Tritax Symmetry (Hinckley) Limited

HINCKLEY NATIONAL RAIL FREIGHT INTERCHANGE

The Hinckley National Rail Freight Interchange Development Consent Order

Project reference TR050007

Environmental Statement
Volume 2: Appendices

Appendix 18.9: Significance Assessment for The Resilience to Climate Change

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Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 Regulation 5(2)(a)

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 Regulation 14

This document forms a part of the Environmental Statement for the Hinckley National Rail Freight Interchange project.

Tritax Symmetry (Hinckley) Limited (TSH) has applied to the Secretary of State for Transport for a Development Consent Order (DCO) for the Hinckley National Rail Freight Interchange (HNRFI).

To help inform the determination of the DCO application, TSH has undertaken an environmental impact assessment (EIA) of its proposals. EIA is a process that aims to improve the environmental design of a development proposal, and to provide the decision maker with sufficient information about the environmental effects of the project to make a decision.

The findings of an EIA are described in a written report known as an Environmental Statement (ES). An ES provides environmental information about the scheme, including a description of the development, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

Further details about the proposed Hinckley National Rail Freight Interchange are available on the project website:

[redacted]

The DCO application and documents relating to the examination of the proposed development can be viewed on the Planning Inspectorate's National Infrastructure Planning website:

https://infrastructure.planninginspectorate.gov.uk/projects/east-midlands/hinckley-national-rail-freight-interchange/

Appendix 18.9◆

SIGNIFICANCE ASSESSMENT FOR THE RESILIENCE TO CLIMATE CHANGE

Table 18.9.1: Significance assessment for the resilience to climate change

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
Precipitation	Extreme rainfall events	Increase in magnitude and frequency of extreme rainfall events	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Damage to carriageway structures due to increased runoff	Minor adverse	Low	Not significant
				Soil saturation and water damage	Minor adverse	Low	Not Significant
				Increased slope instability	Moderate adverse	Low	Not Significant
				Damage to unpaved shoulders	Negligible	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Erosion, silting and sedimentation	Negligible	Low	Not Significant
				Softening of subsurface materials below the carriageway and structures	Moderate adverse	Low	Not Significant
			Rail	Landslip and earthwork failure and risk to rolling stock and staff	Large adverse	Very Low	Not Significant
				Damage to railway embankment and slope	Large adverse	Very Low	Not Significant
				Scour of bridge supports	Large adverse	Very Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Water on track or in underground structures	Moderate adverse	Low	Not Significant
				Damage to rail track	Moderate adverse	Very Low	Not Significant
				Other material damage to equipment and infrastructures	Moderate adverse	Low	Not Significant
			Ancillary Equipment	Blockage of drains and associated assets	Minor adverse	Medium	Not Significant
				Water accumulation	Minor adverse	Low	Not Significant
			Employees and Users/Operators.	Difficult working conditions	Minor adverse	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Movement of debris causing slip, trip and fall hazards	Minor adverse	Medium	Not Significant
				Health and safety risks to road users (e.g. skidding)	Minor adverse	Medium	Not Significant
			Landscaping / Habitats	Changes in growing season and more vigorous growth during wet periods	Negligible	Medium	Not Significant
	Drought	Increased risk of drought	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Loss of vegetation leading to greater erosion risk	Negligible	Medium	Not Significant
				Deformation of rigid structures (roads, cycleway and footpath, culverts etc)	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Enhanced reactions when cement stabilising and drying of concrete	Negligible	Medium	Not Significant
				Increased rate of deterioration of materials, potentially leading to need for early replacement	Negligible	Medium	Not Significant
				Drying out of construction materials and cracking	Minor adverse	Medium	Not Significant
				Increased dust and windborne materials affecting site construction, operation and maintenance, including silting and sedimentation	Minor adverse	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Rail	Failure of earthworks due to desiccation of embankments impacting rail track	Large adverse	Very Low	Not Significant
			Employees and Users/Operators.	More dust	Negligible	Medium	Not Significant
			Landscaping / Habitats	Drying out of construction materials and cracking	Minor adverse	Medium	Not Significant
	Change in seasonal average	Drier summers	Substructure/Built Structures.	Subsidence	Moderate adverse	Low	Not Significant
			Roads, Pedestrian and Cycleways.	Failure of earthworks due to desiccation impacting carriageways.	Moderate adverse	Very Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Shrinking and cracking of soils	Moderate adverse	Low	Not Significant
				Enhanced reactions when cement stabilising and drying of concrete	Negligible	Medium	Not Significant
				Increased dust and windborne materials affecting site construction, operation and maintenance, including silting and sedimentation	Minor adverse	Medium	Not Significant
			Rail	Failure of earthworks due to desiccation of embankments impacting rail track	Large adverse	Very Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
	Change in seasonal average	Wetter winters (including flooding and/or repeated wet cycles)	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Damage due to increased runoff	Minor adverse	Low	Not Significant
				Soil softening and erosion leading to collapse and settlement of soil structures	Moderate adverse	Low	Not Significant
				Increased slope instability	Moderate adverse	Low	Not Significant
				Soil saturation	Minor adverse	Medium	Not Significant
				Damage to unpaved shoulders	Negligible	Low	Not Significant
			Rail	Closure of line due to track flooding	Minor adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Failure of lineside equipment due to inundation of water	Moderate adverse	Low	Not Significant
				Access issues to depots, stations and offices	Moderate adverse	Very Low	Not Significant
				Scour of embankment material	Moderate adverse	Low	Not Significant
			Employees and Users/Operators.	Movement of debris causing slip, trip and fall hazards	Minor adverse	Medium	Not Significant
			Landscaping / Habitats	Changes in growing season and more vigorous growth during wet periods	Negligible	Medium	Not Significant
				Damage to unpaved shoulders	Minor adverse	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
		Increase in magnitude and frequency of extreme rainfall events	Employees and Users/Operators.	Water accumulation causing disruption to construction and operation	Minor adverse	Low	Not Significant
				Reduced opportunities for maintenance	Minor adverse	Medium	Not Significant
Temperature	Extreme temperature events	Increase in magnitude of extreme temperature	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Cracking and expansion particularly impacting structures / Thermal expansion and movement of joints and paved surfaces.	Moderate adverse	Low	Not Significant
				Increased risk of erosion	Minor adverse	Medium	Not Significant
				Deformation of pavement surfaces	Minor adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Rail	Sag of overhead line (OHL) and risk of dewirement	Moderate adverse	Very Low	Not Significant
				Failure of temperature controls and overheating of electronic equipment	Moderate adverse	Low	Not Significant
				Warping of rail track	Moderate adverse	Low	Not Significant
				Overheating of safety device.	Moderate adverse	Low	Not Significant
				Derailment due to snow or ice causing brittle tracks and track separation	Large adverse	Very Low	Not Significant
				Loss of power to rolling stock due to ice and	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				snow build up and contact failure			
				Icicle build up causing damage to pantograph	Moderate adverse	Low	Not Significant
				Ice on roads and vehicle incursion onto track system at level crossings	Moderate adverse	Low	Not Significant
				Frost cracking, freezing of equipment and structures on track	Moderate adverse	Low	Not Significant
				Supply cable sag or tensional failure	Moderate adverse	Low	Not Significant
				Damage to rail track	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Landscaping / Habitats	Drying out and loss of vegetation	Negligible	Medium	Not Significant
				Fire	Moderate adverse	Low	Not Significant
			Ancillary Equipment	Overheating of equipment, including during construction and operation (e.g. electronic signage)	Minor adverse	Low	Not Significant
			Site Contents and Business Continuity	Reduced opportunities for maintenance	Minor adverse	Medium	Not Significant
			Employees and Users/Operators.	Difficult working conditions	Minor adverse	Medium	Not Significant
				Increased fire risk	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Hot surfaces may cause injury	Minor adverse	Low	Not Significant
				Failure of temperature controls	Minor adverse	Low	Not Significant
	Change in seasonal average temperature	Hotter summers	Landscaping / Habitats	Drying out and loss of vegetation	Negligible	Medium	Not Significant
			Ancillary Equipment	Overheating of equipment, including during construction and operation (e.g. electronic signage)	Minor adverse	Low	Not Significant
			Substructure/Built Structures.	Enhanced reactions when cement is stabilising and drying of concrete	Negligible	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Employees and Users/Operators.	Reduced opportunities for maintenance	Minor adverse	Medium	Not Significant
				Greater demand for cooling	Negligible	Medium	Not Significant
				Difficult working conditions	Minor adverse	Medium	Not Significant
				Fire risk	Moderate adverse	Very low	Not Significant
			Rail	Warping of rail track	Moderate adverse	Low	Not Significant
	Change in seasonal average temperature	Warmer winters	Landscaping / Habitats	Changes in growing season and more vigorous growth during autumn and winter	Negligible	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Changes in invasive species	Negligible	Medium	Not Significant
			Roads, Pedestrian and Cycleways.	Fewer freeze-thaw events causing potholes	Minor beneficial	Medium	Not significant
			Rail	Impacts on maintenance budgets and leaf fall management from increased vegetation growth	Minor adverse	Low	Not Significant
				Impacts on maintenance budgets and risk-based assessment due to changes in invasive species	Minor adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Employees and Users/Operators.	Less disruption from fewer ice and snow events	Minor beneficial	Medium	Not Significant
				Better working conditions for road operatives	Minor beneficial	Medium	Not Significant
	Changes in solar radiation	Increase in solar radiation	Landscaping / Habitats	Changes in growing season and more vigorous growth	Negligible	Medium	Not Significant
			Ancillary Equipment	Increased solar gain (i.e. glare and warming of exposed surfaces)	Negligible	Medium	Not Significant
				UV degradation of exposed equipment e.g. cabling	Minor adverse	Low	Not Significant
			Substructure/Built Structures.	UV degradation of materials.	Minor adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
Wind	Gales and extreme wind events	Increase in mean wind speed and more frequent gusts	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Risk of damage to structures.	Moderate adverse	Low	Not Significant
				Erosion of banks and exposed surfaces	Minor adverse	Low	Not Significant
				Increased rate of deterioration of materials, potentially leading to early replacement	Negligible	Low	Not Significant
				Damage from high winds and rain-infiltration into surfaces and materials	Minor adverse	Low	Not Significant
			Rail	In relation to OHL equipment and tracks, there is a risk to rolling stock, staff and asset failure from falling	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				trees and debris (plastic bags, sheds and trampolines)			
				High crosswinds causing train instability	Moderate adverse	Low	Not Significant
				Other material damage to equipment and infrastructures	Minor adverse	Low	Not Significant
			Landscaping / Habitats	Loss of vegetation	Negligible	Low	Not Significant
				Falling trees	Minor adverse	Medium	Not Significant
			Ancillary Equipment	Signs, tall structures and high-sided vehicles at risk from increasing wind speeds.	Negligible	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
	Storms (snow, hail and lightning)	Increase in frequency of storms	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Destabilisation due to lightning strike	Moderate adverse	Very low	Not Significant
			Ancillary Equipment	Destabilisation due to lightning strike	Minor adverse	Very low	Not Significant
				Damage and disruption to power supply and other linked infrastructure.	Minor adverse	Medium	Not Significant
			Rail	For switches and crossings, there may be frozen or snow-blocked points and failure of point operating equipment	adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Lineside equipment may fail as a result of lightning strikes and electrical surges	Large adverse	Very Low	Not Significant
				Damage to railway embankment and slope	Large adverse	Very Low	Not Significant
				Scour of bridge supports	Large adverse	Very Low	Not Significant
				Water on track or in underground structures	Moderate adverse	Very Low	Not Significant
				Damage to rail track	Moderate adverse	Very Low	Not Significant
				Other material damage to equipment and infrastructures	Moderate adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Employees and Users/Operators.	Safety risks due to snow and ice.	Moderate adverse	Very low	Not Significant
				Electrical surges	Minor adverse	Very low	Not Significant
Soils	Soil moisture and runoff	Decrease in soil moisture in summer	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Shrinking and cracking of soils leading to subsidence	Moderate adverse	Low	Not Significant
			Landscaping / Habitats	Shrinking and cracking of soils leading to loss of vegetation and rockfall.	Negligible	Medium	Not Significant
				Damage to unpaved shoulders	Minor adverse	Medium	Not significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Ancillary Equipment	Shrinking and cracking of soils leading to subsidence	Minor adverse	Low	Not Significant
		Increase in soil moisture in winter	Substructure/Built Structures. Roads, Pedestrian and Cycleways.	Soil softening and erosion leading to collapse and settlement of structures	Moderate adverse	Low	Not Significant
				Increased slope instability	Moderate adverse	Low	Not Significant
				Soil saturation	Minor adverse	Medium	Not Significant
				Flooding and damage due to increased run-off	Minor adverse	Medium	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
				Greater mobilisation of pollutants in the soil/ground	Minor adverse	Low	Not Significant
			Ancillary Equipment	Blockage of drains	Minor adverse	Medium	Not significant
				Water accumulation in low spots and/or on impermeable surfaces	Minor adverse	Medium	Not significant
			Site Contents and Business Continuity	Increased maintenance costs	Minor adverse	Low	Not Significant
				Increasingly difficult working conditions, including time available to undertake works	Minor adverse	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
	Soil stability	Decrease in soil stability	Substructure/Built Structures. Roads, Pedestrian and Cycleways. Rail.	Subsidence impacting road, cycleway and footpath and structures (culverts)	Minor adverse	Low	Not Significant
				Failure of earthworks due to desiccation	Moderate adverse	Very Low	Not Significant
			Landscaping / Habitats	Loss of soil leading to loss of vegetation	Negligible	Medium	Not Significant
			Employees and Users/Operators.	Increased maintenance costs	Minor adverse	Low	Not significant
	Soil salinity / pH	Change in soil chemistry	Landscaping / Habitats	Change in soil chemistry may lead to loss of vegetation	Negligible	Low	Not Significant
			Substructure/Built Structures.	Increased rate of deterioration of materials, potentially	Negligible	Low	Not Significant

Variable		Projected Change	Receptor	Effect	Consequence	Likelihood	Significance
			Roads, Pedestrian and Cycleways. Rail.	leading to need for early replacement			
Humidity	Relative humidity	Decrease in summer humidity, increase in winter humidity	Landscaping / Habitats	Changes in growing season and more vigorous growth	Negligible	Low	Not Significant
			Ancillary Equipment	Damage from condensation, mould growth and mildew	Negligible	Low	Not Significant
			Material Durability	Excessive moisture in building materials	Minor adverse	Low	Not Significant
				Excessive moisture in sheltered surfaces (i.e. north- facing)	Minor adverse	Low	Not Significant
			Rail	Thermal expansion and contraction of rail line	Minor adverse	Low	Not Significant