

## Climate change adaptation and resilience

This factsheet outlines how the combined impact of the Proposed Scheme and potential climate change on the receiving environment and community will be assessed. It also outlines how the Proposed Scheme's resilience and capacity to cope with potential climate change impacts will be assessed.

Version 3.0

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# 1 Introduction

- 1.1.1 High Speed Two (HS2) is the Government's proposal for a new, high speed north-south railway. The proposal is being taken forward in phases. Phase One will connect London with Birmingham and the West Midlands. Phase 2a will extend the route to Crewe. The Western Leg of Phase 2b comprises an extension of the network to Manchester and a connection to the West Coast Main Line at Golborne, and is referred to as the Western Leg hybrid Bill. The Eastern Leg of Phase 2b currently comprises an extension of the network from the West Midlands through the East Midlands to Leeds.
- 1.1.2 HS2 Ltd is the non-departmental public body responsible for developing and promoting these proposals. The company works to a Development Agreement made with the Secretary of State for Transport.
- 1.1.3 The construction and operation of Phase One of HS2 is authorised by the High Speed Rail (London – West Midlands) Act (2017). In July 2017, the Government introduced a hybrid Bill to Parliament to seek powers for the construction and operation of Phase 2a.
- 1.1.1 In February 2020, the Government announced its intention to draw up an Integrated Rail Plan. This will recommend a way forward on scoping, phasing and sequencing the delivery of HS2 Phase 2b, Northern Powerhouse Rail, Midlands Rail Hub and other proposed rail investments across the north. At the same time, the Government asked HS2 Ltd to prepare the Western Leg hybrid Bill, provided it does not prejudice any recommendations or decisions that will be taken in this plan, which will be published by the end of the year.
- 1.1.2 It is intended to deposit a Western Leg hybrid Bill seeking powers to construct and operate this phase in Parliament in early 2022 or sooner if possible (the Proposed Scheme). The work to produce the Bill will include an Environmental Impact Assessment (EIA), the results of which will then be reported in an Environmental Statement (ES). The ES would be submitted alongside the Bill when it is introduced to Parliament. As was the case with Phase One and Phase 2a, when the Bill is introduced to Parliament the Secretary of State will also publish draft Environmental Minimum Requirements (EMRs). The EMRs will set out the environmental and sustainability commitments that will be observed in the construction of the Proposed Scheme.
- 1.1.3 A series of information papers were produced for the Phase One and Phase 2a hybrid Bills, explaining the commitments made in those Bills and EMRs. It is the Secretary of State's intention to follow a similar process for the Western Leg Bill. These information papers will be used to provide information about the Proposed Scheme itself, the powers contained in the Bill and how decisions on

the Proposed Scheme have been reached. It is currently proposed that these information papers for the Western Leg of Phase 2b will be published at the time the Bill is introduced in Parliament.

- 1.1.4 The Secretary of State for Transport will be ‘the Promoter’ of the Western Leg Bill. The Promoter will also eventually appoint a body responsible for delivering the Proposed Scheme under the powers to be granted by the Bill. This body will be known as the ‘nominated undertaker’. There may well be more than one nominated undertaker. However, any and all nominated undertakers will be bound by the obligations contained in the Bill, the policies established in the Western Leg EMRs and any commitments provided in the Western Leg information papers.
- 1.1.5 These Western Leg factsheets have been produced to provide information on the emerging proposals for measures to manage the design process for the Proposed Scheme and to control impacts which may arise from the construction and operation of the Proposed Scheme. These measures may then be applied to the Western Leg as commitments made through the eventual Bill, EMRs or information papers.

## 2 Overview

- 2.1.1 This factsheet outlines how the combined impact of the Proposed Scheme and potential climate change on the receiving environment and community will be assessed. It also outlines how the Proposed Scheme's resilience and capacity to cope with potential climate change impacts will be assessed.

## 3 The Proposed Scheme and climate change

- 3.1.1 The ES will assess the impact of climate change and the Proposed Scheme in two ways:
- The in-combination climate change impacts assessment, which will consider the combined effect of the Proposed Scheme and potential climate change impacts on the receiving environment during construction and operation<sup>1</sup>.
  - The climate change resilience assessment, which will consider potential climate change impacts on the design, construction and operation of the Proposed Scheme's infrastructure and assets over their lifetime.

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<sup>1</sup> The term in-combination climate change impacts refers to the combined effect of the impacts of the Proposed Scheme and potential climate change impacts on the receiving environment.

## 4 Policy background

- 4.1.1 European Directive 2014/52/EU on the assessment of environmental effects sets out the requirement for a climate change adaptation assessment in the ES for the Proposed Scheme.
- 4.1.2 Climate change policy is set out in the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009, supported by the national Climate Change Risk Assessments (2012<sup>2</sup>, 2017<sup>3</sup>), National Adaptation Programme (2018)<sup>4</sup> and Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024. The Government has identified the resilience of UK infrastructure to climate change as a major 21<sup>st</sup> century challenge that needs to be addressed.
- 4.1.3 Additionally, the Government has committed to the provisions of the Paris Agreement<sup>5</sup> which, for the time being, must be regarded as Government policy in respect of climate change commitments.
- 4.1.4 Guidance on climate change allowances to be used in flood risk assessments was produced by the Environment Agency in 2016 and is set out in the National Planning Policy Framework (NPPF)<sup>6</sup>; These allowances are currently being updated to take account of the UK Climate Projections 2018 (UKCP18). At the time of writing no updated allowances have been published.

## 5 HS2 Ltd policy

- 5.1.1 HS2 Ltd's Environmental Policy<sup>7</sup> sets out the aim to "build a network which is climate resilient for the long term".

## 6 Climate change in-combination impact assessments

- 6.1.1 HS2 Ltd aims to minimise the combined effect of the project and climate change on the environment. HS2 Ltd has considered how climate change, in combination with the impacts of the Proposed Scheme, may affect communities,

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<sup>2</sup> Department for Environment, Food and Rural Affairs, (2012), The UK Climate Change Risk Assessment 2012 Evidence Report.

<sup>3</sup> Department for Environment, Food and Rural Affairs (2017), the UK Climate Change Risk Assessment 2017

<sup>4</sup> Her Majesty's Government (2018), The National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting, Her Majesty's Stationery Office.

<sup>5</sup> United Nations (2015), *Paris Agreement*. Available online at:

[https://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)

<sup>6</sup> <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

<sup>7</sup> <https://www.gov.uk/government/publications/hs2-environmental-policy>

businesses and the natural, historic and built environment along the Phase 2b route.

- 6.1.2 Each environmental topic will consider changes to long-term, seasonal averages and extreme weather events, in order to undertake preliminary qualitative consideration of the combined effects of climate change and the Proposed Scheme for both the construction and operational phases of the railway. The methodology is described in the Scope and Methodology Report<sup>8</sup>.

## 7 Climate change resilience

- 7.1.1 A high level climate change resilience assessment will be reported in Volume 3 and Volume 5 of the ES, and will identify the potential risks of climate change on the Proposed Scheme and will assess the Proposed Scheme's resilience and capacity to cope with these potential risks. The assessment will consider risks posed by predicted climate change trends such as increased frequency of heatwaves, increased frequency of heavy rainfall events, increase in mean temperature across all seasons to the infrastructure and assets associated with the railway including tracks, tunnels, overhead line equipment, rolling stock, stations and earthworks. The likelihood and consequences of climate hazards will be considered based upon the trends within the UK climate projections.
- 7.1.2 For any significant climate change resilience effects identified, a range of mitigation measures would be considered within the design of the Proposed Scheme or within development of maintenance and monitoring procedures.
- 7.1.3 Work during further design stages would assess the impacts of climate change on interdependencies between the Proposed Scheme and other organisations such as rail, road, power and telecoms infrastructure operators.
- 7.1.4 Climate change resilience assessments will continue to take place throughout the design, construction and operation stages of the Proposed Scheme.

## 8 More information

- 8.1.1 Further factsheets and details on the Proposed Scheme can be found at: [www.hs2.org.uk/phase2b](http://www.hs2.org.uk/phase2b)

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<sup>8</sup> The Phase 2b Scope and Methodology report is available here: <https://www.gov.uk/government/publications/hs2-phase-2b-environmental-impact-assessment-scope-and-methodology-report>





