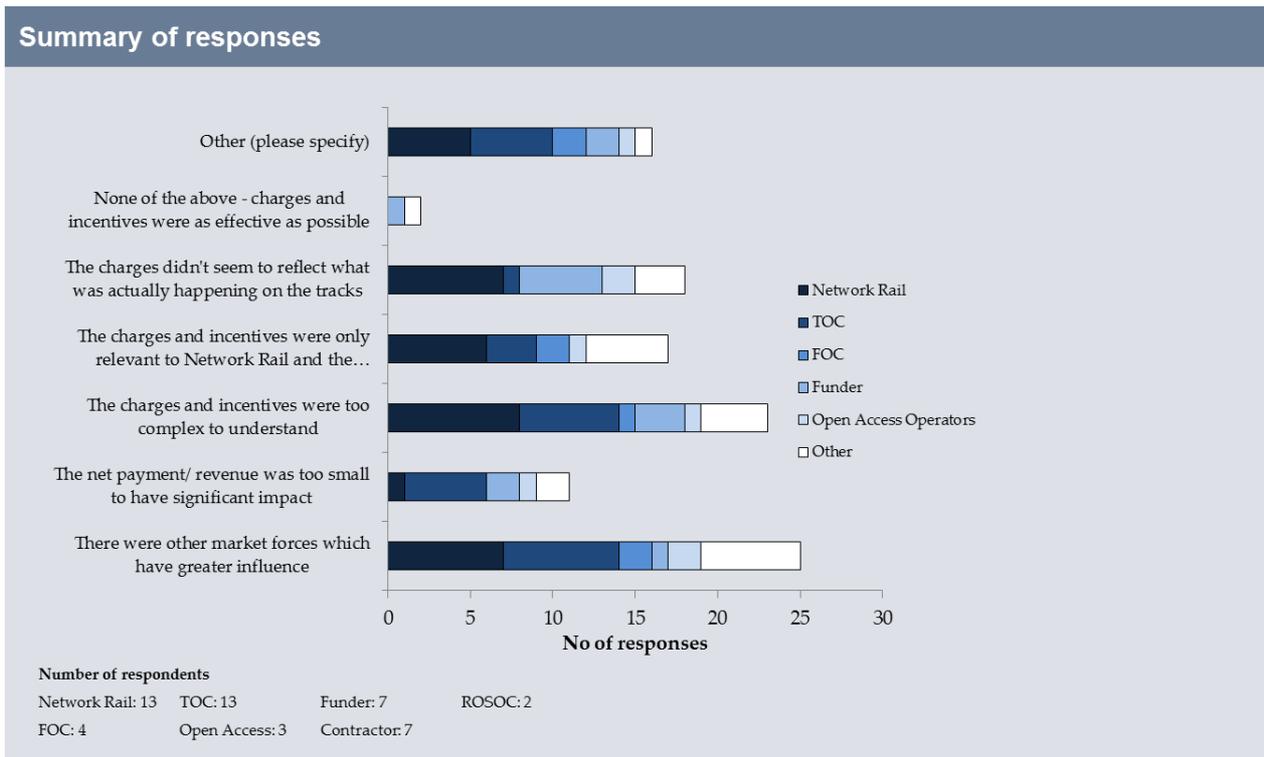
Other industry parties, Contractors, ROSCOs and train manufacturers had a less positive view of the effectiveness of C&Is overall, in particular as a mechanism to allocate the costs to those that cause the costs to be incurred. This is partly driven by an acknowledgement that often the cause of delay can be hard to determine especially where it’s due to the confluence of a number of factors or organisations.

ROSCOs and train manufacturers were mostly impacted by the variable usage charge and EC4T charge in CP4. Notably, these parties felt the charges were less effective at the allocation of costs.

The charges and incentive regime was effective at recovering costs but had a smaller role on driving incentives for greater efficiencies or improved performance

5.1.4 Were there any factors that limited the effectiveness of the charges and incentives regime in CP4?

Figure 7: Limiting factors on the effectiveness of the charges and incentives regime



The main factors limiting the effectiveness of C&Is was the presence of other market forces which had greater influence on behaviour, these are principally financial, customer service and reputational drivers and are discussed in greater detail in section 4.

The second most common limitation was complexity. There was significant debate as to whether this view was driven by the actual complexity of the charge/ incentive or an individual's lack of understanding of how these charges work, the two factors are linked, and discussed in section 3. There were significant variations in the level of understanding between organisations and within organisations. The industry felt that the ORR could have played a greater role in the communicating and educating the industry on charges. One route commented on the challenge that consultations posed: *"Consultations are too long and complicated. People don't understand or have the time to understand."*

Network Rail view:

Network Rail selected the complexity of charges as the most limiting factor driving effectiveness. A lack of understanding curtailed the effectiveness of charges. This was particularly the case in the routes: *"I believe individuals would take on greater responsibility if they understood and had control of more of the charges. This would require further devolution of charges at route level something that has gradually happened over CP4."*

The understanding of C&Is by engineers on the ground was limited by the lack of translation of C&Is into engineering KPIs.

In NR's survey responses there was consensus that complexity and other market forces were a key influence limiting the effectiveness of the charges. However, in the interviews, much greater importance was given to the net payment/ revenue being too small; low materiality was consistently given as a reason for why the charges and incentives did not carry more weight.

A key limiting factor in the "other" category of limiting factors was that passengers TOCs are protected from the charges by the nature of their franchise agreements. Network Rail commented: *"The franchise protection enjoyed by TOCS effectively turns off significant parts of the incentive regime for large parts of railway traffic."*

TOC view:

For the TOCs, the main limiting factor in CP4 was the presence of other market forces which have greater influence and the quantum of some charges being relatively small. Nearly all the TOCs we sampled were focussed on safety, profit and compliance with their Franchise Agreement, and said that the regime did not impact their decision making: *“We aim to improve operational performance. But this is driven by our focus on delivering the contract we have with the DfT and on delivering profit targets, not on the C&I regime”*. Another TOC commented: *“the individual charges are relatively small and other market forces tend to dominate decision making.”*

A number of TOCs also felt that the regime was overly complex and difficult for TOCs to understand and apply: *“The C&I regime may be well designed from an economics perspective, but is far too complex for the real world – simplification could make it more effective in achieving its desired outcomes”*.

TOCs agreed with NR that the effects of C&Is were watered down by the franchise process, which holds franchised TOCs harmless to many of the regime’s incentive properties.

FOC view:

The FOCs concurred that complexity was a limiting factor, not only for them but also for their customers: *“Track Access Charges are complicated. They are not simple for FOC customers to understand even if they wish to do so.”*

The FOCs also felt the effectiveness of the charges and incentives was limited by the lack of incentive properties: *“The present regime is all stick. There are no real incentives to invest in performance in the long term and therefore give real step changes in performance through the procurement of more reliable assets.”*

Other stakeholder views:

Funders highlighted the limiting factor that charges didn’t reflect what happening on the tracks due to the structure of some of the C&Is. Specific feedback on each of the charges is discussed in the relevant section of this report.

Contractors, ROSCOs and train manufacturers remarked that the charges and incentives have little or no direct impact on them which in itself, limited their effectiveness. For example contractors were only exposed when they were in pain/gain contracts. There is a real appetite among the contractors for greater exposure to the costs of maintaining the railway infrastructure through alliance arrangement with Network Rail. The contractors were confident they had much expertise to offer Network Rail to help drive efficiency.

The presence of other market factors and the complexity of the charges were perceived as key limiting factors of the charges and incentives by the rail industry

6 APPENDIX B: DRIVERS OF BEHAVIOUR IN OTHER REGULATED SECTORS

This section describes our findings from primary research with representatives of other regulated sectors outside rail – namely, the water, electricity distribution and telecoms sectors. We acknowledge these sectors are structurally very different from the rail industry, that they are at different levels of maturity, that they have different ownership models and that they experience different commercial pressures.

However, they have in common a regulator that attempts to drive competition, performance, and a better service for the consumer through pricing signals, incentives/penalties and other levers. The parallels we draw across these sectors are purely for comparison with the rail industry, we advise caution in taking these observations and concluding on their relevance for rail given the above noted differences between sectors.

6.1 Water

The water industry in the UK constitutes 12 water and sewerage providers and a further 12 water-only providers. The industry is regulated by Ofwat, and also by the Drinking Water Inspectorate and the Environment Agency.

We have held interviews with three UK water and sewerage providers [WASPs]. Our correspondents were, on the whole, focussed on regulatory economics and showed a good knowledge of the influencing factors on the industry from both a regulatory and commercial perspective.

Through our conversations in the water industry, we identify the following as the priority motivations behind stakeholders' behaviour:

Drivers of behaviour	Degree to which driven by regulation vs. other factors
1. Security of supply and drinking water quality <i>"Water is necessary to life, we are almost like a second health service"</i>	<ul style="list-style-type: none"> • Mostly driven by the DWI who are a pseudo-regulator but with a focus on safety • Some financial regulation from DWI to ensure appropriate investment is being made • Significant moral imperative to providing quality and safety of supply
2. Maintaining high levels of customer service <i>"We are genuinely committed to being a respectable company and doing a good job for our customers"</i>	<ul style="list-style-type: none"> • Ofwat administer incentives through the SIM • Again, this is driven by an ethical duty to take care of customers • Reputation amongst customers is very important and commercial forces factor less strongly in decision-making
3. Cost efficiency <i>"We see very strong incentives to drive down costs, and accordingly this is a big focus of the company's efforts"</i>	<ul style="list-style-type: none"> • Regulation, and incentives in particular, are a key driver of this • Some evidence that there have been perverse incentives in the past

6.1.1 Security of supply and drinking water quality

The output of primary importance in the water industry is companies' ability consistently to provide safe and reliable drinking water. Water quality checks are held by the Drinking Water Inspectorate, which is viewed as a quality regulator to the industry alongside the Environment Agency. Despite this, the main driver of performance in this area remains an obligation to customers:

"Overall [WASP] is genuinely committed to being a respectable company, providing a consistent and reliable service and therefore doing a good job for its customers."

Regulation Manager, WASP

"With drinking water quality, our focus on performance is driven by [WASP]'s reputation with customers."

Competition and Regulation Manager, WASP

6.1.2 Maintaining high levels of customer service

Customer service is overseen by Ofwat through the Service Incentive Mechanism (SIM). Throughout our interviews, this was the most commonly cited example of regulation acting as a direct driver of providers' behaviour. Broadly, the SIM involves a survey of customers who have made contact with their water company, and assesses satisfaction with the service received. Water companies are financially incentivised in relation to their SIM performance, and results are published to the industry in the form of a league table.

Correspondents were very familiar with the SIM and found its structure to be clear and easily explained, although there were some differences in opinion on the extent of its financial impact:

"I would say that the financial incentive is medium-sized, as it can impact our revenue by as much as +0.5% / - 1.0% via a variation in our price limits. There is a simple dynamic here - if we perform better, we are allowed higher price limits."

Regulation Manager, WASP

"There is a financial aspect to the SIM, but it is a small reward for our efforts – I think it is worth about £4.5m on our revenue of £950m a year"

Head of Regulation, WASP

However, there was agreement that the SIM drives positive change in providers' behaviour, and that as an incentive it is well aligned to company objectives:

"The SIM drives our behaviour in two ways: financially and reputationally. I think the two aspects go hand-in-hand – the stronger the incentive, the more we will want to meet customers' expectations."

One correspondent described how the SIM has become central to company strategy:

"If we can achieve our SIM targets then there will be a cascade of further benefits: a more mature relationship with the regulator; our customers will be more satisfied and therefore more likely to pay their bills on time; and as a company we will be able to raise capital at lower interest rates."

Regulation Manager, WASP

6.1.3 Cost efficiency

Regulation plays a key part in driving cost efficiencies within water and sewerage companies, and Ofwat carries out an audit of WASPs' business plans at every price review to determine the extent to which cost is appropriately controlled.

Today's cost performance regulation can potentially be interpreted as providing a perverse incentive. For historical reasons, capital expenditure (Capex) is assessed differently to operating expenditure (Opex) such that there is a bias towards reducing operating cost:

"There are very strong incentives to drive down operating costs. To illustrate this, [WASP] will retain the benefit of any savings we can make for a full 5 years before they will be passed on to our customers through a new set of prices. There is something of an imbalance here, because in terms of materiality, the benefit from £1 of opex efficiency equates to £3 or £4 of capex efficiency."

Head of Regulation, WASP

This imbalance has resulted in WASPs achieving the greatest possible operating efficiency, partly through committing to capital expenditure.

As a result of the identified bias, Ofwat will move to a 'totex' view of expenditure for the next price control period (2015-2020). This provides a clear example of a regulator adjusting its incentive mechanism in response to a maturing industry:

"I see the move to totex as Ofwat's reflection on a maturing industry. There has been a tremendous amount of investment since privatisation, and a significant amount of capital investment hasw been put in. We now need to start thinking about sustainability and resilience of the water network and try to get more out of the existing infrastructure."

Regulation Manager, WASP

On the basis of this evidence, it is clear that the appropriateness of a given incentive or price review system will vary according to changes in the industry. In this case, Ofwat has been prompted to review the structure of its efficiency reward mechanism in reaction to trends in stakeholders' responses over time.

6.1.4 Regulatory approach – summary

In summary, it is clear that the regulator actively drives the industry's approach to cost efficiency. Indeed, a rebalancing in the importance of opex and capex efficiency is seen as an important change in the industry, which will have a material effect on WASP business plans in the future:

"The cost efficiency incentives are absolutely the clearest mechanism we operate under. I am pleased that the change to totex will encourage the industry to think sustainably in the future."

Regulation Manager, WASP

6.2 Electricity Distribution

Electricity distribution network operators (DNOs) are responsible for the local distribution of electricity to homes and businesses. There are 14 DNOs in the UK (and 4 active independent DNOs), operating regional monopolies. DNOs are responsible to Ofgem, whose aim is to 'promote effectively functioning markets and networks' – achieved through financial regulation, including price controls, and monitoring of behaviours and practices.

The key drivers of Distribution Network Operators (DNOs) behaviour were follows:

Motivations mentioned by correspondents (in priority order)	Degree to which behaviour is driven by regulation vs. other factors
<p>1. Operational performance</p> <p><i>"The key metric is around reliability of the network, covering interruptions to supply and measuring the number of minutes lost"</i></p>	<ul style="list-style-type: none"> • This is led by Ofgem as the regulator • There are associated financial rewards and penalties under an incentive mechanism, based on performance against target • Industry analysis adds a further level of accountability
<p>2. Customer satisfaction</p> <p><i>"The financial incentive may not be huge, but customer service is a key reputational aspect for us"</i></p>	<ul style="list-style-type: none"> • Similarly to the water industry, taking care of customers is important from a moral standpoint • Financial backing is provided by long-term (30-40 year) investors, for whom customer satisfaction is a key measure of a business performing well • Regulation has a limited impact in this area
<p>3. Innovation</p> <p><i>"The regulator's use of incentives to promote innovation has led to a step-change in approach for all UK DNOs"</i></p>	<ul style="list-style-type: none"> • Regulation has <i>enabled</i> innovation to take place • Historically, regulation was a hindrance to progress on innovation

6.2.1 Operational performance

Operational performance is central to DNOs decision-making, and is driven largely by regulatory activity. The most important performance metrics, as stated by DNOs, are Customer Minutes Lost (CML) and Customer Interruptions (CI). Ofgem sets performance targets for these metrics individually by DNO under its Quality of Service Incentives, which act as very strong motivation for behavioural change:

"We have taken notice of Ofgem performance targets in a significant way. We have improved performance on CML by 30% since 2000, and are targeting a further 20% reduction over the next 5 years. The effect of this incentive was worth £5m to us last year."

Chief Executive, UK DNO

The QoS incentives for CML and CI are together expose up to 3.0% of DNOs' revenue, and this is a sufficiently material driver to prompt DNOs to invest in improving performance to exceed Ofgem's targets. In addition, the incentive is seen to have immediate impact through in-year payment:

"This incentive provides 'fast cash' – we are paid in-year, albeit with a 2-year time lag, so we see a direct influence from the incentive payments."

Chief Executive, UK DNO

Correspondents also noted that DNOs tend to be heavily analysed by the City and by market commentators, which further drives pressure to meet and exceed Ofgem performance targets.

6.2.2 Customer satisfaction

While there is an Ofgem incentive relating to customer service performance (the Broad Measure of Customer Satisfaction (BMCS)), this is not the strongest driver of behaviour in this area:

"The incentive relating to customer satisfaction is not huge relative to our turnover. However, customer service is a key reputational aspect for us, and performance is published to the industry."

Chief Executive, UK DNO

It is unusual that reputation should be an important factor in an industry with little direct contact with the end-user of services. One explanation for this is that, since customer satisfaction scores are made public for cross-industry comparison, these allow for a 'benchmarking' amongst DNOs which gives a quantitative measure of relative performance.

However, our conversations suggest that there is a more altruistic driver of customer service in simply 'doing a good job' for customers. This appears to be driven by an ethos of high performance:

"The network is currently 99.9% reliable, and so we very rarely see periods of very poor performance. There was a lot of fuss over Christmas 2013 about the number of people cut-off, but this kind of coverage is very rare. As such, we pride ourselves on very high performance, and reputation is very meaningful to us."

Chief Executive, UK DNO

In an industry where uptime and reliability is of critical importance to customers, operators are to a degree driven by a moral imperative to achieve high standards – without any specific prompting by the regulator.

6.2.3 Innovation

Regulatory measures have had significant influence on the behaviour of DNOs towards innovation, with a number of significant changes in recent years. Before innovation was prioritised by the regulator, there was little or no activity on the part of DNOs to develop innovative solutions:

"Ten years ago there was no separate funding for innovation and no commercial drivers. Distribution companies had no need to invest in innovation, and were actually penalised for doing so because they were being assessed on their efficiency and control of costs. This scenario saw innovation ceased amongst distribution companies, and something clearly needed to be done to rectify this."

Chief Executive, UK DNO

By contrast, innovation is now promoted by the regulator in the current price control period through the Low Carbon Networks Fund and the Innovation Funding Incentive. These have allowed DNOs to bid into funding to develop technologies to deliver low-carbon energy and help to build the networks of the future.

Ofgem insisted that learnings as a result of such projects should be shared with the industry. This provided a number of incentives to DNOs:

“We ploughed all of our innovation funding into improving reliability of supply. As such, we were able to achieve a double-payoff – both the increased funding for innovation and a kick-back in the incentive paid for improving reliability. This investment worked very well indeed, and we were able to support a number of start-ups and SMEs with innovative ideas in the process.”

Chief Executive, UK DNO

Evidence therefore suggests that financial regulation has the capability to stifle creativity on the part of stakeholders if incentives are not well aligned. On the other hand, there is clear evidence that a regulator has the power to promote a given theme heavily, and that stakeholders react strongly to such motives.

6.2.4 Regulatory approach – summary

The three areas highlighted above illustrate the differing means by which the regulator influences behaviour in electricity distribution. There are strong incentives to drive operational performance on key technical metrics, and DNOs have achieved significant performance improvement as a result. Similarly, Ofgem’s definitive policy changes have removed a disincentive towards innovation, and now actively encourage it. On the other hand, customer satisfaction is driven by a combination of industry benchmarking and moral obligation, with limited requirement for intervention from the regulator.

6.3 Fixed-line Telecommunications

The majority of the fixed-line network in the UK, specifically the core and local access networks, is managed by BT through its Openreach division. Communications Providers (CPs) such as TalkTalk or Sky then access BT’s network in order to provide service to their end users. A key regulatory objective has been to ensure healthy competition between CPs, which in turn fosters innovation and value-for-money. Critical to this objective has been the effective regulation of BT as the incumbent operator to ensure effective competition and equality for other operators.

We have spoken to a senior representative of Ofcom, as well as a number of industry experts with current regulatory experience and career experience within leading CPs. Participants have asked us to preserve anonymity, and as such we do not identify sources of quotations below. Through our interviews in this industry we have established the following as key motivations of stakeholder behaviour:

Motivations mentioned by respondents (in priority order)	Degree to which behaviour is driven by regulation vs. other factors
<p>1. B2C Performance</p> <p><i>“B2C service standards are what matters most to BT, as there is quite clearly a direct customer impact if they underperform on these metrics”</i></p>	<ul style="list-style-type: none"> • Driven by the propensity for customers to switch provider where they are not happy with the level of service • Additionally, Ofcom convenes a Consumer Group to monitor performance and intervene when necessary
<p>2. B2B Performance</p> <p><i>“When it comes to working with Openreach and the CPs, Ofcom largely watches one side beat the other up.”</i></p>	<ul style="list-style-type: none"> • Mostly driven by the commercial motivations of Openreach and CPs • A series of technical KPIs are published by the OTA (Office of the Telecoms. Adjudicator) and analysed by third-parties • Ofcom aims for a hands-off approach, but is a second line of defence in the case of disagreements between Openreach and the CPs
<p>3. Industry collaboration and effective relationships between stakeholders</p> <p><i>“The OTA is especially useful in mediating conversations that are many-to-one; that is, where multiple CPs need to interact with Openreach.”</i></p>	<ul style="list-style-type: none"> • The OTA plays a role in managing conversations • This acts to limit the impact that competition may have on eroding working relationships within the industry

6.3.1 B2C Performance

It is clear that maintaining a high level of performance in B2C services is a key driver of behaviour for BT and the other CPs. Key metrics and outputs in this area concern, for example: customer satisfaction with call centres; time taken to deal with faults; transparency on pricing, terms and conditions. The single strongest driver of B2C performance is customer retention, especially since fixed line telephony is often the gateway to bundled ‘triple-play’ and ‘quad-play’ products:

“Customers are able to vote with their feet; so churn, a simple market force, is a strong driver for CPs to improve their B2C performance.”

Industry Expert

CPs are also driven by regulatory activity in this area. Ofcom convenes a special ‘Consumer Group’ to monitor performance and undertake enforcement activity on behalf of consumers. The regulator has the power to wield significant penalties, including in extreme cases withdrawal of operating licences, and the raising of Judicial Review. However, these measures are used sparingly:

“While Ofcom has the means to apply strong remedies to issues that arise, the strict process involved means that this is rarely the solution. Instead, the regulator relies much more on reputational risk as a means of driving improvements in performance.”

Industry Expert

This approach is supported by the fact that political intervention in the industry is low. On the whole, the cost to consumers for telephony services is falling due to the impact of technology, and so unlike some other regulated industries there are currently no ‘cost-of-living’ arguments to contribute pricing pressure.

In summary, while Ofcom takes full responsibility for financial regulation, evidence suggests that the strictest measures are not enforced unless absolutely necessary. Instead, behaviour is driven by an obligation to customers – substantiated by the risk of customer churn.

6.3.2 B2B Performance

The quality of service provided by Openreach is measured through a suite of technical KPIs (on throughput, repairs, connections) that are recorded by Openreach and published by the OTA. This appears to be in place mostly as a means of transparency:

“The OTA produces a monthly performance update, which is widely read by City analysts and Openreach themselves. In effect, this is just a mechanism to ‘feed-back’ Openreach’s KPIs but there is a lot of interest within the industry and in the City around the monthly figures.”

Industry Expert

Separately, Openreach is held accountable to its performance through its contractual obligations (Service Level Agreements / Service Level Guarantees) to CPs. Openreach is required to compensate the CPs where performance falls below the stipulated level. As such, B2B performance is controlled largely without the need for regulatory intervention, although Ofcom can, and does, intervene:

“Ofcom is aware that the level of service Openreach provides to the CPs has fallen. It is able to act as a second line of defence in addition to the sanctions already in place, in order to ensure standards are being met.”

Industry Expert

6.3.3 Partnership working

Given the position of Openreach as manager of the fixed line infrastructure, it has simultaneous obligations to all of the CPs. This complex set of relationships is managed, in part, by the OTA:

“While the OTA is not involved directly in pricing or policy, it tries to actively manage relationships between Openreach and the CPs. These parties operate under a number of disincentives to collaboration, and as such the OTA tries to balance the situation and mediate discussions between the parties.”

Industry Expert

The OTA engages on operational issues, and can act as an independent third-party where, for example, incentives for each of the parties are misaligned:

“As an example, Openreach are mandated via Ofcom to act on new connections within 14 days, but they are not generally transparent with the date and time that this will occur. Of course, CPs have obligations to their customers – who will expect to receive clear communication of when an engineer will visit. The OTA has helped to address this issue as a third-party.”

Industry Expert

The motivation for Openreach and the CPs to take notice of the OTA is through its link to Ofcom as the regulator. Whilst it does not hold adjudicating powers, there is a clear remit for the OTA to participate in cross-industry negotiation.

6.3.4 Regulatory approach - summary

There is clear evidence that Ofcom has adjusted its approach to regulation over time:

“Over time Ofcom’s remit has adapted as the industry has become smarter. When it was formed in 2003, Ofcom took very much an industrial approach to regulation – controlling competition over assets for example. Today, I see that the regulator occupies two roles – firstly to maintain competition in the industry, and secondly to protect and educate the consumer.”

Industry Expert

In particular, this is achieved by regulating only where necessary, and allowing market forces or natural industry dynamics to govern activity outside of this:

“Ofcom makes significant efforts to limit ‘regulatory creep’. It understands where regulation works well, but also where intervention of the regulator is not necessary. Overall, there is actually a bias against regulation.”

Industry Expert

6.4 Conclusion

In this section we have considered the approach to regulation in three other industries: water, electricity and telecoms. Rather than focusing on charges, other sectors use a variety of incentive mechanisms to promote the appropriate behaviour from stakeholders. For example, evidence from a number of the water companies suggests that there are significant moral imperatives that drive performance, and that a ‘duty to customers’ is a key motivation. There is accordingly little requirement for intensive regulation or strict financial penalties. As such, respondents have described a ‘mature’ relationship with the regulator, where there is a common understanding of whole-industry objectives.

7 APPENDIX D: GLOSSARY

Abbreviation	Explanation
AML	Average Minutes Lateness
ATOC	Association of Train Operating Companies
BM	Benchmark
BMCS	Broad Measure of Customer Satisfaction
C&I	Charges and Incentives
Capex	Capital expenditure
CI	Customer Interruptions
CML	Customer Minutes Lost
CP	Communication Providers
CP4	Control Period 4
CP5	Control Period 5
DNO	Distribution Network Operator
DWI	Drinking Water Inspectorate
EAUC	Electrification Asset Usage Charge
EBSM	Efficiency Benefit Sharing Mechanism
EC4T	Traction Electricity Charge
FOC	Freight Operating Company
FTAC	Fixed Track Access Charge
IAP	Industry Access Planning programme
KPI	Key Performance Indicator
MRR	Maintenance, Renewal and Repair
NR	Network Rail
OA	Open Access Operator
Opex	Operating expenditure
PPM	Public Performance Measure (measures the number of trains reaching their final destination "on time")
PPS	Public Sector Specifiers
RDG	Rail Delivery Group
REBS	Route Based Efficiency Benefit Sharing Mechanism
ROSCO	Rolling Stock Operating Companies
S4	Schedule 4
S8	Schedule 8
SIM	Service Incentive Mechanism
Station LTC	Station Long Term Charge
TOC	Train Operating Company
TOG	Transport Owning Group
Totex	Total expenditure (capital expenditure plus operating expenditure)
VTISM	Vehicle Track Interaction Strategic Model
VUC	Variable Usage Charge
WASPs	Water and Sewage Providers

