

## Investment Recovery Charge – Department for Transport evidence paper

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## Introduction and context

### Introduction

1. This paper explains DFT's position that the ability to charge an Investment Recovery Charge (IRC) on HS2 infrastructure is an essential pre-requisite for HS2 Phase One to proceed.
2. DFT stated its position on the IRC to the Office for Rail and Road (ORR) in a 21 January 2020 letter from Clive Maxwell (DG, High Speed and Major Rail Projects Group), to John Larkinson (Chief Executive, ORR). That letter set out DFT's rationale for an IRC to be levied on users of HS2 infrastructure.
3. John Larkinson replied to Clive Maxwell's letter on 29 January 2020, saying that ORR considered the rationale to be consistent with the legal requirements to be able to charge an IRC, subject to the provision of contemporaneous documentary evidence supporting the points set out in Annex A of DFT's letter.
4. This paper sets out DFT's documentary evidence to support its position and to demonstrate its view that the requirements of regulations regarding the charging of an IRC are met.

### The Investment Recovery Charge

5. The 2016 Regulations<sup>1</sup> set the legal framework for access to, and charging for use of, railway infrastructure. In general, charges for access to railway infrastructure must be set at the cost that is directly incurred as a result of operating the train service, unless an exception applies.
6. Under one of these exceptions, set out in paragraph 3 of Schedule 3 to the 2016 Regulations, it is permitted for an Infrastructure Manager (IM) to set or continue to set higher charges on the basis of the long-term costs of the project provided that three conditions are met:
  - i. the higher charges must relate to a specific investment project completed since 1988 or following the coming into force of the 2016 Regulations;
  - ii. the project must increase efficiency or cost effectiveness;
  - iii. the project must be one that could not otherwise have been undertaken without the prospect of such higher charges.
7. The term "investment recovery charge" or "IRC" refers to a charge under this exception.

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<sup>1</sup> <http://www.legislation.gov.uk/uksi/2016/645/made>

DFT's position

8. DFT's view is that the proposal to charge an IRC for services using HS2 infrastructure meets all three limbs of the test. Its rationale for this was set out in Annex A of Clive Maxwell's 21 January 2020 letter to John Larkinson, and this is restated below (updated to reflect the fact that Ministers have now formally given HS2 Ltd notice to proceed with Phase One of HS2). This is dealt with more fully in Section 1.

Investment completed post 1988; or following the coming into operation of these regulations

9. Work on Phase One of HS2 between London and Birmingham began in 2018 following Royal Assent of the High Speed Rail (London-West Midlands) Act 2017. Since then there has been a programme of design work and preliminary enabling works, and approval to commence construction was given in April 2020.
10. Phase 2a is planned to extend the line to Crewe and Phase 2b will extend the line in a 'Y' shape to Manchester in the west and Sheffield and Leeds in the east, with connections onto the national network completed by 2035-2040.

Project increases efficiency or cost effectiveness

11. HS2 will form the new backbone of our national rail network, providing new capacity and better connections to our major cities, whilst creating more space for commuter and freight trains on our busiest lines. HS2 is predicted to generate significant transport benefits and economic benefits across the UK, having a transformational effect on the country by supporting growth and increased productivity, particularly in the North. It will improve connectivity, free up space on our crowded rail network, promote regeneration, boost local skills, generate tens of thousands of jobs and help secure the UK's future prosperity.
12. DFT has set out its case on the benefits that the project will bring to the UK in the Strategic Case for HS2, last updated for the Full Business Case (FBC) for HS2 Phase One that was published in April 2020. The Economic Case in the FBC estimates that for the full HS2 Network, every £1 invested the UK will receive £1.50 in benefits, delivering £94.7bn in benefits overall (including wider economic impacts).<sup>2</sup>

The project could not be undertaken without the prospect of charges based on the long-term recovery of costs

13. The key decision to undertake HS2 Phase One is dependent on the prospect of the charges for use of HS2 infrastructure including a charge based on the long-term recovery of construction costs, i.e. an IRC. This is for the following reasons:
  - (i) The decision to issue the Phase One Notice to Proceed was contingent on the project being agreed by DFT ministers and securing all necessary approvals across Government. In particular HM Treasury's approval was required.

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<sup>2</sup> HS2 Phase One Full Business Case, Table 2.1, page 46 <https://www.gov.uk/government/publications/hs2-phase-one-full-business-case>

- (ii) Ministerial agreement for the Notice to Proceed also required that the project was supported by an acceptable business case, as required by Managing Public Money. This includes an economic case demonstrating that the project is value for money and a financial case demonstrating that the project is affordable.
- (iii) Both the value for money and the affordability assessments in the business case rely on the operating surplus from HS2 being returned to Government. The economic case relies on these revenues being received by Government to offset initial construction costs, while the financial case relies on these revenues being available to Government to pay for additional support to the classic rail network.
- (iv) For a project of this scale and duration to be approved, Ministers must be confident that the benefits of the project will be resilient to long term changes in Government policy and the wider commercial environment. This means that there must be maximum flexibility regarding the potential future operational and commercial models for HS2; we have been clear in particular that this must include the possibility of sale of a concession to manage HS2 infrastructure in order to provide early recovery of a significant proportion of the costs incurred.
- (v) The ability to charge an IRC is essential in this respect, as it provides an income to the IM that is over and above the direct costs it incurs. Crucially, our analysis shows that without an IRC the sum that could be raised in an infrastructure concession sale would be negligible, effectively ruling out this route as a commercially viable option.
- (vi) The consequence of not charging an IRC would be to restrict Government to a limited range of models in which it could rely on recovering surplus revenues via the operator in a franchise-type arrangement, precluding the introduction of alternative models on HS2.
- (vii) Further, the absence of an IRC would allow the possibility of open access operators operating services without contributing to the costs of construction because there would be no contractual mechanism by which the Government could charge a “premium” as it currently does in relation to franchised services.
- (viii) DfT has assessed the potential revenues to Government under a range of potential commercial models if an IRC were not permitted. This analysis shows that under some commercial models the business case would no longer be able to rely on surplus revenues being returned to government, which would mean that the project would no longer be considered affordable or value for money. This presented a risk that the project could not go ahead without the prospect of an IRC.

### Structure of this paper

14. This paper provides evidence to support DFT's position that the decision to undertake HS2 Phase One was dependent on the prospect of the charges for use of HS2 infrastructure including an IRC.
15. The evidence is set out in a way that can be mapped to the 8 reasons set out in paragraph 13. The main evidence is set out in 3 sections and annexed to this paper is further supporting analysis. The sections are structured as follows:
  - Section 1 of this paper describes the decision to issue a notice to proceed for HS2 Phase One and provides evidence in support of points (i) and (ii) in paragraph 13.
  - Section 2 of this paper explains the importance of the IRC to securing key assumptions in the business case and provides evidence in support of points (iii), (iv), (vi), (vii) and (viii) in paragraph 13.
  - Section 3 of this paper demonstrates the importance of the IRC to preserving the ability of Government to sell an HS2 concession at a later date and provides evidence in support of points (iv) and (v) in paragraph 13.

## Section 1: the decision to proceed with HS2 Phase One

16. Following Royal Assent of the Phase One Hybrid Bill in 2017, the key decision confirming that HS2 Phase One should be built was “Notice to Proceed” (NTP). As the point at which government authorised HS2 Ltd to approve Stage 2 of the Main Works Civils Contracts and start the construction phase this was the effective “go/no-go” decision for Phase One.
17. HM Government gave its consent to Phase One NTP in April 2020. This was on the basis of detailed advice on the project, its costs and benefits and on the way the project will be managed. This followed close scrutiny of the project and its business case by DFT’s Investment, Portfolio and Delivery Committee (IPDC) the senior board in DFT responsible for reviewing the department’s major investment proposals and making recommendations to DFT Ministers.
18. The decision also required the approval of HM Treasury which was provided following scrutiny by the Government’s Major Projects Review Group (MPRG). MPRG is a scrutiny panel for major central government projects and programmes, sponsored by HM Treasury and coordinated by the Infrastructure Projects Authority (IPA).
19. The decision to agree to NTP required DFT to prepare a detailed and rigorous “Full Business Case” (FBC), in accordance with Treasury “Green Book” requirements. This FBC was subject to scrutiny by both IPDC, MPRG. and Ministers in DFT and HM Treasury. The FBC has been published by DFT<sup>3</sup>.
20. In parallel with this paper DFT is providing ORR with a supplementary note summarising the governance process that applied to the NTP decision, together with relevant extracts from advice to ministers and scrutiny bodies and other correspondence relating to the decision. The information is provided separately from this paper as it contains details of confidential advice to ministers and is provided on the understanding that it will not be published.
21. DFT announced in August 2019 that Douglas Oakervee would chair an independent review of HS2. The review was asked to consider the project’s benefits and impacts, affordability and efficiency, as well as its delivery, scope and phasing. The purpose of the Review was to allow the Prime Minister, the Secretary of State for Transport and the Government to make properly-informed decisions on the future of Phases One and Two of the project, including the estimated cost and schedule position. The review was supported by a panel of experts, representing a range of viewpoints, to ensure an independent, thorough and objective assessment.
22. The Oakervee Review was published on 11 February<sup>4</sup>. The review concluded that “the original rationale for HS2 still holds. There is a need for greater capacity and reliability on

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<sup>3</sup> <https://www.gov.uk/government/publications/hs2-phase-one-full-business-case>

<sup>4</sup> <https://www.gov.uk/government/publications/oakervee-review-of-hs2>

the GB rail network as a whole ...accordingly, the Review strongly advises against cancelling the HS2 scheme”<sup>5</sup>.

23. When the Oakervee review was published the Prime Minister made a statement in Parliament on transport infrastructure. He said that the Oakervee review “leaves no doubt of the clinching case for high speed rail. A vast increase in capacity, with hundreds of thousands of extra seats ... So today Mr Speaker, the Cabinet has given high speed rail the green signal.”<sup>6</sup>
24. While providing high level political agreement to the project, this announcement was not the NTP decision. The Oakervee Review was clear that NTP is the key go/no-go decision for Phase One and it set out a number of further steps that the Government should take prior to taking the NTP decision. This included work to finalise the FBC, including the latest costs and benefits for the project<sup>7</sup>.
25. The Oakervee Review contained 63 conclusions. The Prime Minister’s statement confirmed that the Government agreed with one key conclusion (conclusion 63), which was that HS2 should not be cancelled. However the statement did not address directly many of the other issues raised in the Oakervee Review, as the Government was at that time still considering some of those conclusions.
26. The Prime Minister’s statement also emphasised the importance of further action being required to address issues regarding the management of the project and to control costs in order for HS2 to proceed. Following receipt of the Oakervee Review and the Prime Minister’s statement, intensive work was undertaken by DFT and HS2 Ltd, to finalise the FBC and address the key managerial and other issues that were raised.
27. The decision to issue NTP was taken once Ministers were content that those further steps had been completed. This included confirmation that the FBC had been updated and was now acceptable. The NTP decision was taken by the DFT Secretary of State, once the consent of the Chief Secretary to the Treasury had been secured and the announcement cleared with the Prime Minister’s Office.

#### Conclusion to Section 1

28. This section, together with the further evidence regarding the governance process for the NTP decision that has been provided in confidence to ORR, provides evidence in support of points (i) and (ii) set out in paragraph 13. This is that the decision to issue the Phase One NTP was contingent on the project being agreed by DFT ministers and securing all necessary approvals across Government. In particular HM Treasury’s approval was required. Ministerial agreement for the NTP also required that the project was supported by an acceptable business case, as required by Managing Public Money.

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<sup>5</sup> Oakervee review paragraph 3.1

<sup>6</sup> <https://www.gov.uk/government/speeches/pm-statement-on-transport-infrastructure-11-february-2020>

<sup>7</sup> Oakervee Review paragraph 3.3

## Section 2: an IRC ensures that surplus revenues revert to Government

29. It has been clear from the early stages of the project that HS2 was not going to be capable of being funded through private finance and instead its construction will be paid for from general taxation and borrowing. The 2013 Financial Case, prepared for the HS2 Phase One Outline Business Case stage, said that “due to the scale, complexity and timeframe of the project, the starting assumption is that the funding of HS2 infrastructure will come in large part from central government funds.”<sup>8</sup> It summarised analysis on different financing options, concluding that “HS2 as a project is likely to be too large to be delivered via project finance. There is insufficient financial market capacity to support project financing on this scale.”<sup>9</sup> The public funding commitment was confirmed in the HS2 Phase One FBC, published in April 2020.

30. Government funds are heavily constrained and stringent tests are applied before funding is authorised. This includes strict HM Treasury rules around how spending proposals are developed and approved:

*“The Treasury scrutinises and approves project and programme spending outside delegated authorities to ensure that all spending proposals reflect the priorities of the government of the day and meet the 4 criteria for the use of public funds, as documented in Managing Public Money – regularity, propriety, value for money and feasibility. Often the value for money criterion is the most difficult to demonstrate. To this end, all spending proposals must be developed and presented in accordance with the Green Book supplementary 5-case model and Business Cases guidance.”<sup>10</sup>*

31. The Government’s approach since it first announced its intention to build HS2 in the 2010 Command Paper has been that the project must be underpinned by a robust business case. The 2010 Command Paper outlined the strategic case for HS2 and also included a value for money assessment<sup>11</sup>. Since then DFT has followed Green Book guidance in developing a business case on the Five Case Model<sup>12</sup> and taking a staged approach to business case development, culminating in an FBC. In line with this, as part of the Outline Business Case stage the Government published a Strategic Case<sup>13</sup> and an

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<sup>8</sup> 2013 Financial Case paragraph 58

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<sup>9</sup> 2013 Financial Case paragraph 88

<sup>10</sup> Treasury guidance on approvals process for programmes and projects paragraph 1.3

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/567908/Treasury\\_approvals\\_process\\_guidance\\_final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/567908/Treasury_approvals_process_guidance_final.pdf)

<sup>11</sup> 2010 Command Paper. The Strategic Case is set out in Chapters 2 and 3. The value for money assessment is summarised in Table 5.1

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<sup>12</sup> Treasury Green Book Guidance page 10

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

<sup>13</sup> <https://www.gov.uk/government/publications/hs2-strategic-case>



Economic Case<sup>14</sup> for HS2 in 2013 and this analysis was updated in 2017 the HS2 Phase Two Business Case<sup>15</sup>.

32. In this context the key cases are the Financial Case, which sets out that the project is affordable, and the Economic Case, which sets out that the project is value for money. The analysis in both cases in the HS2 Phase One FBC depends on an assumption that the surplus revenues from H2S operations will be available to Government. Government therefore needs to be confident that this will be the case and an IRC is considered essential to provide this confidence.
33. The FBC for HS2 Phase One therefore states that the Government intends that HS2 Ltd will levy an IRC on all operators using HS2 infrastructure. The IRC is essential to preserve as a credible option a future concession sale of HS2 and to ensure that the Government is able to recover surplus revenues from HS2 operations, as assumed in the FBC, regardless of the commercial model that might be implemented on HS2. In taking the decision to proceed with HS2 Phase One, ministers have endorsed the position in the FBC, that the ability to charge an IRC is a necessary pre-requisite for HS2 to proceed.
34. This is in line with longstanding DFT and wider Government policy positions. In 2016 the then DFT Secretary of State agreed that development of HS2 should be contingent on the future access charging policy for HS2 including that the IM will charge an IRC to train operators on HS2 infrastructure<sup>16</sup>, and this position was reflected in subsequent business case publications.

#### Financial case affordability assessment

35. The financial case is intended to assess the project's financial impact on the public sector and whether the project is affordable. This assessment covers both the construction period and the operational period. The latter period is the focus of this paper, and the financial case includes an assessment of the long-term impact of HS2 services on the overall public funding requirement for UK railways, both high speed and conventional.
36. The FBC Financial Case shows that once HS2 is fully operational there will be an improvement in the financial position of Britain's railways, ranging from around £170m (Phase One) to £670m (Full Network) per year<sup>17</sup>. This shows that HS2 will generate a return to the taxpayer in the operational phase, so long as the HS2 surplus revenues are available to the government to offset the additional subsidy requirement. If this surplus were not returned to the Government then the project would not be affordable as there would be a significant additional cost to the taxpayer. Ministers will need to be confident that this surplus will be returned to Government in order to conclude that the project is affordable and may therefore proceed.

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<sup>14</sup> <https://www.gov.uk/government/publications/hs2-economic-case-october-2013>

<sup>15</sup> <https://www.gov.uk/government/publications/hs2-phase-two-economic-case>. The HS2 Phase Two business case formed the 5 part outline business case (OBC) for HS2 Phase 2a and strategic outline business case (SOBC) for HS2 Phase 2b

<sup>16</sup> Evidence of this decision was provided to ORR in confidence in 2018.

<sup>17</sup> FBC paragraph 3.35

Economic case value for money assessment

37. The economic case is an assessment of whether the project represents value for money for the taxpayer, through the calculation of a benefit-cost ratio (BCR). The BCR is calculated by dividing an estimate of the benefits of a project by an estimate of the net cost to Government. The equation, in the case of HS2, is set out most clearly in the 2013 Economic Case:<sup>18</sup>

$$BCR = \frac{Net\ benefits}{Net\ Cost\ to\ Government}$$

Where: *Net cost to Government = Construction cost + rolling stock cost + operating cost + renewals – revenue*

38. For HS2, the net cost to Government is derived by adding together the various estimated costs – construction, rolling stock, operating costs etc – and deducting from this the expected revenues from the project. Details of the net benefits are set out in Figure 2.10 of the FBC, reproduced at Table 1 below, and include transport user benefits, other transport benefits and also wider economic impacts (WEIs), over a 60 year appraisal period.

	PV, Q1 2015 prices, £bn	Full network
1	Net transport benefits	74.2
2	Wider Economic Impacts (WEIs)	20.5
3	Net benefits including WEIs	94.7
4	Capital costs	78.2
5	Renewals	5.4
6	Operating costs	25.2
7	Total costs = (4) + (5) + (6)	108.9
8	Revenues	45.4
9	Net costs to Government = (7) – (8)	63.5
10	BCR without WEIs (ratio) = (1) / (9)	1.2
11	BCR with WEIs (ratio) = (3) / (9)	1.5*

*\*The Full Network BCR (Incl. WEIs) is 1.49 to 2 decimal points*

*Table 1: FBC Benefit Cost Ratio (BCR) calculation for the full “Y” network<sup>19</sup>*

39. This shows the scale of the assumed revenues, and hence their critical importance to the BCR calculation. The assumed revenues for the Full Network are £45.4bn, which is around 42% of the total cost of the project. As shown in Table 1, the BCR calculation is underpinned by the assumption that revenues from HS2 services are received by Government, to offset in part the costs of constructing the railway. If some or all of these revenues did not flow back to Government as assumed and instead leaked out of

<sup>18</sup> 2013 Economic Case page 81

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/365065/S\\_A\\_1\\_Economic\\_case\\_0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/365065/S_A_1_Economic_case_0.pdf)

<sup>19</sup> FBC Table 2.9 page 59

the project then this would have an adverse effect on the BCR calculation and reduce the value for money of the project to the taxpayer.

40. This means that Ministers must be confident that this surplus will be returned to Government in order to conclude that the project represents value for money and may therefore proceed.

#### The need to charge an IRC

41. The Economic Case modelling assumes that all services are run by a single public operator on HS2 infrastructure. The Financial Case has a similar assumption, with the affordability modelling assuming the Government can secure its assumed share of revenues through payments from the Train Operating Company (TOC) under a franchise-type agreement.
42. However, these are just assumptions for modelling purposes as no decision has yet been taken on the long term HS2 train operator model. If payments via a franchise-type agreement or publicly owned operator were the only means by which the Government could secure its share of HS2 revenues then this would tie the Government to a limited number of commercial models, even if there were good reasons for the Government to wish to operate a different model on HS2.
43. The alternative to relying on payments direct from the operator is for the IM to levy charges on operators that capture the surplus revenues, which can then be returned to Government via the IM, either through dividends or contractual arrangements. This is the value of the IRC – it provides a means by which the IM can charge all operators using HS2 infrastructure on an equal footing, ensuring that surplus revenues are returned to Government in line with the assumption underpinning the business case.
44. The early iterations of the HS2 business case did not consider how the operating surplus from HS2 would be secured by Government to offset initial construction costs and cover the additional subsidy requirements of the conventional network. Over time however DFT developed a clearer understanding of the risks, including from possible open access services, to the business case's assumption that surplus revenues will be returned to Government. By 2016 DFT had concluded that the ability for the HS2 IM to charge an IRC was essential to mitigate these risks to the business case, and hence for the project to proceed. The 2017 HS2 Phase Two Financial Case recognised that the IRC would need to be available to underpin the business case's revenue assumptions:

*“The Government intends that the HS2 Infrastructure Manager will levy an Investment Recovery Charge on all operators using the new high speed network... The ability to levy the Investment Recovery Charge is critical to recovering investment costs for the taxpayer and ensuring the long term affordability of HS2. We will determine the precise level and structure of this charge at a later stage in the project as part of the decisions on the broader charging and operating framework.”<sup>20</sup>*

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<sup>20</sup> 2017 Phase Two Financial Case paragraphs 2.13-2.14

45. Since then this has been the Government's consistent position, and it is stated clearly in the FBC as set out below. The FBC Financial Case says:

***Once HS2 is fully operational there will be an improvement in the financial position of Britain's railways. Our analysis suggests that this could range from around £170m (Phase One) to £670m (Full Network) per year. This is consistent with findings in previous business cases. There will be a benefit to the taxpayer, if the operating surplus from HS2 is available to the Government to meet the additional subsidy requirement for conventional services. This surplus could be in the form of an improvement in the annual subsidy/premium balance for Britain's railways, or the receipt of an up-front capital sum. A decision has not yet been taken on how these monies will be recovered by the Government as this will depend on future decision on the operating and commercial model for HS2. To recover some or all of this surplus via the Infrastructure Manager, the Government intends for HS2 Ltd to levy an Investment Recovery Charge on all operators using HS2 infrastructure.***<sup>21</sup>

46. The FBC Economic Case says the following:

***The economic assessment includes the expected costs to the Government of the programme which are presented in Net Present Value (NPV) terms. This includes the capital costs of constructing the railway, and the operating costs of running it. The revenue arising from additional rail passengers is deducted from those costs to calculate the net impact to the public sector.***

***This assessment relies upon the operating surplus from HS2 services reverting to Government, to offset in part the initial construction costs. To ensure that this is possible under a range of different commercial models for HS2, the Government intends that the HS2 Infrastructure Manager will levy an Investment Recovery Charge on all users of HS2 infrastructure. More detail on the Investment Recovery Charge is contained in the Financial Case.***<sup>22</sup>

Supporting analysis: sensitivity of the business case to different commercial models

47. HS2 is a very large, long-term project. For a project of this scale and duration to be approved, Ministers must be confident that the benefits of the project will be resilient to long term changes in Government policy and the wider commercial environment. This means that there must be maximum flexibility regarding the potential future operational and commercial models for HS2.

48. It will be some time before the Government decides on its preferred commercial model for HS2 and the Government might wish to change the commercial model at a future date. For example, the commercial model on the conventional network changed at

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<sup>21</sup> FBC paragraph 3.35

<sup>22</sup> FBC paragraphs 2.14 – 2.15

privatisation in the mid-1990s and significant further changes were put in place following the collapse of Railtrack and the creation of Network Rail as a public-sector body in 2004. A new commercial model for UK rail is now under active consideration in the current Rail Review.

49. This section sets out the HS2 commercial model assumption in the FBC and considers two alternative models. This analysis, which is purely illustrative and does not reflect any view within Government on the preferred commercial model for HS2, shows how different commercial models might impact on the FBC analysis in the event that an IRC were not permitted.
50. The analysis summarised below, and supported by more detail in Annex A, shows that for both the alternative commercial approaches considered, in the absence of an IRC the Government could not be confident of receiving in full the surplus revenues from HS2. Given the importance of the surplus revenues to the affordability and value for money assessments in the FBC, this would mean that the project would potentially no longer be considered affordable or value for money.
51. This section therefore shows that the consequence of not charging an IRC would be to restrict Government to a limited range of models in which it could rely on recovering surplus revenues via the operator in a franchise-type arrangement, precluding the introduction of alternative models on HS2.

*Model assumed in the FBC - all HS2 services run by a single franchised TOC*

52. The FBC modelling assumes that the Government will have a franchise-type agreement with a single TOC operating all HS2 services.
53. The assumption of a single TOC running all services, receiving all revenues and incurring all TOC-related costs, was used for the FBC analysis in order to simplify the modelling and does not reflect any decisions within Government regarding the future operating model on HS2.
- 54. In this model, as one operator with a franchise-type agreement with Government is operating all trains it would be possible for Government to secure all surplus revenues from the operator via premium payments, so the lack of an IRC should have no impact on the analysis in the FBC.***
55. In the event an IRC were charged in this scenario, it would result in a transfer of monies from operator to IM, which would reduce the premium payments under the franchise, with a commensurate increase in monies returned by the IM to Government. The result of charging an IRC is to change money flows within the model when compared to a scenario where no IRC is charged, but it does not change the value for money or affordability assessments as the total amount of surplus revenues returned to Government is unchanged.

Alternative model 1: on-track competition

56. Under current legislation it would not be possible for Government to give a single TOC exclusive access to HS2 infrastructure, as assumed in the FBC modelling, and other TOCs would be entitled to apply for access rights. This alternative model considers the impact of one or more non-franchised operators operating HS2 services that are assumed in the FBC to be operated by the franchised TOC.
57. The position on the conventional rail network under the current regulatory regime is that most services are franchised, but legislation provides for open access operators to bid to run services and currently open access services account for around 2% of total UK rail revenues.<sup>23</sup> It is possible that a future Government might decide to more actively encourage open access services on the HS2 network, perhaps out of a desire to impose some competitive pressure on the franchised HS2 services. This could result in a scenario where HS2 has a mixture of franchised and non-franchised services.
58. All operators would have to have a track access agreement with the HS2 IM, which would include obligations to pay track access charges. If the HS2 IM were able to charge an IRC then all operators, both franchised and non-franchised, could be charged an IRC on a consistent basis. This could be sized so that it captured the operating surplus generated by HS2 services across all operators and this IRC income could be returned to Government, hence preserving the position assumed in the business case.
59. If the IM were unable to charge an IRC, then the Government could secure the surplus revenues from franchised services through a premium payment by the operator. However, non-franchised operators would be under no obligation to make premium payments to Government. Therefore, Government would have no means of securing the share of surplus revenues from services run by non-franchised operators.
60. As set out above, the assumption that surplus revenues revert to Government underpins both the affordability and value for money assessments in the FBC. For this paper analysis has been undertaken looking at how these assessments are affected as increasing proportions of surplus revenues do not revert to Government. It has looked at the impact of up to 3 tph on HS2 being operated by non-franchised operators.
61. The specific impacts will depend on which services are considered, as costs and revenues differ across each service. However, for each service operated by a non-franchised TOC, the TOC receives the revenues from that service and has to meet the costs of running that service, in particular the operating cost of the train and track access charges levied by the HS2 IM (which in the FBC modelling are assumed to include an element relating to infrastructure renewals). For all services on HS2 revenues are significantly higher than operating costs, and for services operated by non-franchised TOCs, this surplus would be retained by the operator and would not be returned to Government as assumed in the FBC.

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<sup>23</sup> ORR publication “UK rail industry financial information 2017-18” page 4 Figure 1 Note 2  
[https://orr.gov.uk/data/assets/pdf\\_file/0013/40351/uk-rail-industry-financial-information-2017-18.pdf](https://orr.gov.uk/data/assets/pdf_file/0013/40351/uk-rail-industry-financial-information-2017-18.pdf)

62. Looking first at the affordability assessment. As set out above, the FBC analysis finds that the introduction of the full HS2 network would generate a net operating surplus of £670m per annum across for UK rail as a whole. This would reduce the overall public funding requirement for UK railways, so long as the surplus revenues from HS2 are available to Government to meet the additional funding requirements on the conventional rail network.
63. In this alternative model, the Government would not receive the surplus revenues from some services. Annex A sets out analysis on how this would impact on the affordability and value for money assessments. In summary, where specific services are assumed to be run by non-franchised operators, the revenues assumed in the FBC from those services are removed from the modelling, together with the operating costs (including some renewals costs) associated with those services.
64. For the affordability assessment, as the lost revenues are greater than the reduction on costs, the result is that the financial position for Government worsens. The analysis in Annex A shows that if just 1 hourly service assumed in the FBC to be run by the franchised TOC is instead operated by a non-franchised operator then the net surplus for Government is reduced by between 19 per cent and 57 per cent (depending on the service modelled<sup>24</sup>), and if 3 trains per hour are run by non-franchised operators then the loss of the surplus revenues would result in the Government facing a net deficit position. In other words that the surplus revenues from HS2 would not be sufficient to meet the additional funding requirement for the conventional network.
65. There is also an impact on the value for money assessment due to the reduction in the surplus revenues received by Government. As set out above, the FBC analysis finds that the BCR for the full network is 1.2 (or 1.5 with WEIs). Annex A summarises the impact of removing both the revenues and operating costs of 3tph from the FBC BCR calculation. The analysis shows that the removal of 3 trains decreases the BCR from 1.20 to 1.0 (0.99 to two decimal points) without WEIs, therefore reducing the VFM from low to poor (1.5 to 1.3 with WEIs).
- 66. In summary, if a proportion of services on HS2 were run by non-franchised operators and an IRC could not be charged, then the loss of income to Government would be sufficient to have a very substantial negative impact on the affordability assessment in the FBC and also a negative impact on the value for money assessment.**

Alternative model 2: sale of rights to operate services

67. Section 3 of this paper discusses the importance of retaining the option to sell the HS2 IM as a concession. Another model that Government might wish to consider would be to sell off the rights to operate services on HS2. In this scenario, Government might wish to continue having a single TOC operating all HS2 services (as in the model assumed in the FBC) but might want to move from a franchise-type arrangement to an operating

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<sup>24</sup> In the analysis in Annex A, the 3 services modelled are 1 train per hour between Euston and Birmingham, Liverpool and Glasgow / Edinburgh.

concession model, for example with the objective of reducing Government's role in the day-to-day running of train services.

68. Under an operating concession model, the holder of the TOC concession would make a one-off payment to Government at the start of the concession period, in return for which the concession holder would be entitled to retain any surplus revenues arising from the operation of HS2 services.
69. Where an IRC was charged, most or all of the surplus revenues could be secured for the Government through the IM, rather than the operator. The Government would need to ensure that there was sufficient income available to the operator to attract potential investors, but in general the Government could rely on the IRC to recover its share of surplus revenues, and hence could decide on whether or not to pursue this model without needing to consider whether doing so would have an impact on the value for money or affordability assessments in the business case.
70. However, without an IRC the Government would be relying on payments from the operator to secure the surplus revenues. By selling an operating concession the Government would be selling the rights to those surplus revenues, so in order for Government to be able to implement this model without an adverse impact on affordability and value for money the monies received via the sale of an operating concession would need to be equivalent to the surplus revenues assumed in the FBC, which are based on regular premium payments under a franchise-type agreement.
71. Annex A sets out the analysis that has been undertaken on the sum Government might expect to receive for an operating concession compared to the monies it would expect to receive in regular franchise-type premium payments.
72. This analysis considers a potential 10-year operating concession from the beginning of full operation of the railway (phases 1 and 2). For the purposes of this discussion it is assumed that the price a bidder would pay for an operating concession is equivalent to their valuation of the TOC's surplus revenue income stream for the duration of the concession. This can be calculated as a discounted cashflow.
73. The discount rate used would need to reflect the bidder's cost of raising capital and include compensation for any risk being taken on, which in this case would include revenue risk. The analysis in Annex A considers a range of possible discount rates, derived from recent regulatory decisions in other regulated industries. This gives indicative values for a concession sale in the range £22.8bn - £29.1bn, and it is thought likely that the level of revenue risk involved in a 10-year operating concession means that the likely value would be at the lower end of this range.
74. This compares with the value to Government of the stream of premium payments under a franchise-type agreement. This is estimated to be £27.9bn, calculated as a Net Present Value (NPV) using the Green Book social discount rate of 3.5%.



75. Hence this analysis suggests that in the absence of an IRC Government might incur a financial penalty of up to £5.1bn over 10 years if it pursued this model rather than a franchise-type arrangement.
76. This analysis sits outside the FBC modelling, so it cannot be directly translated into an impact on the affordability and value for money analysis. However the potential scale of this financial penalty is clearly material relative to the figures in the BCR and affordability assessments outlined above.
- 77. Hence in the scenario where an IRC could not be charged, the Government would be likely to receive a sum for an operating concession that is significantly lower than the value of premium payments if Government maintained a franchise-type arrangement. This difference would be sufficient to have a materially adverse impact on the Government's affordability and value for money analysis and would be a strong disincentive to proceed with an operating concession model.**

Supporting analysis: is an IRC that aims to capture all surplus revenues viable?

78. It is important to note that no decision has yet been taken on the approach that will be taken to setting an IRC on HS2, as this will depend on later decisions around the HS2 commercial model.
79. For this paper analysis has been undertaken to establish that it would be viable to use an IRC to secure all surplus revenues from HS2. By viable, we mean that it would be possible to set an IRC that captured the full amount of surplus revenue on HS2, while not resulting in the total amount being charged under an IRC exceeding the "historic costs" the IRC relates to, which in this case are the full construction costs for HS2.<sup>25</sup>
80. The analysis summarised here is set out in more detail in Annex B. This analysis considers how an IRC could be set that captures the full amount of surplus revenue on HS2. It calculates a flat rate IRC per train minute (in real terms) across the full appraisal period that approximately equals the forecast surplus revenue but does not exceed surplus revenues in any year. An IRC derived in this way would be £225/train minute and would yield around £3.5bn per year for the Full Y. (This compares to the HS1 IRC which is currently £94/minute.<sup>26</sup>)
81. The analysis in Annex B then calculates the level of IRC that would be required in order to recover the full construction costs of HS2 over appraisal periods of either 60, 90 or 100 years. The value of the IRC in these cases is significantly higher than the IRC that would need to be charged in order to capture the full surplus revenues.

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<sup>25</sup> In its May 2016 decision on the Charging framework for the Heathrow Spur ORR concluded (paragraph 26) that the "long-term costs of the project" imposes a maximum level at which any IRC may be set [https://orr.gov.uk/data/assets/pdf\\_file/0018/22086/charging-framework-for-the-heathrow-spur-decision-may-2016.pdf](https://orr.gov.uk/data/assets/pdf_file/0018/22086/charging-framework-for-the-heathrow-spur-decision-may-2016.pdf)

<sup>26</sup> 2020 HS1 Network Statement p51 <https://highspeed1.co.uk/media/gh3nxoyw/hs1-network-statement-2020-final.pdf>

**82. This analysis shows that an IRC charged at a rate that would capture all surplus revenues would not result in full recovery of all HS2 construction costs over either a 60, 90 or 100-year appraisal period. Therefore it would be possible, should it be decided to do so, to set an IRC that aims to capture all surplus revenues, while complying with the requirement that the total amount recovered via an IRC does not exceed the “historic costs” the IRC relates to.**

#### Conclusion to Section 2

83. This section provides evidence that the project could not be undertaken without the prospect of charges based on the long-term recovery of costs. In particular it supports points (iii), (iv), (vi), (vii) and (viii) in paragraph 13.

### Section 3: an IRC preserves the option of a credible concession sale

84. As set out above, HS2 is expected to generate revenues that significantly exceed operating costs and it is integral to the business case that this surplus revenue is received by the Government to offset the capital costs of construction. In principle this could be achieved through payments from operators (e.g. under a franchise-type agreement), through payments from the IM, where it has surplus income (in particular from charging an IRC), or through some combination of the two.
85. When HS2 begins operation, the IM will be publicly owned and hence able to make regular payments to Government as its shareholder. The Government would then have the opportunity to strike the optimum balance between retaining ownership of the IM and receiving a long-term stream of payments or realising a significant up-front payment through a concession sale.
86. A decision on whether to pursue a concession sale will not need to be taken for some time. However, at a future date the Government may wish to sell HS2, either as a whole or as a concession, and this would be in line with the Government's policy on the selling of public assets:

*"The government's policy is to sell assets where it is value for money to do so and where there is no policy reason to continue to own them. Selling assets gives headroom for the government to invest in other policies with greater economic or social returns and reduces fiscal pressures."<sup>27</sup>*

87. The prospect of selling HS2, once built, as a concession has been an important part of DFT thinking from the early days of the project. For example, Philip Hammond, when DFT Secretary of State, said to the Commons Transport Committee in September 2011:

*"The working assumption is that this will largely be financed by public capital and that we will explore the options for the sale of a concession once the railway is complete and operating, in other words, mirroring the approach that was taken on HS1."<sup>28</sup>*

88. When the 2013 Financial Case discussed the different financing options that had been considered for HS2 this discussion included:

*"...the specific option of seeking to monetise the up-front investment by way of one or more operating concessions following completion of HS2 and the start of passenger operations, as was the case with HS1. This would not help with the up front capital requirement from the taxpayer, but would mean a capital lump sum,*

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<sup>27</sup> Whole of Government Accounts 2017/18 paragraph 1.36

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/720160/WGA\\_2016-17-print.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/720160/WGA_2016-17-print.pdf)

<sup>28</sup> Hansard 13 September 2011 – response to Q546

<https://publications.parliament.uk/pa/cm201012/cmselect/cmtran/1185/11091301.htm>

*potentially a significant one, flowing back to the taxpayer to offset part of the initial construction costs.”<sup>29</sup>*

89. Therefore DFT has been clear from early in the programme that it must have the ability to sell HS2 as a concession. In recognition of this DFT has placed an obligation on HS2 Ltd to ensure that flexibility is maintained for future private sector finance and investment in HS2 infrastructure. The sponsor requirements placed on HS2 Ltd in its “Development Agreement” with DFT include:

*“HS2 Ltd shall, in its management, development and delivery of the Core Programme, at all times act in such a manner that would facilitate, and not hinder, obstruct or frustrate any future decision of the SoS to transfer all or part of the membership of HS2 Ltd or procure the sale of the whole or part of the HS2 Ltd business or outsourcing or granting of a concession of the whole or part of the Railway or the Operations to a third party.”<sup>30</sup>*

90. The concession sale value of HS2 will need to be significant for this to be a credible option for Government. This will require there to be a reliable income stream for investors for the duration of the concession. This income can only be generated if the IM is able to levy access charges in excess of costs. The IRC is the means by which the IM can levy access charges in excess of costs and therefore it is essential in order for a future concession sale to be a credible option.

91. The possible value of a concession to Government, and hence the necessity to keep this open as an option, is addressed in the FBC Financial Case. This also sets out the vital importance of an IRC if Government intends to retain a credible option to sell HS2 as a concession:

***Analysis suggests that HS2 services are likely to generate an operating surplus in each reference case and an improvement on the 2017 business case. However, the scale of the surplus is still uncertain. The Government intends to maintain flexibility on how best to realise this value for the taxpayer, as recompense for the funds invested in HS2’s construction. The completion of HS1 (the Channel Tunnel Rail Link) in 2008 was followed three years later by letting a 30-year infrastructure concession. While the Government has not decided at this stage whether to pursue a similar model for HS2, retaining the ability to sell HS2 as an infrastructure concession is an essential requirement for the programme, and HS2 Ltd is instructed in its Development Agreement to ensure that this option remains available.***

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<sup>29</sup> 2013 Financial Case paragraph 93

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/286797/financial-case-hs2.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/286797/financial-case-hs2.pdf)

<sup>30</sup> Development Agreement between DFT Secretary of State and HS2 Ltd (8 December 2014 and amended on 17 July 2017 and on 26 November 2018) paragraph 30.1

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/769850/hs2-development-agreement.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769850/hs2-development-agreement.pdf)

***The Government intends that HS2 Ltd as Infrastructure Manager will levy an Investment Recovery Charge on all users of HS2 infrastructure. The Investment Recovery Charge is essential to preserve the option of a future concession sale of HS2, as it provides an income to the Infrastructure Manager that is over and above the direct costs it incurs. Without such an income stream the concession sale value of HS2 will be insufficient for this to be a credible option. With an Investment Recovery Charge in place on HS2, the Government will have a choice between the early sale of a concession to raise significant funds upfront, or to retain ownership of HS2 and take the surplus revenues as an ongoing income stream. Without an Investment Recovery Charge this choice will not be available.<sup>31</sup>***

Supporting analysis: an IRC is needed for a concession sale to be a credible option

92. Analysis has been undertaken to demonstrate that an IRC is needed for a concession sale to be a credible option. The analysis looks at two cases:

- A. An IRC is charged on HS2, and the IM’s profit is assumed to be equal to its IRC income. Two options have been examined, based on the indicative IRC values derived in Annex B:
  - i. IRC option 1 – IRC set at the max level of £225/train minute, i.e. to approximately recover the full surplus.
  - ii. IRC option 2 - IRC set at £94/train minute, i.e. equivalent to the current HS1 charge.
- B. No IRC is charged on HS2, and the IM’s profit is assumed to be derived from a “mark-up” equivalent to a 6% profit margin over opex.<sup>32</sup>

93. This analysis calculates an indicative value of a 30-year concession based on the NPV of the IM’s profits, as set out in Table 2 below. This calculates that the value of a concession sale without an IRC is a small fraction of the value with an IRC, and the amount that could be raised in a concession sale without an IRC is considered much too small relative to the cost of construction for this to be a credible option for Government.

Scenario	NPV of IM profit
A (i) IRC = £225/minute	£62.7bn
A (ii) IRC = £94/minute	£26.25bn
B. IRC = 0	£2.06bn

*Table 2: indicative values of a 30-year concession with and without an IRC*

<sup>31</sup> FBC paragraphs 3.39 – 3.40

<sup>32</sup> Schedule 3, paragraph 2.1 of the 2016 Regulations provides that the IM may levy mark-ups subject to certain requirements being met. This analysis assumes that a reasonable profit margin of 6% is deemed to fall within the scope of this provision.

The HS1 Precedent

94. In considering the shape of a possible future HS2 concession it is helpful to consider the precedent provided by HS1. A 30-year concession for HS1 was sold in 2010, 3 years after the line opened. HS1 Ltd holds the concession from government to operate, manage and maintain the high-speed railway infrastructure and in return will receive revenue in the form of station and track access charges from train companies using the line, together with revenues associated with the stations (e.g. car parking and retail).
95. The HS1 IM is permitted to charge operators an IRC and in practice the value of the HS1 concession derives primarily from the income from the IRC. This can be seen in financial information from the company, for example the figures HS1 Ltd presented to investors in 2018, as shown in Figure 1.

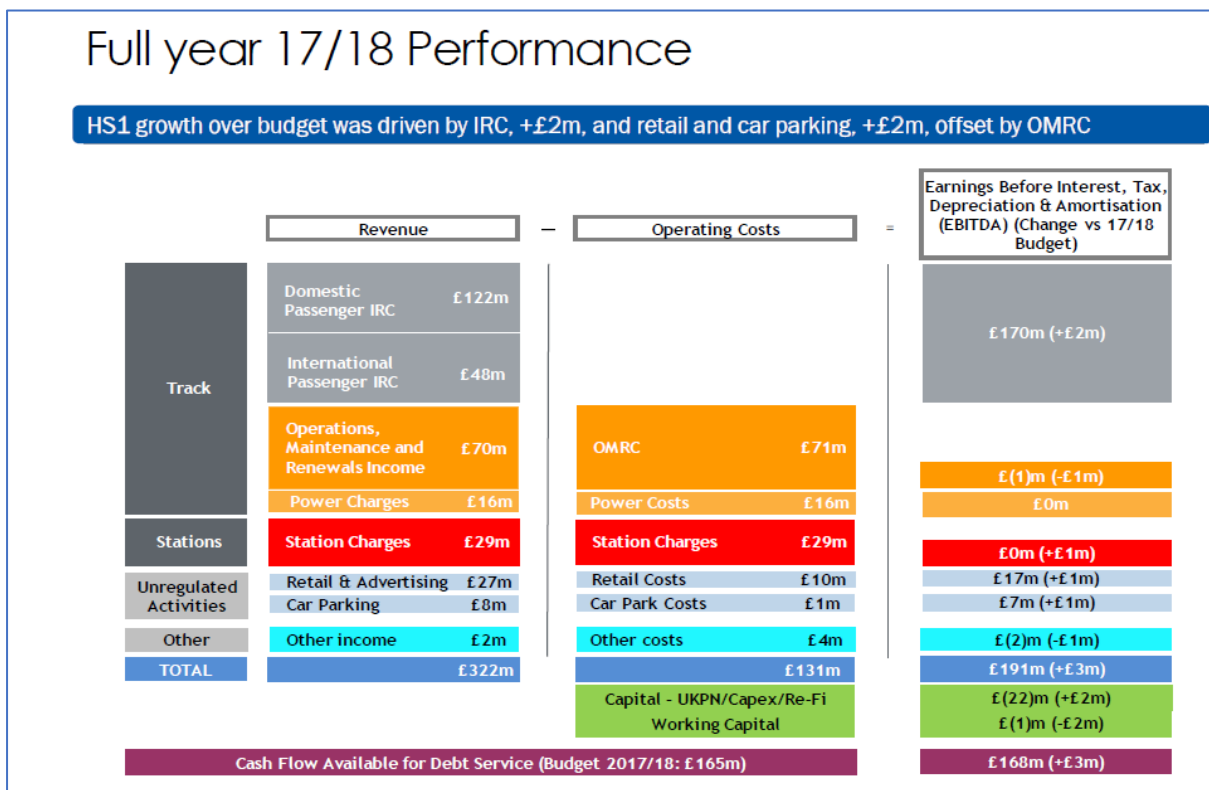


Figure 1: extract from HS1 Ltd investor presentation July 2018<sup>33</sup>

96. This shows that in financial year 2017/18 HS1 Ltd received IRC income of £170m, more than half its total income. The other permitted charges (OMR, power and station access) are only sufficient to cover costs, while the IRC income is broadly equivalent to the “cash flow available for debt service”.
97. This demonstrates that in this case the value of the concession to investors is in the secure income stream, over and above opex, that the IRC provides.

<sup>33</sup> HS1 Ltd investor presentation 24 July 2018, slide 26  
<https://highspeed1.co.uk/media/282575/24-july-2018-investor-presentation.pdf>

Conclusion to Section 3

98. This section provides evidence that the project could not be undertaken without the prospect of charges based on the long-term recovery of costs. In particular it supports points (iv) and (v) in paragraph 13.

## Annexes and supplementary information

### Annex A: the impact of different commercial models on the FBC analysis

#### Alternative model 1: on-track competition

1. As outlined above, under current legislation it would not be possible for Government to give a single TOC exclusive access to HS2 infrastructure, as assumed in the FBC modelling, and other TOCs would be entitled to apply for access rights. An alternative commercial model might be one in which the Government looks to enable and perhaps encourage a proportion of open access services on HS2.
2. Each service on HS2 generates significant surplus revenues, i.e. income over and above the costs incurred in operating the service. The FBC assumes that these surplus revenues are received by Government. However if these surplus revenues are received by a non-franchised operator and there is no IRC in place then there is no means for these surplus revenues to be returned to Government.
3. The analysis in this section considers a scenario where HS2 has a mixture of franchised and non-franchised services. The loss of surplus revenues would impact on the affordability assessment in the FBC, which considers the overall financial impact of HS2 across GB rail. The FBC estimates an operating surplus across UK railways as a whole of £670m once the full HS2 network is operational.
4. This has been analysed through looking at a scenario where a selection of different train services which are assumed in the FBC to be operated by the HS2 TOC, are instead run by non-franchised operators. The services that have been analysed are:
  - (i) 1 tph London Euston – Liverpool Lime Street
  - (ii) 1 tph London Euston to Glasgow / Edinburgh
  - (iii) 1 tph London Euston – Birmingham Curzon Street
5. The loss of the surplus revenues from each service modelled in this scenario reduces the overall operating surplus as set out in the table below. This is driven by a decrease in HS2 revenues that is partly offset by reductions in opex. The table also includes a scenario in which all three services are assumed to be run by non-franchised operators.

Train service	Reduction in overall rail surplus compared to FBC (NPV)
1 tph London Euston – Birmingham Curzon Street	£132m
1 tph London Euston – Liverpool Lime Street	£223m
1 tph London Euston to Glasgow / Edinburgh	£395m
All 3 services	£751m

*Table 3: reduction in overall surplus on UK rail in scenarios where some HS2 services are operated by non-franchised operators (60-year appraisal period)*



6. This shows that if the three services considered here were all operated by non-franchised operators then the result would be that the operating surplus on UK rail from a taxpayer perspective would move to a deficit, meaning that the project would no longer be considered affordable as it would be loss-making. The impact on the affordability assessment on a year by year basis is illustrated in Figure 2 below.

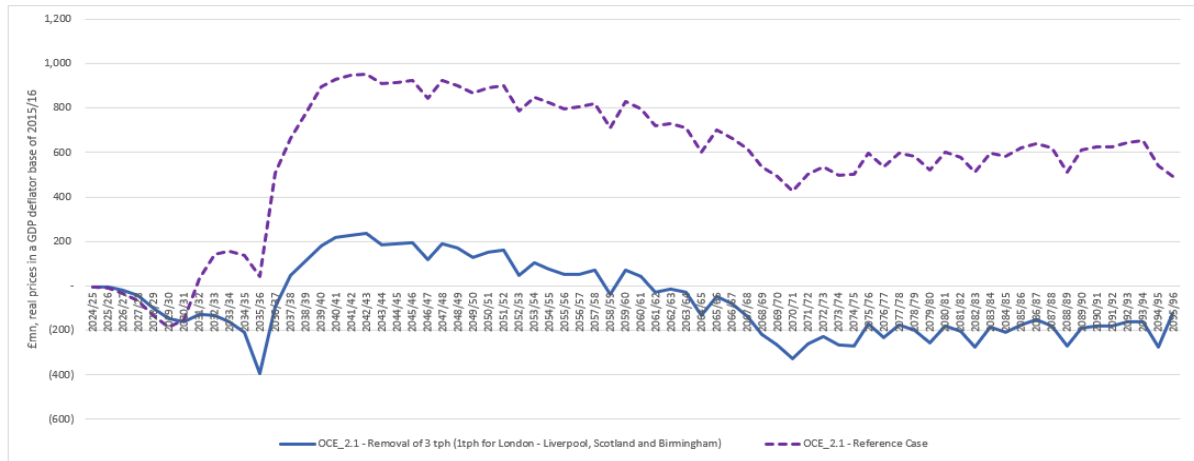


Figure 2: change in year-on-year financial position on UK rail in scenarios where some HS2 services are operated by non-franchised operators relative to the FBC reference case

7. The loss of these surplus revenues would also have an impact on the value for money assessment. When compared to the FBC modelling, the benefits are unchanged – the overall train service is unaltered so the passenger benefits, e.g. in relation to journey times and crowding reductions, are still realised in full. However, the removal of both the revenues and operating costs of these services changes the cost side of the BCR calculation. As well as reductions in the operating costs relating to the non-franchised services the modelling also identifies reductions in renewals costs, both for rolling stock (as the non-franchised operators would be responsible for the costs of the rolling stock used for their services) and infrastructure (as the FBC modelling assumes that track access charges include an element relating to future renewals costs).
8. Table 4 below sets out how the BCR assessment in the FBC is changed in the scenario in which the 3tph considered here are operated by non-franchised operators. In summary, removing the revenues and costs (including relevant renewals) from these services is estimated to reduce the BCR from 1.5 to 1.3, or without WEIs from 1.2 to 1.0 (0.99 to two decimal points), and reduce the VFM category from low to poor.

	PV, Q1 2015 prices, £bn	FBC	Alternative scenario
1	Net transport benefits	74.2	74.2
2	WEIs	20.5	20.5
3	Net benefits including WEIs	94.7	94.7
4	Capital costs	78.2	78.2
5	Renewals	5.4	4.7
6	Operating costs	25.2	19.2
7	Total costs = (4) + (5) + (6)	108.9	102.0
8	Revenues	45.4	27.1
9	Net costs to Government = (7) - (8)	63.5	75.0
	BCR without WEIs= (1) / (9)	1.2	1.0
	BCR with WEIs = (3) / (9)	1.5	1.3

*Table 4: change to FBC BCR calculation in scenario where some HS2 services are operated by non-franchised operators\_(60-year appraisal period)*

Alternative model 2: sale of rights to operate services

9. Under an operating concession model, the holder of the TOC concession would make a one-off payment to Government at the start of the concession period, in return for which the concession holder would be entitled to retain the surplus revenues arising from the operation of HS2 services.
10. The analysis for this model considers a potential 10-year operating concession from the beginning of full operation of the railway (phases 1 and 2). The value of the undiscounted surplus revenues from 10 years of operation of estimated to be around £34.1bn.
11. For the purposes of this discussion it is assumed that the price a bidder would pay for an operating concession is equivalent to their assessment of the value of the TOC's surplus revenue income stream for the duration of the concession. This can be calculated as a discounted cashflow.
12. The discount rate used would need to reflect the bidder's cost of raising capital and include compensation for any risk being taken on, which in this case would include revenue risk. A company's weighted average cost of capital (WACC) is considered a reasonable proxy for the discount rate it would apply in order to value a prospective future income stream.
13. An indication as to the WACC, and hence discount rate, that might be applicable in this case can be gleaned from looking at data for the WACCs of businesses operating in other regulated, privatised industries. A June 2018 information paper from the UK

Regulators’ Network (UKRN)<sup>34</sup> identifies a range of “real” WACC values for regulated utilities based on decisions between 2015 and 2018, in the range 2.73% – 6.29%.

14. By using these WACC values as proxy discount rates, they can be used to derive an indicative value for the amount a bidder might be willing to pay for the concession. This indicates that the price Government might receive for such a concession would be in the range £22.8bn to £29.1bn. This analysis assumes that the WACCs remain constant over the 10-year period.
15. By way of comparison, under the franchise-type arrangement of Model 1 the franchised TOC would make a stream of premium payments to Government over the duration of the franchise. This paper assumes that that the franchised TOC would make a single annual premium payment equivalent to the surplus revenues in that year. This can be converted to an NPV to Government by applying the Green Book social discount rate of 3.5%<sup>35</sup>, which is £27.9bn.
16. The chart below summarises this analysis. It shows the indicative values for the amount a bidder might be willing to pay for the concession using the range of WACCs from the UKRN paper as proxy discount rates, together with the NPV calculated using the Government discount rate.

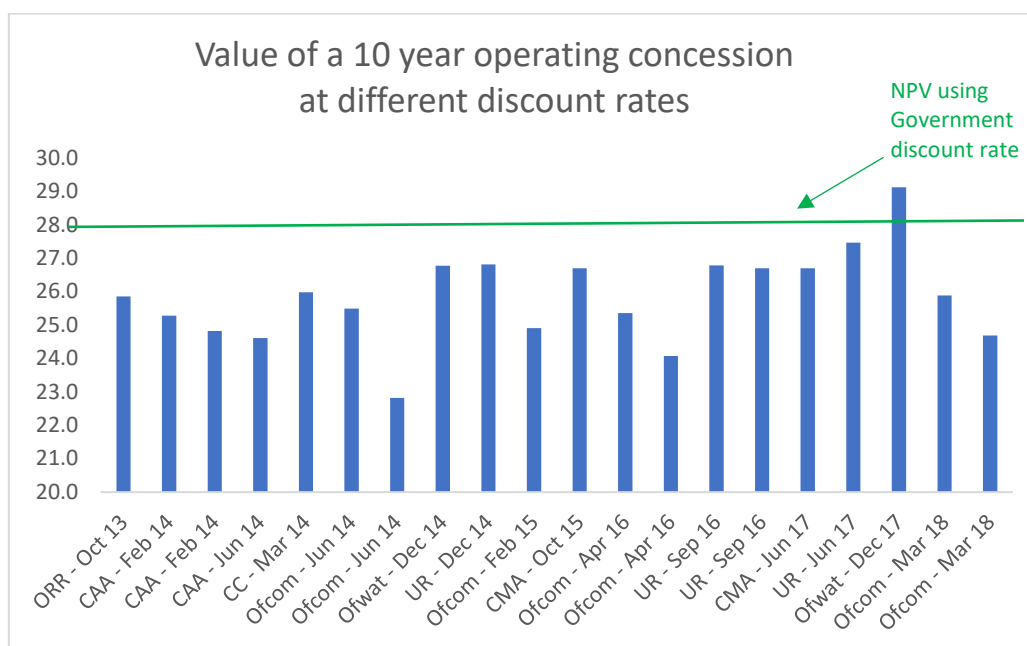


Figure 3: value of a 10-year operating concession at different discount rates

<sup>34</sup> UK Regulators’ Network Cost of Capital – Annual Update Report June 2018, page 12

<https://www.ukrn.org.uk/wp-content/uploads/2018/11/2018-UKRN-Annual-WACC-Summary-Update-v2.pdf>

<sup>35</sup> HM Treasury Green Book paragraph 2.18 and Annex 6

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/685903/The\\_Green\\_Book.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/685903/The_Green_Book.pdf)

17. This shows in 19 of the 20 cases examined, the indicative concession value is lower, sometimes significantly so, than the Government's NPV. The lowest WACCs in the UKRN analysis, including the one example where the WACC is lower than the Government discount rate, were for the water and sewerage sector. The level of revenue risk for a rail operator is likely to be significantly higher than for many privatised utilities, because of the greater uncertainty associated with the rail industry. Therefore the discount rate for a potential bidder for an operating concession is considered likely to be towards the top of the range identified.
  
18. In summary, it is highly likely that the amount the Government would receive for an operating concession would be lower than the value of the premium payments Government would receive under a franchise-type agreement. In the absence of IRC, where Government was relying upon payments from the operator to secure the surplus revenues assumed in the business case this would be a strong deterrent for Government when considering this as a potential operating model for HS2.

Annex B: analysis on the level of an IRC that would capture all surplus revenues

1. It is important to note that no decision has yet been taken on the approach that will be taken to setting an IRC on HS2, as this will depend on later decisions around the HS2 commercial model.
2. This annex sets out the analysis that has been undertaken to establish that it would be possible to set an IRC that captured the full amount of surplus revenue on HS2, while not resulting in the total amount being charged under an IRC exceeding the “historic costs” the IRC relates to, which in this case are the full construction costs for HS2.

A: Sizing an IRC so that it is intended to recover all HS2 surplus revenues

3. Based on the revenue forecasts used in the FBC modelling work, it is possible to determine the level of an IRC that could be charged at a flat rate (in real terms) per train minute across the full appraisal period, which approximately equals the forecast surplus revenue, but does not exceed surplus revenues in any year.
4. An IRC derived in this way would be £225/train minute, and would yield around £3.5bn per year for the Full Y. This is illustrated in Figure 3 below, which plots a flat-rate IRC against the surplus revenues from HS2 services (the “premium” line). (For comparison, the IRC currently charged on HS1 is currently £94/minute<sup>36</sup>.)

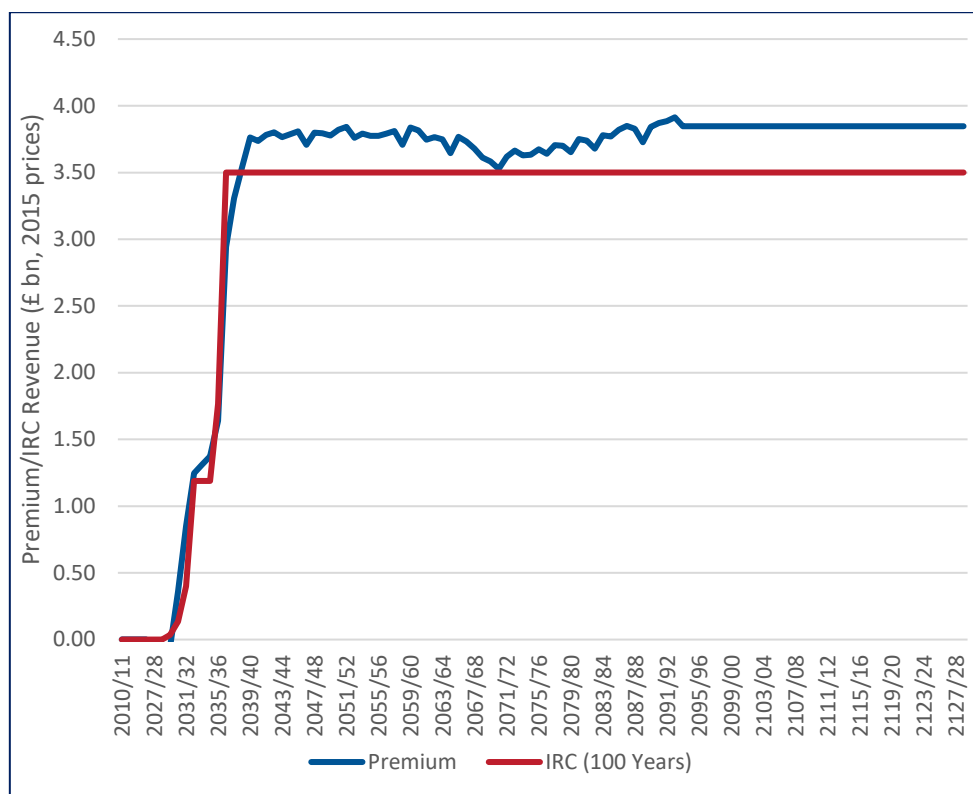


Figure 4 – illustration of an IRC sized to capture surplus revenues on HS2

<sup>36</sup> 2020 HS1 Network Statement p51

<https://highspeed1.co.uk/media/gh3nxoyw/hs1-network-statement-2020-final.pdf>

B: sizing an IRC so that is intended to recover the full construction costs for HS2

5. This analysis calculates the IRC needed to recover full construction costs, and compares it with the surplus revenues available on HS2.
6. Based on the construction costs estimate used for the August 2019 HS2 Chairman’s Stocktake, it is possible to determine the level of an IRC that would need to be charged in order to recover the full costs of construction over a given appraisal period. Three different possible appraisal periods have been considered – 60, 90 and 100 years. It is assumed that the cost estimate is subject to a cost of capital set at HM Treasury Green Book rates. This is illustrated in Figure 4 below.
7. This is plotted against the surplus revenues from HS2 services (the “premium” line), and shows that the IRC required to recover the full construction costs is lower than the surplus revenues available.

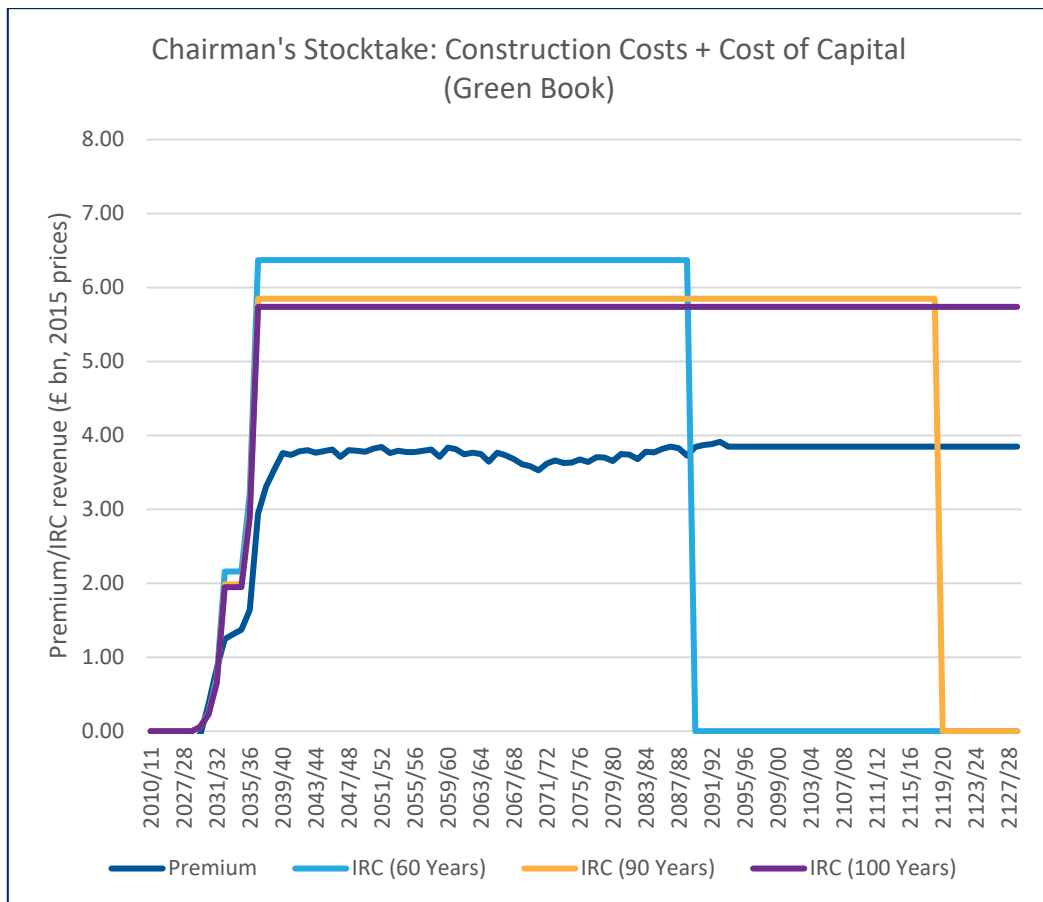


Figure 5 – IRC required to recover all construction costs

Is there is a constraint on the level of IRC Government might want the HS2 IM to charge?

8. This analysis assumes that the HS2 IM cannot charge an IRC that exceeds an operator’s ability to pay. Hence the IRC calculated in section A is the maximum IRC that HS2 could charge in practice.
9. The total amount charged via an IRC cannot exceed the “historic costs” the IRC relates to, which in this case are the full construction costs for HS2. Hence the IRC calculated in section B is the maximum that HS2 would be able to charge without breaching this requirement.
10. This analysis shows that the IRC under A is smaller than the IRC under B. This means that the requirement to limit the amount charged under an IRC to the relevant historic costs would not be a constraint on HS2’s ability to set an IRC that captures all surplus revenues. This is shown by combining the analysis in a single chart, as show in Figure 5 below.
11. It should be noted that sensitivity analysis suggests that if no, or a very low, cost of capital is used rather than Green Book rates, then an IRC designed to capture all surplus revenues could result in full cost recovery before the end of the appraisal period.

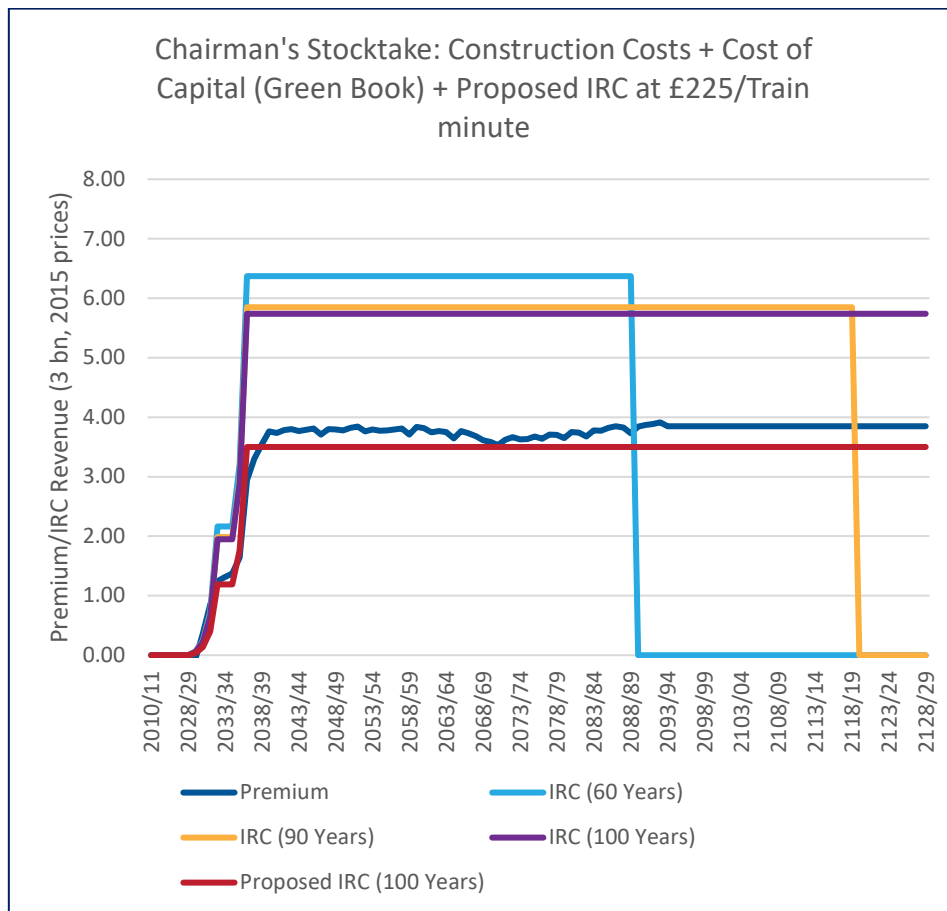


Figure 6 – consolidating the analysis in figures 3 and 4