

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement and
Additional Provision 2 Environmental Statement

Volume 5 | Technical appendices

Electromagnetic interference (EM-001-000)

July 2015

SES and AP2 ES 3.5.23



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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited:

AECOM

ARUP

ATKINS

CAPITA



ineco



**PARSONS
BRINCKERHOFF**



High Speed Two (HS2) Limited,
One Canada Square,
London
E14 5AB

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

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SES and AP2 ES Appendix EM-001-000

Environmental topic:	Electromagnetic interference	EM
Appendix name:	Affected receptors within 50m of the railway and associated risks and mitigation	001
Community forum area:	Routewide	000

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1 Electromagnetic interference

1.1 Introduction

1.1.1 This appendix provides an update to Appendix EM-001-000 'Affected receptors within 50m of the railway and associated risks and mitigation' from the main Environmental Statement (ES) as a result of amendments assessed as part of the Supplementary Environmental Statement (SES) and the Additional Provision 2 Environmental Statement (AP2 ES). This update should be read in conjunction with Appendix EM-001-000 from the main ES.

1.2 Policy framework

1.2.1 In June 2013, the European Commission (EC) repealed Directive 2004/40/EC and published Directive 2013/35/EU¹ on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields). The United Kingdom (UK) Government has three years, up to 1 July 2016, to transpose this Directive into UK law.

1.2.2 The revised Directive has no impact on the original electromagnetic interference (EMI) assessment undertaken for the scheme as compliance with the International Commission on Non-Ionising Radiation Protection (ICNIRP)² guidelines will meet the requirements of the Directive.

1.2.3 ICNIRP guidelines set acceptable levels for electromagnetic field (EMF) exposure of the general public and workers to provide protection against known adverse health effects.

1.2.4 All other standards referenced in the main ES have not changed.

1.3 Assessment scope

1.3.1 Experience gained from undertaking the original EMI assessment for the scheme presented within the main ES has shown that there will be no effect on human health as the emissions from the primary source of EMF, the traction power, are insufficient to cause any adverse effects.

1.3.2 Similarly, for any susceptible electrical or electronic equipment the maximum range of potential EMI is less than 20m from the centre of the nearest HS2 track.

1.3.3 For the AP2 revised scheme, a desk based survey of the route was undertaken to identify any potentially sensitive sites within a 20m corridor either side of the centre of the nearest HS2 track, or from the proposed power equipment, such as overhead lines and traction substations.

¹ Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) and repealing Directive 2004/40/EC
² ICNIRP, (2010), Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (1Hz to 100kHz), Health Physics, 99 (6): pp. 818-836.

1.4 Off-route

- 1.4.1 The proposal to relocate the Heathrow Express (HEX) Depot from its current location at Old Oak Common to a site east of Langley station will not lead to any significant EMI effects.
- 1.4.2 The depot will be built to service, maintain and repair the existing HEX rolling stock and therefore will be built to a similar standard as the existing depot.
- 1.4.3 EMI and EMF emissions from the traction power supply system within the depot will be less than that of the scheme as the traction power requirement for the current electrification system on HEX is less than that required for the scheme.
- 1.4.4 The only potential receptors reside in industrial units off Langley Park Road, which is at least 20m from any proposed source of traction power. Therefore, there is no risk of any EMI.

2 Potentially affected receptors

Table 1 shows those additional receptors that are within 20m of the centre of the HS2 track as a direct result of the AP2 amendments. Only sensitive electrical and electronic equipment is likely to be affected.

Table 1: Potentially affected receptors for electromagnetic compatibility assessment (equipment immunity)

Amendment reference number	Community forum area (CFA) (name and number)	Approximate railway chainage km + m	Distance from route centreline (m)	Sensitive installation	Receptor	Reference	Limit A/m	Estimated emission level	Is there any credible EMI/EMC risk? (Y/N)	Mitigation measures	Comments
N/A	South Ruislip to Ickenham CFA6	9+880	15m	Auto-transformer station 15m from land required for future development	Residential	EMI Technical Note (EMF plots), BS EN 61000-6-1	3	Greater than 3	Yes	Increase the permitted development boundary to 20m from the perimeter of the substation	Victoria Road auto-transformer station
Ap2-026-007	Washwood Heath to Curzon Street CFA26	174+600	Less than 20m	West Midlands Fire Service headquarters multi-storey car park	Industrial	EMI Technical Note (EMF plots), BS EN 61000-6-1	30	Less than 30	No	Maintain a distance of 20m from any sensitive electrical or electronic equipment.	There are no proposals for the car park. To be reviewed once concept design has been agreed.

3 References

Directive 2013/35/EU of the European Parliament and of the Council of 26 June 2013 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) and repealing Directive 2004/40/EC

ICNIRP, (2010), Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (1Hz to 100kHz), Health Physics, 99 (6): pp. 818-8.

High Speed Two (HS2) Limited

One Canada Square
London E14 5AB

T 020 7944 4908

E hs2enquiries@hs2.org.uk

X108