



Department
for Transport

HS2: Outline Business Case

Section 4: Financial Case

EXECUTIVE SUMMARY

1. The Outline Business Case provides current cost estimates for Phase 1 construction, Phase 2 and rolling stock. At the 'P50'¹ confidence level, Phase 1 is estimated to cost £19.4bn, Phase 2 £19.0bn, and rolling stock £6.9bn. All prices are in Q2, 2011 prices, excluding VAT.
2. Spending Round 2013 (SR 2013) established a long-term funding envelope for HS2 of £42.6bn for construction costs and £7.5bn for rolling stock (all 2011 prices, excluding VAT). This included a high level of contingency of £14.4bn for construction costs and £1.7bn for rolling stock. SR 2013 provided a total budget of £980m for 2015/16 and a capital budget for HS2 from 2016-17 to 2020-21 of £15.2bn.
3. HS2 Ltd has been set a target price for delivery of Phase 1 of £17.16bn (2011 prices, excluding VAT), representing approximately a 10% contingency above base costs. This is a stretch target emphasising the importance of affordability.
4. SR 2013 provided comfort that HS2 can be delivered without detriment to ongoing investment by DfT in other transport priorities to 2020/21, and provided costs do not increase beyond those allocated during SR 2013.
5. As well as HS2, the department will continue taking forward significant levels of investment in a range of schemes, including classic rail, Crossrail, highways and local authority major schemes. Budgets beyond 2021 have not yet been set, and the first half of the 2020s is expected to see a significant increase in HS2 investment, as Phase 1, Phase 2 and rolling stock are taken forward in parallel. Work done for SR 2013 indicated that the estimated cost of the scheme would be between £6.5bn and £7.7bn each year in the four years to 2024-25 (including assumed VAT and inflation). The precise profile beyond 2021 will be a matter for future Spending Rounds by which time the programme for Phase One will be clearer following conclusion of the legislative process.
6. Affordability in the construction phase could be improved over time if HS2 can be delivered for lower than estimated cost; if contributions can be agreed from third parties; and/or if worthwhile financing arrangements could be put in place for part of the capital cost (though third party funding and financing would be unlikely to equate to more than a small percentage of overall scheme costs). Further work is planned in these areas.
7. This Financial Case also provides initial early stage analysis on future operations for both HS2 services and across wider GB rail. This analysis is indicative and assumption-based, and is subject to the uncertainties inherent in long-term forecasting.

¹ 'P50' is the funding level at which there is a 50% degree of confidence that the project can be delivered within its current scope at that cost. 'P95' funding gives a 95% degree of confidence.

8. The analysis concluded that after the introduction of HS2, the overall operating position to Government, in the reference case, would be an improvement in the annual subsidy/premium balance² for railways. This is a benefit for the taxpayer. The analysis suggests it would generate an additional premium to the taxpayer of around £300m a year in the medium term once it reaches steady state, based on the assumptions in the Economic Case, including demand being capped in 2036-37. The analysis suggests this would be comprised of an operating surplus for HS2 services of around £2.8bn and an additional subsidy requirement for classic services of around £2.5bn (due to abstraction by HS2), in the reference case. HS2 operations are expected to make a significant operating surplus on a standalone basis³.
9. The analysis suggests therefore that the advent of HS2 operations will deliver an increase in capacity of more than 80% on North-South intercity routes⁴ at no on-going cost to the taxpayer in the medium term.
10. Assumed future demand is the key variable in the analysis. If demand is assumed to continue growing beyond 2036-37, the financial case is enhanced. On average, for each year imposition of the demand cap is delayed, the operating surplus across GB rail would be enhanced by around £50m-£100m.
11. The modelling assumes significant renewals expenditure beyond 2060, when the uncertainties associated with any forecasts are increasingly large. However, based on the assumptions in the Economic case, the emerging analysis suggests that renewals costs would be met if demand continued to grow into the early 2040s.

² This is the balance between train operating companies needing subsidy support, and those generating premium payments which flow to the taxpayer.

³ It should be noted that the analysis assumes that up front capital costs associated with construction of the network and delivery of rolling stock are met by government. This is a modelling assumption; the specific approach taken will be dependent on future policy decisions. The analysis also assumes that future renewals are applied to a notional regulated asset base (RAB) and are financed through ToC operating charges.

⁴ This is defined as seat miles per year run by HS2, ICEC, ICWC, EMT and Cross Country.

INTRODUCTION

1. HS2 is one of the most significant investments in the GB railway network since the Victorian era, and one of the largest investment programmes ever undertaken in this country. It will deliver significant increases in capacity and connectivity, act as an engine for economic growth, and drive regeneration.
2. The overall purpose of the Financial Case is to assess the affordability of the project. Normally this would require a comparison of cost against available budget, together with an assessment of financial risks. However, given the unusually long term nature of HS2, and the fact that Treasury budgeting processes only allow budgets to be set to 2020-21, affordability can only be assessed in light of certain caveats.
3. The Case below provides evidence that the project has been robustly costed, that clear plans are in place to meet that cost, and that financial risks have been considered, whilst also examining the regularity and propriety of the proposed expenditure. The Case also includes initial analysis around the operating position of the railway once open, and the extent to which the addition of HS2 to the GB rail network is likely to either increase or diminish the requirement of the network (and therefore DfT) for ongoing taxpayer subsidy.
4. The Financial Case is at Outline Business Case (OBC) stage⁵, though covers Phase 1, Phase 2 and rolling stock, all of which are at different stages of development. The Case provides a snapshot of the programme at the current stage of development. The cost estimates for Phase 1 have benefitted from detailed work over the last 18 months, though will not be firm until after the passage of the hybrid Bill when the final scope of the scheme will be known. Phase 2 and rolling stock are at an earlier stage of development, more akin to Strategic Outline Business Case (SOBC) stage.
5. The Financial Case sets out:
 - The context for the Financial Case.
 - The estimated costs of the HS2 project, including allowances for risk.
 - Analysis of the expected financial outlook for GB rail once HS2 is operational.
 - The affordability of the investment plans.
 - The funding arrangements, and;
 - Accounting implications for DfT.

⁵ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85930/dft-transport-business-case.pdf

CONTEXT

6. Whilst the Strategic Case for HS2⁶ sets out the policy and strategic context for HS2, the Financial Case is concerned with long-term affordability. It is therefore concerned with a year-by-year view of likely costs, the extent to which there is agreed funding in place to meet those projected costs and the extent to which this is affordable. This contrasts with the Economic Case which examines the costs and benefits of HS2 in appraisal terms and converts these into net present values (NPVs) for the purposes of producing a benefit-cost ratio (BCR).

COSTS AND FUNDING

7. Following Spending Round 2013 (SR 2013), this section sets out the latest estimates on the construction and rolling stock costs associated with HS2. This draws on the latest costs estimate work for Phase 1 and Phase 2, and work by HS2 Ltd on rolling stock costs. All costs are consistent with those used for the Economic Case.
8. SR 2013 provided a Treasury agreed funding envelope for High Speed 2 of £42.6 billion (in 2011 prices, excluding VAT) for construction costs - £21.4bn for Phase 1, and £21.2bn for Phase 2. In addition, it set a funding envelope of £7.5bn (2011 prices, excluding VAT) for rolling stock⁷. Table 1 below shows how this funding envelope is divided by base estimate and contingency:

Table 1: HS2 Total Funding Envelope (££bn, 2011 prices, excluding VAT)

		Phase 2	Rolling Stock
Base estimate	15.65	12.5	5.6
DfT held contingency⁸	3.75	6.5	N/A
Total ('P50')	19.4	19.0	6.9 ⁹
Treasury held contingency	2.0	2.2	N/A
Total Funding ('P95')		21.2	7.5

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/260525/strategic-case.pdf

⁷ See *Investing in Britain's Future*, published June 2013 by HM Treasury. See paragraph 3.16: <https://www.gov.uk/government/publications/investing-in-britains-future>

⁸ HS2 Ltd has been set a target price for Phase 1 of £17.16bn. £1.51bn of the DfT held contingency of £3.75bn has therefore been delegated to HS2 Ltd.

⁹ Rolling stock contingency levels do not equate precisely to P50 and P95.

9. While setting an overall funding envelope for HS2 which includes a prudent level of contingency in the long-term, a target price has also been established for construction of Phase 1 of £17.16bn, representing a contingency provision of approximately 10% above base costs. This is a stretch target for HS2 Ltd which emphasises the importance of affordability.
10. SR 2013 also established a detailed, year by year funding allocation for HS2 until 2020/21: for 2015-16 - £980m (R-DEL and C-DEL) and for 2016-17 to 2020-21 £15.2bn (C-DEL only). These figures are nominal. This funding relates largely to Phase 1, but also includes around £1.4bn of early costs for Phase 2 (associated largely with preparation for a hybrid Bill and early property purchase), and around £350m for rolling stock, associated with design work.
11. This allocation to DfT over the SR 2013 period (2015/16 – 2020/21) is £16.2bn. As this is an allocation for budgeting purposes, it is expressed in nominal terms, and inclusive of VAT in the normal way (though it is possible VAT will be reclaimable by the future delivery vehicle for HS2). It also assumes capitalisation of most expenditure from 2nd reading of the hybrid Bill (so from 2014/15 onwards).

Table 2: SR 2013 HS2 Allocation to DfT (nominal prices, including VAT) (££m)

	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	Total
HS2 C-DEL	832	1,729	1,693	3,300	4,000	4,498	16,052
HS2 R-DEL	148	Not applicable					
HS2 Total	980	1,729	1,693	3,300	4,000	4,498	16,210

12. The allocation to DfT is based on a P50 estimate of costs in the period, including assumed inflation (using Treasury indices) and assumed unreclaimable VAT. In addition to the DfT held allocation (based on 'P50') Treasury has also made provision in the public finances for additional contingency for each year up to the P95 level. In order to incentivise cost control, access to funding above the P50 level (£19.4bn in 2011 prices excluding VAT) requires the approval of HM Treasury and would involve a payment by the Department for Transport.

Cost Discovery and Assurance Process

13. HS2 Ltd has appointed leading engineering organisations to prepare designs that meet the DfT's requirements for HS2 at a sufficient level of detail to support hybrid Bill submission. These consultancies are supported by embedded quantity surveying firms to prepare cost estimates using a range of conventional

techniques. The estimates are subject to a number of assurance processes covering peer and independent review, including:

- Challenge and scrutiny from HS2 Ltd's Development Partner, whose expert teams have worked on Crossrail, Thames Tideway and the 2012 Olympics, and from the internal HS2 Ltd commercial team.
- Peer review from industry experts in the DfT's Project Representative (P-Rep) team.
- Independent review by leading construction cost consultants.
- Audit of associated processes and procedures.

14. A risk register was developed for the Phase 1 scheme through a series of interviews and reviews, and informed by detailed risk registers emerging from the specialist professional service contractors (PSCs) used by HS2 Ltd. A cost Quantified Risk Assessment (QRA) model was created which used 'Monte Carlo' simulation techniques where the model makes a distinction between threats that may or may not occur and tolerance ranges associated with the status of the price estimation and design development. Both threats and tolerances represent uncertainty to the base cost estimate, but are best modelled separately within the model.

15. When estimating costs for Phase 2, HS2 Ltd has appointed leading engineering consultancies to prepare designs that meet the DfT's requirements for HS2 at a sufficient level of detail to support the Phase 2 consultation. A cost consultancy was appointed to provide cost and risk support to HS2 including the preparation of an estimate commensurate with the design at this stage using conventional estimating techniques. The estimate has been reviewed by the P-Rep and the overall conclusion was that the approach taken and the outputs are at an appropriate level of maturity for the stage of the design. Additionally, site specific risks associated with the project have been identified and assessed to inform an appropriate level of contingency along with the appropriate level of optimism bias in line with DfT guidance.

16. HS2 Ltd has taken forward detailed work to assess the latest view on the likely cost of HS2 rolling stock. This has involved: reassessing the fleet requirement (including removing 260m units as a service offering) given the latest view on service patterns; assessing recent market activity in order to benchmark costs; taking market soundings; making separate provision, (including a 100% risk allowance) for design costs; and considering procurement approaches. This approach has been assessed and validated within DfT.

17. This latest cost estimation work, which was concluded and validated after the conclusion of SR 2013, has led to a revised central estimate for rolling stock costs of £6.93bn (2011 prices). This figure has been used as the central assumption for the revised Economic Case which is at outline business case stage.

Approach to Contingency and Risk

18. P50¹⁰ risk contingency is assumed at 26% of all direct base costs for Phase 1, and 66% for Phase 2. Those percentages are therefore added to base costs to arrive at the P50 and P95 estimates. P95 risk contingency is assumed at 41% of all direct base costs for Phase 1, and 89% for Phase 2. The higher risk figures for Phase 2 include 32% optimism bias, reflecting the earlier stage of the project. A 10% uplift is applied to base indirect cost for both Phases and both P confidence levels. Risk percentages have been developed and estimated by HS2 Ltd.
19. Rolling stock costs in SR 2013 were based on those assumed in the previous iteration of the economic case (£7.5bn at 2011 prices). Since then, further work has been developed and assured on rolling stock costs and contingency, as described above. Previously 18% risk allowance was applied to captive high speed train sets (on top of base costs), and 40% to classic compatible, with design costs included in assumed costs. The revised approach separates out the design process, and applies a 100% risk allowance to it. The costs then assume 15% risk allowance on captive fleet and 20% on classic compatible (as risk is assumed to be largely mitigated by up front design work). Along with revised assumptions on train length (200m sets only), this brings down costs in the central case to £6.93bn, of which £5.58bn is base costs, and £1.35bn is risk allowance.
20. Of the previous figure of £7.5bn (used for SR 2013), £1.75bn was risk allowance. Therefore the majority of the reduction in costs is change in risk. While it is appropriate to use the revised figure of £6.9bn for the Economic Case central case, it is also appropriate to retain the higher figure as a long-term fiscal provision, providing a higher level of certainty.
21. Clearly costs will continue to evolve as the project develops. The phase 1 design will become more detailed as the project moves into the implementation phase after the parliamentary stages of the hybrid Bill, while Phase 2 and rolling stock are at an early stage of development. A decision on Phase 2 route and station options is expected by the end of 2014.
22. Phase 1 Baseline 3 (April 2013) provided a more comprehensive understanding of costs for Phase 1. This included making provision for some previously excluded cost items, including discretionary property spend and on-network works north of Handsacre junction. A clearer position on VAT has also been established with Treasury. Provision for unreclaimable VAT has been prudently included within the SR13 allocations to 2020-21, while the long-term funding envelope for HS2 has been established and articulated exclusive of VAT, recognising it represents an internal transfer within government rather than an additional cost¹¹. Going forward we intend to have further discussions with Treasury on the VAT status of HS2 Ltd.

¹⁰ P50' is the funding level at which there is a 50% degree of confidence that the project can be delivered within its current scope at that cost. 'P95' funding gives a 95% degree of confidence.

¹¹ As was made clear in the NAO's report '*HS2: A Review of Early Programme Preparation*', published in May 2013.

23. However, there remain a number of wider risks relating to the current cost estimates. Current cost estimates relate largely to the current scope of the scheme. Scope added, for example, during the passage of the hybrid Bill, could therefore reduce the amount of contingency available to manage risks associated with known scope. A cost and risk group comprising officials from DfT, HS2 Ltd, HMT and IUK is working together to ensure that the additional cost pressure brought about by scope change is minimised, while the target price mechanism emphasises the importance of affordability.
24. Potential future over-site development around stations is outside of the cost estimate, as the costs relate to the current design, although over time such additional spend could also bring returns to the taxpayer. Potential future connectivity (e.g. transport links adjacent to HS2) is also out of scope. Connectivity may be the subject of future contributions by local beneficiaries of HS2 (see Third Party Funding Contributions, page 17).
25. The current estimate for Phase 1 makes provision for relevant Network Rail costs, including for compensation for train operating companies (e.g. in regard to Euston), and the relocation of depots at Old Oak Common. However, at this early stage it is hard to estimate the precise quantum of these costs, and the level of provision will need to be reassessed in due course as the design of the project matures.
26. In regard to timing, the current estimate has made some provision for delays to HS2 but does not at this stage include an overarching cost for significant delays to the programme. Significant delays could therefore add further costs to the project.
27. SR 2013 used a standard Treasury inflation assumption (1.7% from 2015/16), but further work is required between now and the next Spending Round to develop a bespoke index for the project.
28. There are also potential upside risks. There may be further opportunities to lower the cost of rolling stock procurement through the removal of input contingency allowances, and refinements to the fleet size required. In addition, comparison with Intercity Express Programme (IEP) design and procurement costs suggests that the equivalent costs currently assumed by HS2 Ltd for classic-compatible fleet may be higher than expected.
29. The property cost estimates which were provided by HS2 Ltd for the Spending Round did not take into account potential rental income, though nor did they assume property management or maintenance costs. It would be reasonable to assume there would be some future income from property rentals, although it would be relatively small compared to overall project budgets.
30. The SR2013 outcome includes a risk share mechanism requirement for the department to bear some of the financial risk for cost increases for Phase 1 above £19.4bn. This requirement is likely to endure until completion of HS2. In order to incentivise cost control if costs increase above £19.4bn, this would trigger a payment for the department, though this would be capped, and could be spread over a number of years, taking into account the impact on other expenditure.

Managing Costs and Risk Going Forward

31. Our shared intention is to deliver the most cost effective design for the railway and ensure that the best value is achieved within the agreed target price for the current scope of Phase 1 of £17.16 billion.
32. The Department for Transport has been given delegated authority from the Treasury to manage costs within a £19.4bn (2011 prices) ceiling for Phase 1. This cost envelope has been derived from the P50 confidence level. In order to incentivise cost control, access to funding above the £19.4bn level requires the approval of Treasury and would involve a payment by the Department for Transport. This approvals framework for costs has been implemented to ensure there is a clear structure for managing costs following SR13.
33. These arrangements form part of a wider oversight regime for delivering HS2 and managing costs. This includes:
- A dedicated High Speed Rail Board which has representation from HMT and IUK which oversees the overall HS2 programme and reports progress to DfT's Board and to Ministers,
 - Clear roles and responsibilities between DfT and HS2 Ltd with delegated authority levels to enable efficient project development and delivery without the recourse to lengthy Governmental approvals;
 - Management reporting and controls to enable DfT as Sponsor to have visibility of programme costs and exposure against risk limits, and agreed trigger points where intervention or escalation is needed
 - Cross departmental oversight between DfT, HMT and IUK on the progress of Phase One against the cost programme and levels of risk exposure through a remitted "Cost and Risk Group".
 - The establishing of an Efficiency Challenge Programme to actively monitor and progress identified initiatives to reduce the delivery cost of the programme through efficient ways of working.
34. Following his recent appointment as the new chair of HS2 Ltd, Sir David Higgins has been tasked with reporting on how to reduce the £42.6 billion cost of the scheme. He will present his findings to the Transport Secretary in March 2014, before the second reading of the Hybrid Bill. The report will consider how, through better planning and early engagement with the industry, the benefits of HS2 can not only be delivered earlier but also at a lower cost.

AFFORDABILITY

35. This section of the Financial Case deals with the affordability of the HS2 proposals. SR 2013 provided a specific long-term funding envelope, including contingency, for HS2. This is £21.4bn for Phase 1, £21.2bn for Phase 2, and

£7.5bn for rolling stock. This outcome is the result of constructive dialogue between DfT and Treasury during the SR process, and reflects Treasury's commitment to the project.

36. Treasury has worked closely with DfT since the beginning of the HS2 project, and Treasury officials sit on the High Speed Rail Board and the new Cost and Risk Group. Treasury Ministers' agreement is also required for key decision points, such as consultation in July 2013 on Phase 2, and the deposit of the Phase 1 hybrid Bill.
37. The case for HS2 has been calculated on the basis of the project being fully publicly funded, and this Financial Case works on this assumption. However, the department is exploring the scope to draw in third party funding to lessen the exposure of the taxpayer, and is also considering the potential for private financing to play a role in helping reduce the up-front costs to the taxpayer¹².
38. SR 2013 set out plans to invest more than £70bn by 2020-21 in all forms of transport, including:
- *Action for Roads: a network for the 21st century* sets out plans for the biggest ever upgrade of motorways and major A roads. Government will invest £15.1 billion in strategic roads by 2021, including tripling funding for major highways schemes and £6 billion for highways maintenance, and a further £6 billion in maintenance for local roads;
 - SR 2013 confirmed more than £16 billion of capital investment in railways for the period 2014–19, including new trains for the East Coast and Great Western lines, faster services and more seats for commuters, and 850 miles of electrification; and;
 - In 2015/16 Government will contribute over £1 billion to support local transport projects through the Local Growth Fund along with a further £5 billion contribution to 2020/21. Government has made a six-year funding settlement for London, providing over £5.8 billion in capital grant and a further £3.8 billion of borrowing power between 2015/16 and 2020/21, which will enable Transport for London to continue investing in critical transport infrastructure, including Crossrail and the Tube Upgrade Programme.
39. SR 2013 demonstrates the intention of Government to continue investing to enhance and develop our other key transport networks, while also taking forward HS2.
40. HS2 should also be considered in the context of wider government investment across the economy. While setting 2015/16 capital budgets for all departments, SR 2013 also committed to more than £100bn of specific infrastructure projects

¹² This Financial Case draws a distinction between 'funding' which is not repayable by HMT/DfT to a third party, and 'financing' which would be repayable.

over the next parliament. In addition to the road and rail investment set out above, this included:

- Protecting science (£7bn): maintaining science investment in real terms to 2020/21;
- Schools (over £21bn): building up to 180 new free schools in 15/16, over 500,000 new school places over next parliament, and meeting the estimated costs of all essential maintenance;
- Housing (£3.3bn of specific commitments): building over 200,000 houses over the next four years; and more affordable homes in each year than at any point under the last government; and;
- Flood defences (£2.3bn): investment to improve defences in different parts of the country.

41. These investments indicate that work towards HS2 can be taken forward and delivered, while significant investment is also delivered in other key growth sectors in the period to 2020-21.

42. Table 2 sets out the DfT's capital budget allocation for HS2 of £4,498m in 2020-21. It should be noted that from 2021-22 to 2024-25, Phase 1 (to completion); Phase 2 (initial build); and rolling stock are expected to be pursued simultaneously. This would clearly create a significant capital requirement over that period. Work done for SR 2013 indicated that the estimated cost of the scheme would be between £6.5bn and £7.7bn each year in the four years to 2024-25 (including assumed VAT and inflation).¹³ The precise profile beyond 2021 will be a matter for future Spending Rounds by which time the programme for Phase One will be clearer following conclusion of the legislative process. After 2024-25, HS2 spend would reduce again as Phase 1 would be essentially complete. Were there to be affordability constraints other profiling options could be explored. This would need to take account of potential impacts on the programme for delivery.

43. We also intend to explore with Treasury the scope for budget flexibility for HS2, which can be an important factor in achieving efficiency of spend from major projects. Treasury have made clear that certain projects and policy areas will be given greater flexibility to move money between years than is currently permitted under the existing Budget Exchange rules. Flexibilities will be offered on a case by case basis, but Treasury have indicated that HS2 is likely to qualify once it enters construction.¹⁴

¹³ These numbers are derived from a 'P50' assessment in SR2013. Based on the approach in SR2013, we would also envisage Treasury holding further contingency up to 'P95' equivalent.

¹⁴ This was set out in *Investing in Britain's Future* in June 2013, see paragraph 1.10.

Summary of Affordability in Construction Phase

44. Treasury has set a cost envelope for HS2 of £42.6bn in 2011 prices (excluding VAT), and firm budgets (both capital and resource) have been set to 2015-16, along with capital budgets up to 2020-21. These costs do not take account of any impacts resulting from the operational stage of HS2 (e.g. Phase 1 after 2026); they relate only to design, construction and rolling stock. The profiles agreed in the Spending Round assume capitalisation of most expenditure from 2nd reading of the hybrid Bill (so from 2014/15 onwards).
45. Provided costs do not increase (above those established during SR13) and budgets are provided in future Spending Rounds to cover those costs, then HS2 should be considered affordable. There are though risks to note.
46. The costs relate largely to the current scheme scope, and do not include wider risks such as the risk of significant additional scope being added during the Bill phases, additional costs associated with over-site development or connectivity around stations, or of delays to the hybrid Bill timetable. Some of these potential costs could also bring potential additional economic benefits and future income (e.g. in the case of over-site development), and it is possible that additional costs might be offset against savings. In order to incentivise cost control, access to funding above £19.4bn (in 2011 prices excluding VAT) requires the approval of HM Treasury and would involve a payment by the Department for Transport.
47. As discussed above, SR 2013 used a standard Treasury inflation assumption (1.7% from 2015/16). Further work is required between now and the next Spending Round to develop a bespoke index for the project. An affordability risk would remain if existing budgets were not adjusted to reflect changes in the rate.
48. Although capital budgets have been provided up to 2020-21, we envisage a significant capital requirement from 2021 to 2025, reflecting parallel construction of both Phases 1 and 2, as well as procurement of train sets. As a result, decisions may need to be made on priorities. Clearly it will be for Treasury and wider government to consider these issues in the round.
49. Finally, depending on a range of factors going forward (e.g. procurement timetable), the profile of HS2 costs at SR 2013 may turn out not to reflect the most efficient profile of HS2 expenditure in terms of project delivery. Experience from previous major projects suggests that there may be significant changes in expenditure between years relative to plan (e.g. bringing forward work to exploit supply chain capacity or deferring work to mitigate impact of adverse weather), even whilst keeping within overall budget and programme. To minimise overall cost to the taxpayer and manage risk efficiently, it will therefore be important that options for creating flexibility in budgeting for HS2 Ltd are considered and discussed with Treasury, to seek to ensure the most efficient use of funds.

HS2 OPERATIONAL FINANCIAL OUTLOOK

50. In addition to estimating the *up front* costs of HS2, and providing assurance that they are affordable, the Financial Case also examined the financial outlook for GB rail¹⁵ once HS2 is *operational*. This is early stage, initial analysis, providing broad strategic reassurance. The choice of initial modelling assumptions used in the analysis does not imply that these are the Department's preferred options for the scheme. The analysis will be refined and developed as the project moves forward.
51. The analysis indicated that after the introduction of HS2, the overall operating position to Government, in the reference case, will be an improvement in the annual subsidy/premium balance for railways¹⁶. This is a benefit for the taxpayer.
52. Analysis has been undertaken on the operational financial outlook for HS2 services, and the impact on wider GB rail. It focused on the incremental impact¹⁷ of HS2, and is based on a set of input assumptions consistent with the Economic Case. This has provided early stage analysis on:
- Projected costs and revenues both in regard to HS2 services and services on the existing network;
 - The likely scale of the impact of HS2 on future ongoing taxpayer support for the rail network;
 - What the key risks and opportunities offered by HS2 are; and;
 - The potential scope to improve the financial case.
53. The analysis programme took as its baseline the assumptions under the central economic case. This provides consistency of appraisal across the Business Case. However, this specifically does not imply any commitment by the Government to amend services as outlined in that case. Therefore the analysis provides broad strategic reassurance on future financial flows and is not intended to represent detailed forecasts.

Summary of Findings

54. The commercial analysis provides a better understanding of the affordability of HS2, in the context of wider GB rail. The key finding is that the 'reference case' (consistent with the assumptions of the 'Standard Case' in the Economic Case), which assumes demand stops growing in 2036-37, shows that HS2 would be of

¹⁵ 'GB Rail' in this case excludes Mersey Rail, Crossrail and Scotrail.

¹⁶ It should be noted that the analysis assumes that up front capital costs associated with construction of the network and delivery of rolling stock are met by government. This is a modelling assumption; the specific approach taken will be dependent on future policy decisions. The analysis also assumes that future renewals are applied to a notional regulated asset base (RAB) and are financed through ToC operating charges.

¹⁷ The analysis considered the *incremental* impact on GB rail premium/subsidy balance, rather than the *absolute* position over time.

benefit to the taxpayer once it reaches steady state when operational. The analysis shows an additional¹⁸ operating surplus¹⁹ across GB rail of around £300m a year on average (in 2010-11 prices) in steady state once HS2 is operational. The analysis suggests this would be comprised of an operating surplus for HS2 services of around £2.8bn and an additional subsidy requirement for classic services of around £2.5bn (due to abstraction by HS2), in the reference case.

55. Other emerging findings to note are as follows:

- The advent of HS2 operations will deliver an increase in capacity of more than 80% on North-South intercity routes²⁰ (measured by seat miles) at no on-going cost to the taxpayer in the medium term.
- Assumed future demand is the key variable in the analysis. If demand is assumed to continue growing beyond 2036-37, the financial case is enhanced. On average, for each year imposition of the demand cap is delayed, the operating surplus across GB rail would be enhanced by around £50m-£100m.
- The modelling assumes significant renewals expenditure beyond 2060, when the uncertainties associated with any forecasts are increasingly large. However, based on the assumptions in the Economic case, the emerging analysis suggests that the assumed renewals costs would be met if demand continued to grow into the early 2040s.
- The analysis tested the robustness of the results against a range of scenarios and sensitivities. This provided broad reassurance around the ongoing affordability of the advent of HS2 services. HS2 services are likely to generate an operating surplus in all but the most extreme scenarios.
- The most significant competition to HS2 is considered most likely to come from within the rail industry, although initial analysis suggests that the impact of rail competition is likely to have only a marginal impact on overall industry revenues.
- The modelling suggests there is some potential scope to improve the Financial Case. Future work will consider this further, and any potential savings have not been included within the high levels results set out here.
- The analysis confirms the importance of considering the future integration between classic and high speed networks, and in particular the arrangements for adjacent TOCs.
- The initial analysis suggests the year prior to opening of both Phase 1 and 2 would see significant operating costs associated with testing. The analysis also assumed demand builds up for HS2 over a three year period. Future work

18 The current projection for SPRS shows it in surplus.

19 'Operating surplus' = operating revenues, minus operating costs and an allowance for a commercial profit margin and Corporation Tax. This analysis assumes that initial construction and rolling stock costs have been met in full and written off. Once renewals are required (initially from 2041/42), these are assumed to be added to a RAB and charged to the train operator.

²⁰ This is defined as seat miles per year run by HS2, ICEC, ICWC, EMT and Cross Country.

should consider how to manage the financial impacts and uncertainties associated with the initial years of HS2, for both HS2 and existing franchises.

56. The analysis indicated that HS2 services are likely to generate a strong operating surplus. There are a number of options to realise the value of HS2 once it is completed. 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, the new railway could attract a large private sector valuation in the late 2030s; a further sum could be raised by an infrastructure concession sale thirty years later – and so on. The Government would have the opportunity to strike the optimum balance between up-front income from an HS2 concession, noting that this could create a net subsidy requirement for classic rail, and taking ongoing financial benefit from annual improvements to the level of premia generated by GB railway overall.

THIRD PARTY CONTRIBUTIONS

57. The Phase 2 Command Paper in January 2013²¹ set out the Government's approach to seeking third party funding contributions. It stated that the Government is following three key principles in relation to the funding of HS2:

58. First, 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. Whilst our base assumption is that Government is likely to have a central role in driving forward investment in this vital infrastructure for the country we would examine the potential for private financing to reduce the up-front capital demand on the taxpayer and offer value for money.

59. Second, where there are parties who would benefit directly and significantly from the opportunities and the development that HS2 would generate – for example property developers, other major businesses or local authorities on the line of route – it is fair and right that they work collaboratively with the Government on options to support the project financially. Depending on specific circumstances, this might involve the commitment of funds, the commitment of land, or the alignment of local investment plans (for example in regard to HS2 stations) to maximise the local and national economic and regeneration benefits of HS2²².

²¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69738/hs2-phase-two-command-paper.pdf - see section 9.7.

²² The HS2 Growth Task Force is examining how to maximise economic growth and job opportunities from the government's plans to build a high speed rail network. It will report in Spring 2014.

60. Third, financial support from those who stand to benefit from HS2 would help show why this project needs to begin now.

THIRD PARTY FUNDING CONTRIBUTIONS²³

61. The delivery of HS2 will bring significant benefits to third parties. A number of private businesses will benefit directly, while HS2 is likely to drive significant increases in land value around most station sites, and potentially significant uplifts to business rate revenues with the arrival of new development.

62. While it is likely that third party contributions could only ever deliver a small percentage of the core costs for HS2, the key methods for reducing the net cost to Government could include:

- Agreements for funding/part funding from third parties of specific scheme elements or works;
- Use of aspects of the planning system – the Community Infrastructure Levy (CIL) or section 106;
- Business rate uplift – local authorities can now keep a share of growth in business rates in their area. In Enterprise Zones, 100% of all business rate growth is retained for 25 years. This will be used by the LEP to support their ambitions for further growth;
- Business rate supplements – as are being used in London as part of the Crossrail funding package;
- Joint Venture agreements.

63. The following sections discuss the potential approaches. However, the following caveats and assumptions should be noted.

- It is hard to predict the state of the development market this far out.
- Creating the right planning, land use and economic environment will be essential to bringing forward development.
- Assessment of business rate or CIL contribution presupposes the existing arrangements.
- There are limited examples to date of these funding mechanisms being used to support major transport schemes.

Specific Scheme Elements

64. Potential scheme elements where there is a strong case for third party contributions include stations that may be built specifically to serve a particular asset or business (e.g. a new station at an airport)²⁴ or transport links with a

²³ This Financial Case draws a distinction between 'funding' which is not repayable by HMT/DfT to a third party, and 'financing' which would be repayable.

²⁴ The government has made clear that the delivery of a station at Manchester Airport is dependent on agreement of a suitable funding package.

similar benefit to an existing operation (e.g. light rail shuttle service between an airport and an HS2 station). Discussions are underway with the relevant local stakeholders and asset owners to agree potential funding packages.

Planning Mechanisms

65. In regard to Phase 1 of the scheme, it is clear there is significant development potential at the Old Oak Common²⁵ and Birmingham Interchange sites, especially from Phase 2 onwards. Euston has a modest but high value potential site according to current design plans, while much of the land around Curzon Street is already committed for development.

66. CIL and Section 106 are both means for planning authorities to capture development value at or before the commencement of development. CIL is charged on new development by area when it is granted permission. Section 106 is by agreement between planning authority and developer. Recent experiences with funding of Crossrail and the Northern Line Extension, suggest that there is potential for CIL to generate worthwhile, albeit relatively modest returns.

Business Rate Retention

67. Business Rate retention allows local authorities to retain business rates from new developments and has the potential for some significant returns over time. From April 2013, local authorities keep a proportion of the growth in business rates generated in their area, thus acting as an incentive for growth. In the 24 English Enterprise Zones, all of the growth in business rates is retained and used by the LEP to support their economic ambitions.

68. With the Northern Line Extension, local authorities were asked to commit to providing revenues (business rates and CIL) to the exchequer that they would otherwise keep. There is also the option of additional income being applied to funding for local transport links or regeneration, rather than reducing core scheme costs.

Business Rates supplement

69. Crossrail is funded in part by a Business Rates Supplement set at 2p in the pound for all non-domestic properties with a rateable value of £55,000 or above. So a business rated at £100,000 would pay £2,000. This applies to the whole of London and is predicted to raise £4.1bn over its life. A similar model might apply in a core city benefitting from a city centre station although the willingness of companies to pay would need investigating given the reception of this approach in London.

Joint venture arrangements

²⁵ The Mayor of London has recently consulted on regeneration plans for the Old Oak Common area.

70. There may also be scope to make returns from joint venture arrangements with developers (e.g. where HS2 Ltd and developer(s) contribute land, expertise and/or finance into a shared, risk taking entity to jointly enhance value and share in the uplift). We are carefully considering the scope for future returns from development, for example potential returns related to stations, and potential structures to enable that. Further work is needed on these options.

Summary

71. The key messages are as follows:

- There is limited scope to deliver significant contributions for core scheme elements. The focus should be on a small number of achievable, and material, examples.
- Third party funding could also support the delivery of additional elements such as development, regeneration related investment and connectivity investment.
- HS2 will bring a very significant increase in land value around most station sites. Initial work suggests worthwhile gains could be had from the planning system and future business rate uplift. Further work is needed to establish the quantum as well as to clarify the wider Government policy in this area.
- For new development, initial analysis points to some revenue potential if CIL receipts are retained. This revenue might start to emerge around 2023, but possibly earlier if developer confidence can be raised sufficiently.
- Business rate revenues could be far larger. Establishing Enterprise Zones around the relevant station sites would allow these revenues to be retained by local areas in order to enable further investment to support growth.
- Work is needed to consider how joint venture arrangements might be more profitable to the Department/Exchequer over the long-term than a land sale to developers.
- A question remains as to how value is captured for existing development and from landowners who will enjoy a large dividend from the arrival of HS2.

EU Funding for HS2

72. There is a range of different types of EU funding for Member State transport projects. The Trans-European Network for Transport (TEN-T) Programme is probably the most relevant to HS2. It provides funding for transport infrastructure projects (works) and studies that ensure “the cohesion, interconnection and interoperability of the trans-European transport network, as well as access to it”.

73. TEN-T consists of a “core” network, proposed by the European Commission, and a “comprehensive” network, proposed by Member States. The current core network map includes the West Coast Main Line and Phase 1 of HS2, as it reflects infrastructure that will be in place by 2030. Phase 2 is included on the comprehensive network.

Potential Quantum of EU Funding for HS2

74. The European Union budget is defined annually, within a Multi-Annual Financial Framework (MFF). Within the 2007-2013 Framework, the financial envelope for the implementation of the TEN-T Programme is €8.013 billion. €1.597 billion was available in the 2012-13 financial year.
75. In the 2014-20 Framework, TEN-T is grouped with the Trans-European Networks for Energy and Communications in a new finance regulation, the “Connecting Europe Facility” (CEF). The European Parliament has recently approved the MFF budget agreed by the Council. This will allocate approximately €23.9bn for transport (including €10bn transferred from Cohesion for which the UK will not be eligible).
76. The funding for individual projects (or elements of projects), is allocated through a competitive bidding process, with the majority agreed at the start of the Framework period. The competitive nature of the bid process has the negative effect that it is not possible to be certain what funding, if any, will be allocated to a specific project in the future. The EU set criteria for applications. These will define which modes/types of projects that they are looking for. Projects submitted will also need to be completed in the timescales set by them, usually within the financial period.
77. However, rail projects, and specifically high speed rail, have traditionally been well viewed, and a number of projects have been delivered with funding from the European Union.
78. The HS1 project was awarded €256.5 million funding from the TEN-T programme which covered all Phases of the project from feasibility studies in 1996 to improved access to the King’s Cross St Pancras transport hub in 2007²⁶. Funding for Phase 2 of the LGV Est in France was agreed in September 2009. This €2.01bn project (June 2008 prices) between Baudrecourt and Vendenheim, will receive €118m European funding. This is equivalent to 5.87% of the total eligible costs.
79. We propose that DfT identifies elements of the project that meet the EC criteria. This is likely to be elements of the network such as the HS1/HS2 link, which deliver greater cross-border connectivity (in this case with the high-speed railway axis between London and Brussels, and on to Paris, Cologne, and Amsterdam).
80. There is also potential for EU funding towards studies and preparatory works, such as environmental work. Successful studies receive a minimum of £1m, up to a maximum of 50% of cost.

²⁶ HS1 received 19 TEN-T awards during implementation. This included some peripheral items such as redesign of King’s Cross Northern Ticket Hall and installation of escalators at Ebbsfleet.

81. This funding would be allocated through the annual “calls”, which assign funds outside of the initial bidding process. These are usually focussed on projects delivering outputs in that year.

Process for Seeking EU Funding

82. Funding is allocated through an externally validated competitive bidding process. Projects must show that they are mature (have full political support and a committed funding package and delivery mechanisms in place) and demonstrate a high EU added value. They must also demonstrate that they meet the criteria outlined at the start of the bidding process. Funding is allocated through two mechanisms:

- The Multi-Annual Work programme (MAWP). This focuses on major projects which are part of the core network. The bulk of programme expenditure (80%) will be allocated to these projects through a competitive bidding process at the start of the MFF.
- The Annual Work Programme (AWP). The remaining 20% of funding will be allocated to smaller scale projects through a series of “calls” for funding usually done on an annual basis.

83. Recommended proposals are then invited to enter into negotiations. If agreement is reached, individual Commission decisions are established to support individual projects.

84. The European Commission is aiming to get both the CEF and TEN-T Regulations adopted as soon as possible. They aim to adopt the Delegated Acts, necessary to begin the process for awarding funding, at the same time in order to launch calls for funding from TEN-T in early 2014. Officials in DfT propose to work with HS2 Ltd colleagues to prepare an HS2 related bid.

THIRD PARTY FINANCING OPTIONS

85. The Phase 2 Command Paper (January 2013, section 9.8) stated that the Government ‘would explore the potential for private financing to reduce the up-front capital demand on the taxpayer and offer value for money’. In December 2012, HS2 Ltd commissioned advice on this question via a ‘Financing Options Study’.

86. The analysis looked at three main potential sources of financing: (i) project finance; (ii) government supported debt finance; and (iii) utility finance (e.g. future concession). The key findings were as follows:

87. On project finance neither Design, Build, Finance and Maintain (DBFM) nor Design, Build, Finance and Transfer (DBFT) were considered attractive options. This is because in large scale rail projects:

- risk transfer to the private sector is undermined by a combination of complex interfaces and sheer size;
- cost overruns would not be absorbable by private contractors; and
- the highly contractualised nature of project finance structures would restrict flexibility around the end state for HS2 operations.

88. However, the overriding message was 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.

89. The analysis also considered the scope for *specific elements* of the project to use project finance, for example systems and rolling stock. They found that this would still be likely to be beyond the capacity of the market, and be unlikely to generate sufficient competition. A systems only financing would be within market capacity, but (under DBFM) long-term operational and maintenance elements could constrain operational phase flexibility and efficiency.

90. On government supported finance the analysis found this could take a variety of forms, but the defining feature is that government backs private sector borrowing to contribute to at least some of the financing of construction. Examples cited include: CTRL, Network Rail and housing associations.

91. The analysis suggested that this option was likely to be the only means of getting significant private sector finance into the construction phase of HS2, and that depending on the organisational structure and governance, it could also offer benefits in incentivising efficient delivery. These potential efficiency benefits may outweigh any additional costs associated with borrowing above Gilts.

92. However, it could also have downsides. The most obvious of these are:

- (i) it would cost more than straight Gilts;
- (ii) it could constrain future operational options, especially if the financing were to be linked to the future operation of the network – this may not fit well with desired operational end state or current policy intentions;
- (iii) it may / would be likely to be on balance sheet, therefore there would not be any public sector net borrowing (PSNB) or public sector net debt (PSND) benefit.

93. The third area looked at was utility finance, and 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, potentially a significant one, flowing back to the taxpayer to offset part of the initial construction costs. This

could be structured either by way of a fixed term concession with a bespoke charging structure (e.g. HS1) or a RAB based model.²⁷

94. The analysis suggested that there is likely to be significant market capacity for an HS2 concession, though there have been few individual capital raisings of over £5bn. The value of a concession will be determined largely by the level and certainty of access charge revenues, but the potential scale may be such that the delivery of finance may be best sought by letting two or even three separate concessions). An operating concession would mean government would still need to meet the up front capital costs of the project, and would also bear post construction defect risk. However, risk transfer could be structured to focus on those elements where the private sector can enhance efficiency (e.g. operating costs).

Rolling Stock

95. The HS2 rolling stock requirement is estimated at around £6.9bn for Phases 1 and 2 together. This is likely to exceed current private sector financing market capacity. The largest individual Rolling Stock Company (RoSCo) financings have been less than £1bn, and the largest since 2008 has been around £300m. The £2.4bn IEP financing was delivered through a structured Public Private Partnership (PPP) arrangement but included around £1bn of Japanese Export Credit Agency. However, there may be potential to establish a government funded rolling stock company which could seek co-investors in due course.

Stations

96. As highlighted at paragraph [63], there is a significant opportunity to develop the land above and around a number of HS2 stations in the manner of Kings Cross-St. Pancras and Stratford which could provide reduced costs to HMG to deliver the stations, and/or income from property development revenues. Although these benefits could only ever defray a minority of the costs of HS2, they could be material and potentially bring forward regeneration benefits at stations. Key issues to consider, however, are with regard to timing of contributions compared to maximising value (e.g. capital contributions now or receiving income over time) and the activities required in order to achieve maximum value at each location.
97. Each station environment is unique and the analysis suggested that while an overarching strategy should be developed to clarify the objectives of DfT and other Government departments, specific strategies with regard to land assembly, infrastructure investment in order to achieve value, and timing versus value should also be developed.

²⁷A RAB-based model could work in a very similar way to an Investment Recovery Charge (IRC) model. However, return on capital would be re-examined every five years under a RAB, while only the operating costs would be reset under an HS1-style IRC.

ACCOUNTING IMPLICATIONS FOR DFT

98. This section summaries the accounting implications for the department of proceeding with the HS2 project.

Pre-construction and Construction phases

99. Under the assumption that the majority of the funding for the construction of HS2 is sourced from Government (DfT), and HS2 Ltd (a DfT funded NDPB) continues to take forward construction after Royal Assent of the hybrid Bill, then:

- accounting for the expenditure of HS2 Ltd will follow international accounting standards and the FReM (Financial Reporting Manual);
- until Royal Assent, high value capital assets (land and property) will be on the DfT's balance sheet. HS2 Ltd operating costs will be recorded in HS2 Ltd's financial statements and any small value capital assets held on HS2 Ltd's balance sheet;
- after Royal Assent, these assets will be appropriated onto HS2 Ltd's balance Sheet for either for nil consideration or for a figure to be agreed;
- thereafter, all assets will be recorded on HS2 Ltd's balance sheet and HS2 Ltd will ultimately apply these assets to railway operations;
- HS2 Ltd's accounts will continue to be consolidated into DfT's group accounts and accounting policies and bases will need to demonstrate consistency across the Group.

100. Future governance arrangements relating to the construction phase are yet to be decided but it is currently assumed that any model will involve a form of Government owned body whose assets and liabilities are likely to be classified as public sector and hence on the government's balance sheet.

101. At this point in time it is not possible to assess the accounting treatment during the operational phase as it is not clear under what structure HS2 services would operate, their relationship with the rest of the rail network or even what the current rail network would look like at that time. Furthermore, future changes to accounting framework could make any analysis now obsolete.

102. However, it is likely that any accounting treatment will depend on two factors: the sector classification of HS2 Ltd (or the future body/company responsible for managing and exploiting the HS2 infrastructure asset), and the characteristics of its relationship with the Secretary of State. It is worth noting the following:

- If HS2 Ltd (or successor) is classified to the central government sector, it will be consolidated by the Department and all of its assets and liabilities will be treated as DfT's assets and liabilities on consolidation;

- If HS2 Ltd is not classified to the central government sector, but the relationship involves government regulation, and is time-limited, with control over the reversionary interest lying with the Department (as in the case of HS1), then the Department will treat the infrastructure as its asset, with a matching liability;
- If HS2 Ltd were privatised, with an indefinite right to operate the infrastructure for the private body, and if the business is commercially viable, then it is likely that the Department would not need to treat the infrastructure as its asset.

103. It is also possible that HS2 infrastructure could be transferred to a body similar to Network Rail (say an 'HS2 InfraCo') and HS2 services are let under a number of franchises. Under this scenario, the HS2 assets would transfer to the InfraCo. Consideration would need to be given to balance sheet treatment at the time of any future decision, although balance sheet treatment should not drive policy.

104. However, any transfer of assets is likely to be accompanied by a requirement to write off some of the cost of the assets as the value of the assets transferred is unlikely to equate to the cost of construction recorded on the Government's balance sheet. Any write-off in the accounts will be mirrored and scored against budgets (either resource AME or resource DEL depending on the underlying reasons and type of write-off).

105. This latter point is relevant to the acquisition of properties that will not be incorporated into HS2, but are required to facilitate construction. The accounting treatment of these acquisitions is currently under discussion with our technical accountants but there remains a risk that in some circumstances the value of assets to the Department, to be recorded on the balance sheet, may be lower than the purchase price (which will be at market value). This may necessitate an impairment (write-down), which would score against the Department's budgets and require Treasury approval. The value of assets to the Department depends on their accounting classification (which will be influenced by the Department's plans for the assets), and the valuation method required for assets with that classification.