

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 3 and
Additional Provision 4 Environmental Statement

Volume 5 | Technical appendices

Electromagnetic interference
(EM-001-000)

October 2015

SES3 and AP4 ES 3.5.1.6

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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.

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SES₃ and AP₄ 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 3 (SES3) and the Additional Provision 4 Environmental Statement (AP4 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1.2.1 In June 2013, the European Commission (EC) repealed Directive 2004/40/EC and published Directive 2013/35/EU¹ on the minimum health and safety requirements regarding the exposure of workers to the risks arising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 or the boundary of any traction power substation.

1.3.3 For the AP4 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

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.

as overhead lines and traction substations. The results of this survey are shown in Table 1.

1.4 Off-route

1.4.1 There are no off-route (i.e. remote from the main HS2 route) issues associated with this AP.

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 AP₄ 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
AP ₄ -004-001	Kilburn (Brent) to Old Oak Common CFA ₄	6+000	15m	Block 25-32 Carlton House, Canterbury Terrace	Residential	EMI Technical Note (EMF plots), BS EN 61000-6-1	3	Greater than 3	Yes	Build auto-transformer station as far from buildings as possible, more than 20m.	Canterbury Works auto-transformer station is within 20m of Block 25-32 Carlton House, Canterbury Terrace.
AP ₄ -026-002	Washwood Heath to Curzon Street CFA ₂₆	174+800	20m	PMT Music Shop, 136 Lawley Middleway	Residential	EMI Technical Note (EMF plots), BS EN 61000-6-1	3	Greater than 3	Yes	Maintain a distance of 20m from the auto transformer substation.	Relocation of Curzon Street ATS from the west of the A4540 Lawley Middleway to the east of the proposal within the hybrid Bill.

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.

BS EN 61000-6-1 (2007), Electromagnetic compatibility Part 6.1: Generic standards-immunity for residential, commercial and light industrial environments.

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