

2 Overview of the proposed scheme's potential impacts

- 2.1.1 HS2 would have a number of sustainability impacts - some beneficial, some adverse.
- 2.1.2 The proposed HS2 route and stations and the new transport opportunities that the proposed scheme would create would enhance economic competitiveness, support wider economic growth and bring about enhanced employment opportunities. In supporting economic competitiveness, the benefits to businesses which would arise directly from the faster journeys potentially enabled by HS2 are valued at some £11.0 billion over 60 years.
- 2.1.3 Further economic benefits would accrue by HS2 effectively bringing cities closer together and by encouraging businesses (as well as workforces) to cluster around HS2 and, particularly, West Coast Main Line (WCML) stations. These businesses would operate more efficiently and competitively by being closer to one another. Such benefits could be worth a further £3.0 billion over 60 years. By opening up areas to the effects of wider competition and wider markets, the proposed scheme would be expected to deliver a further £1.0 billion of benefits. There could also be economic benefits due to transport improvements encouraging more people to work, although these would be relatively minor.
- 2.1.4 HS2 would also be expected to benefit people making commuting, leisure and other personal journeys. Over 60 years this is estimated to be worth some £6.4 billion of additional benefits. In total, when all of these factors are added together and benefits from fewer road accidents and better air quality are taken into account, economic benefits for the wider UK community from the London to West Midlands phase of the project are estimated to be £21.8 billion over 60 years.
- 2.1.5 The new railway stations would be the catalyst for new commercial enterprise and, over time, would stimulate opportunities for businesses to relocate and prosper at Euston as part of the over-site station development; at Old Oak Common where an interchange station would influence the development of the Park Royal Opportunity Area; in the West Midlands where the interchange station would support the development and connections with the National Exhibition Centre (NEC) and airport, and at Curzon Street in central Birmingham where HS2 passengers would have immediate access to the city centre's new proposed commercial quarter as well as its existing facilities.
- 2.1.6 Overall, it has been forecast that HS2 could attract some 30,000 jobs from the planned growth in employment for London and the West Midlands to the areas around the proposed HS2 stations. The scheme is also expected to provide 1,500 permanent operational employment opportunities, many of which would be new jobs. An estimated 9,000 jobs would also be created during construction. HS2 would displace a number of businesses and associated jobs; for example at Washwood Heath and Old Oak Common. However, it is likely that many of these displaced jobs would be re-established elsewhere. Close working between HS2 Ltd, local councils and local businesses would be undertaken to help to reduce the potential for adverse impacts on those affected.
- 2.1.7 As HS2 replaced some of the existing fast services on the WCML, space would be created on the WCML to allow new services for towns and cities between London and the West Midlands and additional commuter, local and regional services as well as opportunities for freight services. This would offer further stimulation to business.
- 2.1.8 Both HS2 and new services on the WCML would offer opportunities for a low carbon form of transport. The extent to which CO₂ emissions would be reduced, however, would crucially depend on how carbon-efficient electricity generation becomes in the future. It would also depend on any reduction in the number of flights (due to people switching to high speed train services) being maintained, as well as on the resulting available take-off and landing slots remaining vacant.
- 2.1.9 The redevelopment of Euston station has been recognised by the Mayor of London and Camden Council as a potential catalyst for the regeneration of the Euston area as a whole.

But, in order to achieve this, substantial property demolition would be required, including some 190 dwellings on the Regent's Park Estate and some 25 further dwellings. The immediate effect of this upon the local community at Euston would be significant. HS2 Ltd would be committed to working closely and at an early stage with the London Borough of Camden and the GLA and with community groups, residents' associations and affected residents generally to ensure that effective arrangements are in place to meet the housing needs of those affected by demolition of these dwellings, and to help to address wider impacts on the local community. At Washwood Heath in Birmingham, the construction of a new rolling stock depot would require the demolition of around 30 dwellings and the loss of a number of commercial premises. A similar approach to Euston, involving close working between HS2 Ltd and Birmingham City Council and with local residents and businesses would be undertaken to help to minimise disruption to this community.

- 2.1.10 Elsewhere property demolitions, although significant to those people directly affected, would be reasonably low in number given the scale of the scheme.
- 2.1.11 There would be some localised disruption along the route during construction. The main centres of population are in the greater London and greater Birmingham areas. The route would also pass in the vicinity of a number of more dispersed villages, hamlets and isolated farmsteads in the countryside. For the purposes of construction HS2 Ltd would develop and implement a code of practice that would contractually bind the companies building the route to reduce impacts to a practicable minimum.
- 2.1.12 Similarly, during operation railway noise would affect some people living along the proposed route. Further appraisal work has made assumptions about what could realistically be achieved through additional mitigation, such as noise barriers. On this basis, 'high' noise levels would affect fewer than 10 dwellings. Approximately 150 properties would be likely to experience levels of noise which would qualify for noise insulation payments under existing statutory compensation arrangements. There would be up to 4,700 dwellings identified on the proposed route corridor that would be likely to experience a noise change of 3 decibels or more (3dB being a just perceptible change in total noise over an assessment period) that results in a daytime noise level of 50 decibels or more (referred to in this document as a 'noticeable' noise change).
- 2.1.13 Experience from HS1 and other high speed railways shows that potentially significant effects from vibration and ground-borne noise (audible vibration) in properties over tunnels can be avoided. HS2 Ltd is committed to ensuring that no significant effects occur over tunnels through London and the Chilterns.
- 2.1.14 The proposed route between London and the West Midlands would include some 225km of new railway, passing through a variety of metropolitan, suburban and rural areas. Surface sections have been located alongside existing railways and roads over some 55km. Tunnels, totalling some 29km, would be provided to pass through hilly ground and to avoid the densest population in London. The proposed route has been lowered in places and 90km would be in deep or very deep cutting. Some 2km of cutting near to certain villages in rural areas would be covered for environmental benefits to form 'green bridges'. Elsewhere, approximately 85km of the proposed route would be at ground level or on embankment and 21km would be on viaduct.
- 2.1.15 The Chiltern Hills, much of which is designated as an area of outstanding natural beauty (AONB), would be crossed predominantly in tunnel and deep cutting with short elevated sections variously on embankment and viaduct to the south of Wendover where the route would be in close proximity to the A413 and Chiltern Railway. Some visual impact would be inevitable but of the 20.5km of railway through the AONB, all but 2km would be either in tunnel, in cutting and/or alongside the A413 main road. Extensive tree planting, as well as the creation of planted earth mounds or 'bunds', carefully blended into the landform, would help to further screen views and integrate the railway into the landscape.

Figure 1 – Cuttings, like those used on HS1, would help to screen views [Arup]



- 2.1.16 Refinements to the proposed route have ensured that no Grade I and II* listed buildings would be demolished, although the setting of three Grade II* buildings would be likely to be affected. Fifteen Grade II listed buildings would need to be demolished. Some listed structures in the Euston area would need to be relocated and the design of Euston Station and its associated over-site development would need to take into account the setting of Euston Gardens and the northern part of the Bloomsbury Conservation Area.
- 2.1.17 Three Registered Parks and Gardens would be physically impacted. However in each case further route refinement has been undertaken to limit the landtake and effects upon the settings of these features.
- 2.1.18 Two protected sites of archaeological importance would be physically impacted. These scheduled monuments, Grim's Ditch in the Chilterns and a Roman villa site in the vicinity of Edgcote would be subject to prior archaeological investigation and academic study, in line with Government guidance.
- 2.1.19 The proposed new railway would present a significant opportunity to reinforce and enhance biodiversity. It would provide a green corridor to be colonised by plants and animals, and could link with and form connections between existing habitats. There would, however, be adverse effects at a number of sites.
- 2.1.20 No internationally protected sites of ecological interest would be adversely affected and impacts to nationally protected sites would be restricted to a small number of locations. Partial landtake would be required from two sites of special scientific interest (SSSI). A number of locally designated sites and important habitats, such as ancient woodlands, would be physically impacted. Where sites of ecological interest and local importance are considered likely to be affected, further work would be undertaken during more detailed design, and management plans would be drawn up and implemented to help minimise the adverse effects on biodiversity.
- 2.1.21 Where the proposed route would cross rivers it has been designed to take account of future flood risks by the inclusion of structures to bridge these areas. In some places, the proposed route would pass in tunnel through important ground water resources.

Construction techniques would be implemented to reduce such risks to a practicable minimum.

- 2.1.22 The proposed new railway would make good use of land that has had a previous industrial or railway use. However, some productive agricultural land would be lost. Although the most important Grade 1 land would not be affected, the proposed route would pass across Grade 2 agricultural land for some 20km. Further work would be undertaken during later design stages to seek to reduce agricultural landtake and severance.
- 2.1.23 Construction of the proposed scheme would generate and consume large quantities of materials. HS2 Ltd would seek to re-use as much of this as possible within the scheme design, for embankments and landscape proposals. Opportunities would be sought to use any surplus spoil within other schemes and proposals; disposal to landfill would be used as a last resort.