

Issue number P01

# Eastern Green Link 5

**Volume 2 : Appendices**  
**Environmental Impact Assessment Scoping Report**

**Document Reference: EGL5-NGET-CONS-XX-RP-YL-006**

**Planning Inspectorate Reference: EN0210010**

September 2025

nationalgrid

# Contents

---

<b>Appendix 6.A Arboriculture Impact Assessment Strategy</b>	<b>4</b>
<b>Appendix 16.A Health and Wellbeing Baseline Statistics</b>	<b>20</b>
<b>Appendix 29.A Major Accidents and Disasters Scoped In or Out of Further Assessment</b>	<b>25</b>

# Eastern Green Link 5

## Document control

---

### Document Properties

---

<b>Organisation</b>	National Grid Energy Transmission
<b>Author</b>	WSP UK Limited / Arcadis / CEA / Xodus / MSDS
<b>Title</b>	EGL 5 Environmental Impact Assessment Scoping Report Volume 2: Appendices
<b>Document Register ID</b>	EGL5-NGET-CONS-XX-RP-YL-006
<b>Planning Inspectorate Reference</b>	EN0210010
<b>Data Classification</b>	Public

---

# Appendix 6.A – Arboriculture Impact Assessment Strategy

## 6.1 Introduction

6.1.1 The Arboriculture Impact Assessment (AIA) will consider the potentially direct and indirect impacts on trees that may arise from the construction and operation of the English Onshore Scheme. This document describes the methodology to be used within the AIA which will accompany the Environmental Statement (ES) as part of the Development Consent Order (DCO) application.

6.1.2 This appendix of the Scoping Report sets out the relevant legislation, planning policy context and technical guidance used to inform the scope of the AIA and summarises any consultation and engagement in relation to arboriculture undertaken to date. It provides an overview of the baseline conditions relevant to arboriculture within / around the English Onshore Scheme Scoping Boundary, the measures which will be incorporated into the English Onshore Scheme to mitigate unnecessary tree impacts, the likely significant impacts to be considered within the assessment, and how these likely significant impacts will be assessed for the purpose of an AIA.

6.1.3 This appendix should be read in conjunction with **Volume 1, Part 1, Chapter 4: The Project**, and given the interface with other aspects of the English Onshore, considered alongside the following chapters located in **Volume 1**:

- **Part 2, Chapter 6: Biodiversity;**
- **Part 2, Chapter 7: Cultural Heritage; and**
- **Part 2, Chapter 8: Landscape and Visual Amenity.**

## 6.2 Relevant Legislation, Planning Policy and Technical Guidance

6.2.1 This section identifies the relevant legislation, national and local policy and guidance which will inform the scope of the AIA.

### Legislation

6.2.2 A summary of the key legislation considered, but not limited to, in the scope of arboriculture effects is outlined in **Table 6-1**.

Table 6-1: Legislation relevant to arboriculture

Legislation	Legislative context	Section considered
Environment Act 2021 (Ref 6.A.1)	The Environment Act 2021 has two main functions: to give a legal framework for environmental governance in the UK, and to bring in measures for improvement of	Section 6.7 Scope of Assessment.

Legislation	Legislative context	Section considered
	<p>the environment in relation to waste, resource efficiency, air quality, water, nature and biodiversity, and conservation. This Act also brings in a 'Duty to Consult' requirement for the local planning authority (LPA) before felling of street trees. There are exemptions to this requirement which should be established during the design development process.</p>	
<p>Town and Country Planning (Tree Preservation) (England) Regulations 2012 (Ref 6.A.2)</p>	<p>Tree Preservation Orders (TPOs) are administered by the LPA and made to protect trees that provide a significant amenity benefit. Under these regulations it is an offence to cut down, top, lop, uproot, wilfully damage / destroy a TPO tree, or to cause or permit such actions, without LPA consent.</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
<p>The Natural Environment and Rural Communities (NERC) Act 2006 (Ref 6.A.3)</p>	<p>Species and Habitats of Principal Importance in England are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 41 lists detail habitats that are of principal importance for the conservation of biodiversity in England and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006.</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
<p>The Hedgerows Regulations 1997 (Ref 6.A.4)</p>	<p>Under these regulations, it is an offence to remove a hedgerow (as defined within the regulations) without obtaining LPA permission. Should the hedgerow be deemed unimportant according to the criteria within the Regulations, the LPA is obliged to allow removal. If the hedgerow qualifies as 'important' under the Regulations then the LPA must decide whether the reasons for removal justify the loss of an 'Important Hedgerow', with a presumption for retention.</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
<p>Forestry Act 1967 (Ref 6.A.5)</p>	<p>The felling of trees is controlled by the Forestry Act 1967. In the event that trees need to be felled, a felling licence may be required. There are exemptions to this</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>

Legislation	Legislative context	Section considered
	requirement which should be established during the design development process.	

## Planning Policy

6.2.3 A summary of the planning policies at a national and local level relevant to the scope of arboriculture effects are given in **Table 6-2** and **Table 6-3** respectively.

**Table 6-2: National planning policy relevant to arboriculture**

Policy reference	Policy context	Section considered
<b>National Policy</b>		
	<i>Overarching National Policy Statement for Energy (EN-1) 2024 (Ref 6.A.6)</i>	
Paragraph 5.4.14	This paragraph defines ancient woodland, ancient trees and veteran trees as irreplaceable habitats which “ <i>would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity.</i> ”	Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.
Paragraph 5.4.15	This paragraph states: “ <i>Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland</i> ” and “ <i>Ancient and veteran trees found outside ancient woodland are also particularly valuable.</i> ”	Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.
	With reference to the Keepers of Time White Paper (Ref 6.A.7), this paragraph also states “ <i>the government's policy for ancient and native trees and woodlands in England sets out the government's commitment to maintain and enhance the existing area of ancient woodland, maintain and enhance the existing resource of known ancient and veteran trees, excluding natural losses from disease and death, and to increase the percentage of ancient woodland in active management.</i> ”	
Paragraph 5.4.32	This paragraph states “ <i>Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases.</i> ”	Section 6.6 Scope of Assessment and Section 6.7 Assessment Methodology.
Paragraph 5.4.53	This paragraph states “ <i>The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are</i> ”	Section 6.7 Assessment Methodology.

Policy reference	Policy context	Section considered
	<p><i>wholly exceptional reasons<sup>1</sup> and a suitable compensation strategy exists.”</i></p>	
<b>Draft Overarching National Policy Statement for Energy (EN-1) 2025 (Ref 6.A.8)</b>		
Paragraphs 5.4.15, 5.4.16, 5.4.33, 5.4.55	<p>The Government has published a draft update to the Overarching National Policy Statement for Energy. For this topic, the 2025 Draft NPS EN-1 is largely the same as in the 2024 document, relevant section numbers will remain the same, however paragraph numbers will be updated.</p>	<p>Section 6.4 Baseline Conditions, Section 6.6 Scope of Assessment, and Section 6.7 Scope of Assessment.</p>
<b>National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 6.A.9)</b>		
Paragraphs 2.9.16, 2.9.17	<p>These paragraphs outline design principles of the Holford Rules (developed by Lord Holford in 1959 and updated in the 1990s) for routing overhead lines to maximise the screening benefit of trees.</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
Paragraphs 2.9.18, 2.9.19	<p>These paragraphs outline design principles of the Horlock Rules (established by the National Grid in 2009) which state applicants should seek to: <i>“avoid...nationally designated areas of the highest amenity, cultural or scientific value” and “protect as far as reasonably practicable areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows...”</i></p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
<b>National Policy Statement for Electricity Networks Infrastructure (EN-5) (Ref 6.A.10)</b>		
Paragraphs 2.9.16, 2.9.17, 2.9.18, 2.9.19	<p>The Government has published a draft update to the Overarching National Policy Statement for Energy. For this topic, the 2025 Draft NPS EN-5 is largely the same as in the 2024 document, relevant section numbers and paragraphs will remain the same.</p>	<p>Section 6.4 Baseline Conditions and Section 6.7 Scope of Assessment.</p>
<b>National Planning Policy Framework (NPPF) (2024) (Ref 6.A.11)</b>		
Paragraph 187(b)	<p>The NPPF states that <i>“Planning policies and decisions should contribute to and enhance the natural and local environment by recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland”</i></p>	<p>Section 6.7 Assessment Methodology.</p>

<sup>1</sup> For example, where the public benefits (including need) of the nationally significant energy infrastructure would clearly outweigh the loss or deterioration of the habitat.

Policy reference	Policy context	Section considered
Paragraph 193(c)	<p>The NPPF states that “<i>development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons<sup>2</sup>, and a suitable compensation strategy exists.</i>”</p>	Section 6.7 Assessment Methodology.

Table 6-3: Local planning policy relevant to arboriculture

Local Authority plan / strategy	Summary of relevant policies relating to arboriculture
East Lindsey District Council (ELDC): East Lindsey Local Plan Core Strategy, 2018 (Adopted 2018) (Ref 6.A.12)	<p>Strategic Policy 23 (SP23): Landscape</p> <p>The distinctive character of the district's landscapes whether they are of cultural, natural or historic significance, should not be compromised by developments. In particular, the highest level of protection will be given to the Lincolnshire Wolds National Landscape (formally Area of Outstanding Natural Beauty), which is designated at a national level because of its landscape quality.</p> <p>SP24: Biodiversity and Geodiversity</p> <p>Planning permission will only be granted for development which directly or indirectly leads to loss or harm to ancient woodland or aged or veteran trees, in exceptional circumstances, where the developer can demonstrate that the wider benefits of that loss clearly outweigh the protection of the trees.</p>

## Technical Guidance

6.2.4 The AIA will be carried out in accordance with the following good practice and guidance documents:

- British Standard (BS) 5837:2012 – Trees in relation to design, demolition and construction – Recommendations (Ref 6.A.13). BS 5837:2012 provides a framework which sets out how trees should be surveyed and how tree constraints should be assessed and considered in the context of development.

<sup>2</sup> For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

- Natural England and Forestry Commission ‘Standing Advice’ for ancient woodland, ancient trees and veteran trees: advice for making planning decisions (Ref 6.A.14). Standing Advice recommends protective buffer zones for ancient woodland and greater protective buffer zones for individual ancient and veteran trees (when compared to BS 5837:2012).

## 6.3 Consultation and Engagement

6.3.1 The environmental assessment will be informed by consultation and engagement with stakeholders, including ELDC. To date no engagement has been undertaken specific to arboriculture. It is anticipated that feedback in relation to this topic and the scope of works will be gained following consultation on this Scoping Report, both for arboriculture, and those related chapters identified in Paragraph 6.1.3.

## 6.4 Baseline Conditions

### Study Area

6.4.1 The arboricultural study area will be based on the indicative construction working areas, referred to as the ‘likely working areas’, which will fully contain the following design / construction components:

- The landfall at Anderby Creek of a HVDC cable configuration;
- The routeing of HVDC cables, for up to 9 kilometres (km);
- The development of a new converter station;
- The routeing of HVAC cables, for up to 3 km; and
- Any land required to facilitate the construction of the above i.e., construction compounds, haul roads (including the Alford Bypass Construction Route), the working width required for cable installation etc.

6.4.2 The arboricultural study area is defined as a 30 metre (m) buffer zone around the likely working areas. The 30 m buffer zone is considered sufficient to identify veteran trees located outside of the likely working areas but whose buffer zone may be compromised by construction activities.

### Data Gathering Methodology

6.4.3 The AIA will be informed by a desk study and arboricultural surveys.

#### Desk Study

6.4.4 The desk study will be completed prior to commencing the arboricultural surveys and updated prior to submission of the ES for the DCO.

6.4.5 A desk study will use publicly accessible data including the Woodland Trust’s Ancient Tree Inventory, Multi-Agency Geographic Information for the Countryside (MAGIC) maps and local authority records. The desk study will record trees known to be within the following classifications:

- Ancient, veteran and notable trees;

- Ancient woodland;
- Traditional orchards;
- Tree Preservation Order; and
- Conservation area.

## Arboricultural Surveys

6.4.6 No data is yet available from arboricultural surveys to inform the Scoping Report due to the early stage of the Project. It is assumed that the arboricultural surveys would commence in Autumn 2025 (once the likely working areas have been identified and the proposed arboricultural study area confirmed) with remaining arboricultural surveys to be completed in 2026. The arboricultural surveys will be undertaken to capture data for trees falling into the categories below:

- Woodlands;
- Veteran trees
- TPO trees;
- Important hedgerows; and
- Noteworthy trees and groups (noteworthy trees are defined as Category A and B trees as set out in Table 1 of BS 5837:2012 (Ref 6.A.13).

6.4.7 It is unlikely a topographical survey will be available for the area of the English Onshore Scheme therefore the baseline truthing for spatial positioning of individual trees, groups of trees, hedges and woodlands shall be determined by the English Onshore Scheme. It is recommended that Bluesky National Tree Inventory Data, including trees and hedgerows should be used as the baseline and be made available on handheld devices for the arboricultural surveys.

6.4.8 The arboricultural surveyors will collectively record trees as a group where they form a cohesive arboricultural feature either aerodynamically, visually, or culturally. Whilst an indication of group stem spacing may be recorded, the surveys will not capture the actual number of trees within a group, therefore, the data should not be relied upon to inform exact replacement numbers.

6.4.9 Trees of merit such as veteran trees within groups will (where possible) be surveyed as individuals.

6.4.10 Linear collections of trees which form hedges will be recorded as a linear group. This survey is not a hedgerow assessment; however, the findings of these surveys may be used to inform the biodiversity assessment (**Volume 1, Part 2, Chapter 6: Biodiversity**).

6.4.11 The arboricultural surveys will identify the noteworthy arboricultural features and record these as either high or moderate quality as defined by Category A and B in BS 5837:2012.

6.4.12 Data recorded during the arboricultural surveys will be entered into a digital platform. The data capture proforma will include:

- A sequential reference number;
- The species (listed as common name);

- The height (to nearest metre);
- The stem diameter (measured at 1.5 m in height), for groups and woodlands the largest diameter will be recorded;
- Crown spread (largest spread to the nearest metre);
- The life stage (young, semi-mature, early-mature, mature, veteran);
- General observations;
- Estimated remaining contribution;
- The Root Protection Area (RPA); and
- The category, typically either A or B and subcategories of 1, 2 or 3.

6.4.13 The truthing baseline data (National Tree Inventory) will be used to inform the locations of low-quality Category C trees (defined in BS 5837:2012).

6.4.14 A canopy cover map will be created using the English Onshore Scheme's agreed point of truth baseline data and shall be available prior to the arboricultural surveys. This map will represent a baseline of all tree canopies and be a guide to inform where arboricultural surveys are required. LiDAR will also provide the spatial basis of those trees not deemed moderate or above quality, so that they may be assessed within the AIA.

## Current Baseline

6.4.15 At the time of writing, the arboricultural study area includes an area of 5453.7 hectares (ha) which encompasses the English Onshore Scheme Scoping Boundary plus a 30 m external buffer zone. It is anticipated that baseline data from the desk study shall be gathered prior to submission of the Preliminary Environmental Information Report (PEIR).

6.4.16 The study areas will be reviewed and amended in response to such matters as refinement of the design of the English Onshore Scheme, the identification of additional impact pathways and, where appropriate, in response to feedback from consultation. This is to ensure that there is sufficient data on which to conduct the assessment. These refinements are expected to reduce the extent of the study area as the design for the English Onshore Scheme progresses, whilst still reflecting recognised good practice.

## Future Baseline

6.4.17 It is recognised that there are a number of other proposed and committed developments within the surrounding area that could alter the future baseline in the absence of the English Onshore Scheme. The potential for cumulative effects will be considered later in the EIA process according to the approach outlined within **Volume 1, Part 4, Chapter 30: Cumulative Effects**.

## 6.5 Primary (Embedded) Mitigation Measures

6.5.1 A high-level optioneering study - the Corridor Preliminary Routeing and Siting Study (CPRSS), as described in **Volume 1, Part 1, Chapter 3: Consideration of Alternatives**, was undertaken to identify the preferred routeing and siting of the proposed infrastructure to ensure that environmental effects would be avoided where possible. As part of the English Onshore Scheme design process, a number of primary mitigation measures will be proposed to reduce the potential for impacts on arboricultural features. These measures will evolve as part of design development and in response to consultation. These measures will be fed iteratively into the assessment process. These measures typically include those that have been identified as good or standard practice through the design phase and construction phase and include actions that would be undertaken to meet existing legislation requirements.

### Design Phase

6.5.2 As part of design development, where reasonably practicable, siting of the English Onshore Scheme will avoid:

- Protective buffer zones of ancient woodland and veteran trees (Ref. 6.A.12);
- RPAs of high and moderate quality trees (as detailed in Section 6.6.4); and
- Root protection buffers of low-quality trees (as detailed in Section 6.6.5).

### Construction Phase

6.5.3 A range of standard measures for the English Onshore Scheme are likely to be adopted for the duration of the construction phase. Primary mitigation measures relevant to arboriculture will be set out in the Outline Construction Environmental Management Plan (CEMP) which shall be prepared to accompany the ES and in accordance with the technical guidance listed in Section 6.2.4. The Outline CEMP will include measures relevant to the control and management of impacts related to arboriculture. Construction Contractor(s) will apply the relevant protective principles set out in BS 5837:2012 to trees within the likely working areas which will be preserved through the construction phase, and to trees outside of the working areas where such measures do not hinder or prevent the use of the relevant working areas for construction. All works to high grade trees, including trees covered by a TPO and veteran trees, will be undertaken or supervised by a suitably qualified arboriculturist.

## 6.6 Scope of the Assessment

6.6.1 The AIA will consider the construction phase of the English Onshore Scheme in line with BS 5387:2012 guidance, however, will include a buffer zone that extends to 30 m from the order limits. This scope is included to ensure that veteran trees that are situated beyond the BS5837:2012 that could be impacted by works are adequately considered as specified in Section 6.4.2.

### Potential Sensitive Receptors

6.6.2 The potentially impacted receptors include all arboricultural features located within and near to the likely working areas as described in Sections 6.6.3 to 6.6.6 below.

## Ancient and veteran trees

6.6.3 Trees either verified (via the Woodland Trust's Ancient Tree Inventory) or unrecorded (based on surveyor initial assessment) will be reported with a buffer zone equal to 15 x stem diameter or 5 m beyond the canopy spread, whichever is the greater. All surveyor assessed ancient / veteran trees should undergo further bespoke assessment using an industry accepted assessment methodology (such as 'Raven') or verified via the Woodland Trust's Ancient Tree Inventory program.

## High and moderate quality trees

6.6.4 High and moderate quality trees (Category A and B) will be reported with RPAs equal to 12 x stem diameter and canopy extents illustrated as a circle using the largest recorded spread measurement.

## Low quality trees

6.6.5 Low quality (Category C) arboricultural features will be plotted based on remote sensing data and an offset root protection buffer of 3 m applied to the canopy edge of the feature.

## Hedgerows

6.6.6 All hedgerows will be reported as low-quality features unless other technical disciplines (such as biodiversity / cultural heritage) identify the hedges as being 'important hedgerows'. For these important hedgerows the dominant woody species will be recorded and RPAs calculated (using the largest stem size) from the centre line of the arboricultural feature.

## Likely Arboricultural Impacts

6.6.7 Likely construction activities are outlined in **Volume 1, Part 1, Chapter 4: The Project**. The activities with the potential to cause arboricultural impacts include:

- Construction and installation of underground High Voltage Alternating Current (HVAC) and High Voltage Direct Current (HVDC) cables, including the excavation and backfill of trenches and earthwork operations.
- Construction of trenchless crossings, including at the selected landfall.
- Fixed plant areas such as the Converter Station and other static plant facilities, as required.
- Temporary construction areas inclusive of compounds, access routes (including the Alford Bypass Construction Route) and laydown / material storage areas.

## 6.7 Assessment Methodology

### Reporting

6.7.1 Arboriculture does not readily align to the wider EIA methodology and there is no industry standard, guidance or consensus on how arboriculture should be considered or managed as part of the EIA process. There is also no agreed definition for significant arboricultural effects, and for this reason it is typically managed as a stand-alone technical assessment in accordance with BS 5837:2012 and included as an appendix to the ES (i.e., the AIA).

6.7.2 The arboricultural surveys will commence when the likely working areas have been identified. Following the completion of the arboricultural surveys, the data will be used to produce a baseline arboricultural survey schedule and a tree constraints plan developed within a digital platform. The AIA will be prepared and as noted above, will be presented as an appendix to the ES.

6.7.3 The baseline arboricultural survey schedule and a tree constraints plan will comprise of all surveyed arboricultural features from the arboricultural surveys in accordance with the scope and include:

- Individual trees – tree stem location based on either topographic survey, LiDAR, National Tree Inventory Data, aerial imagery or GPS, canopy extents illustrated as a circle using the largest recorded crown spread measurement and an RPA as a circular area.
- Tree groups, woodlands and hedgerows – a polygon shape representing the extent of the tree stems plotted whilst in the field. The RPA buffer applied to the polygon based on the largest tree stem diameter recorded for that feature.

### Root Protection Areas

6.7.4 Other than ancient and veteran trees, the RPA will be calculated on the 12 x stem diameter measurement and capped at the maximum RPA measurement of 15 m radius in line with BS 5837:2012.

6.7.5 To provide appropriate protection measures for ancient and veteran trees, the AIA will where reasonably practicable adopt the Standing Advice (from Natural England and the Forestry Commission (Ref 6.A.14)) for calculating buffer zones:

*“for ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree’s canopy if that area is larger than 15 times the tree’s diameter. This will create a minimum root protection area”.*

### Arboricultural Impact Assessment

6.7.6 The impact of the English Onshore Scheme will be assessed using the baseline arboricultural survey schedule and tree constraints plan and will be reported in an AIA, submitted as an appendix to the ES.

6.7.7 The AIA will consider the likely impacts of the English Onshore Scheme on arboricultural features. The impacts will be assessed for all arboricultural features

whether captured in the arboricultural surveys or the LiDAR canopy data. Impacts are adverse and permanent unless otherwise stated.

6.7.8 Tree impacts will be shown indicatively on a 'Trees and Hedgerows to be Removed / Managed Plan' which will be included in the AIA. The figure shall spatially illustrate the extent of tree removal, potentially impacted and retained arboricultural features.

6.7.9 The AIA will set out mitigation measures to reduce the impact on retained arboricultural features. These mitigation measures will be included in the Outline CEMP.

### **Sensitivity, Magnitude and Level of Impact matrices**

6.7.10 As noted above, there is no recognised or consolidated methodology or practice for the determination of significance in relation to arboricultural effects. Rather than establishing 'significance of effect', as is the standard approach in wider EIA methodology, the AIA will focus on the 'level of impact'. The level of impact matrix, based on sensitivity and magnitude, will be used to establish the level of impacts as presented in **Table 6-4 to Table 6-6**. The information from the AIA will be used to inform the assessment of likely significant effects in relation to biodiversity, cultural heritage and landscape and visual amenity effects and will form an appendix to the ES.

Table 6-4: Sensitivity matrix

<b>Sensitivity</b>	<b>Example of potential characteristic</b>
High	<ul style="list-style-type: none"><li>• Ancient or veteran trees that are registered on the Ancient Tree Inventory and the extent has been verified on site.</li><li>• Arboricultural features that have been identified during the arboricultural surveys as veteran.</li></ul>
Medium	<ul style="list-style-type: none"><li>• Arboricultural features that have been classified as Category A in accordance with BS 5837:2012:<ul style="list-style-type: none"><li>— Trees that are particularly good examples of their species, especially if rare or unusual, and are considered to have high arboricultural value.</li><li>— Trees / woodlands of particular visual importance within the landscape.</li><li>— Trees that are essential components of groups, or of formal or semi-formal arboricultural features.</li></ul></li><li>• Trees / woodlands of particular conservation, historical, commemorative or other value.</li><li>• Forests or woodlands that are a particularly good example of their type and are likely to include diverse, structured, semi-natural, and undisturbed ecosystems.</li><li>• Forests or woodlands that exhibit high public usage.</li><li>• Forests or woodlands with high commercial value or potential.</li><li>• Any woodland identified for protection within the LPA's forestry and woodland strategy.</li></ul>

Sensitivity	Example of potential characteristic
Low	<ul style="list-style-type: none"> <li>● Arboricultural features that have been classified as Category 'B' in accordance with BS 5837:2012: <ul style="list-style-type: none"> <li>— Trees due to impaired physiological or structural condition are downgraded from Category 'A'.</li> <li>— Trees lacking special quality.</li> <li>— Trees with limited conservation or other cultural value.</li> <li>— Trees present in numbers, usually as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.</li> </ul> </li> <li>● Forests or woodlands with some high-quality characteristics but which might be disturbed or damaged e.g., from browsing pressure, windthrow or poor management.</li> <li>● Forest or woodlands lacking special characteristics to be considered high value.</li> <li>● Forests or woodlands with limited public usage.</li> <li>● Forests or woodland with limited commercial value or potential.</li> <li>● Trees covered by a TPO.</li> </ul>
Negligible	<ul style="list-style-type: none"> <li>● Arboricultural features that have been classified as Category 'C' or Category 'U' in accordance with BS 5837:2012: <ul style="list-style-type: none"> <li>— Trees that are of low arboricultural value including unremarkable trees of very limited merit.</li> <li>— Low or transient landscape benefits.</li> <li>— No material conservation or other cultural value.</li> <li>— Young trees less than 150 mm in stem diameter.</li> </ul> </li> <li>● Trees of very low quality which have poor structural and / or physiological condition and are not likely to be retained for more than 10 years in the current context.</li> <li>● Woodlands in poor condition, poorly adapted to soils and / or climate, or significantly affected by pests, diseases or other abiotic factors.</li> </ul>

Table 6-5: Magnitude matrix

Magnitude of impact	Description of potential impact
High	A noticeable change to the tree population over a wide area or an intensive change over a limited area.
Medium	Small changes to the tree population over a wide area or noticeable change over a limited area.

Magnitude of impact	Description of potential impact
Low	Very small changes to the tree population over a wide area or small changes over a limited area.
Negligible	No discernible change to the tree population.

Table 6-6: Level of impact

		Sensitivity of receptor / receiving environment to change / effect			
		High	Medium	Low	Negligible
Magnitude of change / effect	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

## 6.8 Assessment Limitations and Assumptions

6.8.1 The following limitations and assumptions have been identified:

- When undertaking the arboricultural surveys where access is restricted, tree measurements may be estimated;
- When undertaking the arboricultural surveys in the absence of information about stem diameter, a buffer zone of 3 m beyond canopy spread will be applied to low quality arboricultural features;
- The arboricultural surveys will not capture the actual number of trees or stems within a group; therefore, the data should not be relied upon to inform exact replacement numbers;
- Arboricultural data either as part of the desk study arboricultural surveys or collected does not constitute a health and safety survey;
- The arboricultural surveys and AIA will not include an Ancient Woodland and Veteran tree management strategy or Schedule 14 input (record of TPOs across the English Onshore Scheme and impacts thereon);
- It should also be noted that a review of ancient woodland inventory is taking place so it may be that designations change during the lifetime of this project;
- Caution must be taken over the exclusive use of LiDAR (Light Detecting and Ranging) data for initial gathering of information on location of trees and hedges. LiDAR data will not detect the presence of low hedges or tree or hedge features that have recently been managed through coppicing or hedge laying at the time that the LiDAR data was captured; and
- The arboricultural input does not include reporting on the future growth rates of trees and how these may impact on the 'affected / managed' category of impacts and ongoing management of services.

# Bibliography

Ref 6.A.1 His Majesty's Stationery Office (2021) Environment Act 2021. Available at <https://www.legislation.gov.uk/ukpga/2021/30/contents> [Accessed 22/07/2025]

Ref 6.A.2 His Majesty's Stationery Office (2012) The Town and Country Planning (Tree Preservation) (England) Regulations 2012. Available at <https://www.legislation.gov.uk/ksi/2012/605/made> [Accessed 22/07/2025]

Ref 6.A.3 His Majesty's Stationery Office (2006) Natural Environment and Rural Communities Act 2006. Available at <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed 22/07/2025]

Ref 6.A.4 His Majesty's Stationery Office (1997) The Hedgerows Regulations 1997. Available at <https://www.legislation.gov.uk/ksi/1997/1160/made> [Accessed 22/07/2025]

Ref 6.A.5 His Majesty's Stationery Office (1967) The Forestry Act 1967. Available at <https://www.legislation.gov.uk/ukpga/1967/10/contents> [Accessed 22/07/2025]

Ref 6.A.6 Department for Energy Security and Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1> [Accessed 22/07/2025]

Ref 6.A.7 Department for Environment, Food and Rural Affairs (2022) Keepers of time: ancient and native woodland and trees policy in England Net Zero. Available at <https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england> [Accessed 22/07/2025]

Ref 6.A.8 Department for Energy Security and Net Zero (2023) Draft Overarching National Policy Statement for Energy (EN-1). Available at <https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements/draft-overarching-national-policy-statement-for-energy-en-1-accessible-webpage> [Accessed 22/07/2025]

Ref 6.A.9 Department for Energy Security and Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at <https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5> [Accessed 22/07/2025]

Ref 6.A.10 Department for Energy Security and Net Zero (2023) Draft National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at <https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements/draft-national-policy-statement-for-electricity-networks-infrastructure-en-5-accessible-webpage> [Accessed 22/07/2025]

Ref 6.A.11 Ministry of Housing, Communities and Local Government (2024) National Planning Policy Framework. Available at <https://www.gov.uk/government/publications/national-planning-policy-framework--2> [Accessed 22/07/2025]

Ref 6.A.12 East Lindsey District Council (2018) East Lindsey Local Plan Core Strategy (Adopted 2018). Available at <https://www.e-lindsey.gov.uk/localplan2018> [Accessed 22/07/2025]

Ref 6.A.13 British Standards Institution (2012). BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations. London: British Standards Institution. Available at <https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations> [Accessed 22/07/2025]

Ref 6.A.14 Natural England/Forestry Commission (2022). Ancient woodland, ancient trees and veteran trees: advice for making planning decisions. Available at <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions> [Accessed 22/07/2025]

# Appendix 16-A

## Health and Wellbeing Baseline Statistics

The baseline has been informed by a desk study which has drawn on the following information sources:

- Office for National Statistics Census 2021 data (Ref 16.A.1). This source has been used for:
  - Age;
  - Sex;
  - Race and Ethnicity;
  - Language;
  - Population Density;
  - Education Levels; and
  - Employment Levels.
- Office for Health Improvement and Disparities online data (Ref 16.A.2). This source has been used for:
  - Indices of Multiple Deprivation scores (combined and crime domain).
- Department of Health and Social Care Fingertips Public Health (Ref 16.A.3). This source has been used for:
  - Outlook scores for happiness and life satisfaction; and
  - Life Expectancy.
- Data has been sourced from Fields in Trust (Ref 16.A.4) for access to green space.

Table 16.A-1: Health and wellbeing baseline data – demographics and socioeconomics

Demographic and socioeconomics																
		Age		Sex		Race / Ethnicity		Language		Population density		Education level		Employment	Indices of Multiple Deprivation (IMD) scores.	
		% 0-4	% 18-24	% 5-18	% 68+	% men	% women	Number white	% white	% English as main language.	Population density	% with GCSEs as highest qualification or less.	% Economically active.	Rank (where 1 is the most deprived, and 32,844 is the least deprived).		
England		5	17	15	49	51	48,699,231	81.7	91	279	41	57.4		N/A		
Local Planning Authority (LPA)	Ward	Lower Super Output Area (LSOA)														
East Lindsey	Alford	East Lindsey 008C	4	15	25	48	52	4,817	98	99	41.4	51	49		10,348	
		East Lindsey 008B									1,037.5	53			9,852	
	Chapel St. Leonards	East Lindsey 010B	2	9	36	49	51	4,643	98	99	73.2	58	35		5,204	
	Willoughby with Sloothby	East Lindsey 008D	3	10	30	50	50	2,381	98	99	28.3	55	45		6,265	
		East Lindsey 009B									21.5	46			9,610	
	Withern & Theddlethorpe	East Lindsey 008E	3	11	30	50	50	2,502	98	100	24.7	49	46		8,674	
	Legbourne	East Lindsey 008A	4	14	26	50	50	2,138	98	99	267.6	56	51		7,609	

Table 16.A-2: Health and wellbeing baseline data – health and wellbeing status

Health and wellbeing status								
Outlook			Disability			Life expectancy (years)		
		Happiness score (/10)	Life satisfaction score (/10)	Disabled under the Equality Act (including not disabled under the equality act but with long term physical or mental health conditions). (%)		Men	Women	
England		7.38	7.44		17.70			
LPA	Ward	LSOA						
East Lindsey	Alford	East Lindsey 008C	7.7	76.99	81.3			
		East Lindsey 008B			32			
	Chapel St. Leonards	East Lindsey 010B			37			
	Willoughby with Sloothby	East Lindsey 008D			33			
		East Lindsey 009B			29			
	Withern & Theddlethorpe	East Lindsey 008E			34			
	Legbourne	East Lindsey 008A			33			

Table 16.A-3: Health and wellbeing baseline data – physical environment

Physical environment					
			Access to space	IMD crime domain	
			Green space provision per person (m <sup>2</sup> ).	Rank (where 1 is the most deprived, and 32,844 is the least deprived).	
England			30	N/A	
LPA	Ward	LSOA			
East Lindsey	Alford	East Lindsey 008C	18.18	26,892	
		East Lindsey 008B		23,954	
	Chapel St. Leonards	East Lindsey 010B		24,567	
	Willoughby with Sloothby	East Lindsey 008D		21,773	
		East Lindsey 009B		28,451	
	Withern & Theddlethorpe	East Lindsey 008E		31,692	
	Legbourne	East Lindsey 008A		17,962	

## References

Ref 16.A.1 Office for National Statistics (2022) Census 2021: Population profiles for local authorities in England [online] Available at: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/articles/populationprofilesforlocalauthoritiesinengland/2020-12-14> [Accessed 20 June 2025].

Ref 16.A.2 Office for Health Improvement and Disparities (2022) [online] Available at: [https://www.localhealth.org.uk/#bbox=291615,449974,471394,274700&c=indicator&i=t1.lt\\_une\\_m\\_v&view=map10](https://www.localhealth.org.uk/#bbox=291615,449974,471394,274700&c=indicator&i=t1.lt_une_m_v&view=map10) [Accessed 20 June 2025].

Ref 16.A.3 Department for Health and Social Care, Fingertips public health profiles (2025) [online] Available at: <https://fingertips.phe.org.uk/> [Accessed 20 June 2025].

Ref 16.A.4 Fields in Trust, Green Space Index (2025) [online] Available at: <https://fieldsintrust.org/insights/green-space-index> [Accessed 20 June 2025].

# Appendix 29.A

## Major Accidents and Disasters Scoped In or Out of Further Assessment

The review of the Major Accidents and Disaster (MA&D) groups, categories and types identified in the study area(s), was undertaken to inform the Scoping Report and is summarised in **Table 29.A-1**. This table shows the potential vulnerability of the English Onshore Scheme to the risk of a MA&D by type. A justification of the MA&D event types to be scoped in or out of the MA&D assessment is provided, in accordance with the development phases of the English Onshore Scheme. For those MA&D event types that are scoped out, no further assessment is considered necessary in the Environmental Statement (ES).

This Appendix should be read in conjunction with **Volume 1, Part 3, Chapter 23: Shipping and Navigation**, which outlines the approach of assessment for a number of potential offshore impacts that are also relevant to MA&D.

Table 29.A-1: Elements scoped in or out of further assessment

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Natural Hazards	Geophysical	Earthquakes	Volume 1, Part 1, Chapter 4: The Project	No	N/A	N/A	<p>The National Risk Register states that "Significant earthquakes in the UK are rare, and an earthquake powerful enough to cause severe damage is unlikely." Regional compression caused by tectonic plate movement and uplift from melting ice sheets, while contributing to some seismic activity, are not strong enough to produce earthquakes of a magnitude that would cause significant damage.</p> <p>The British Geological Survey (BGS) acknowledges that on average, a magnitude 4 earthquake happens in Britain roughly every two years and a magnitude 5 earthquake occurs around every 10 to 20 years.</p> <p>The English Onshore Scheme is not in or close to an active area. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Geophysical	Volcanic activity	Volume 1, Part 1, Chapter 4: The Project	No	N/A	N/A	<p>The English Onshore Scheme is not in an active area and it is highly unlikely that an ash cloud could significantly impact on any aspect of the English Onshore Scheme. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Geophysical	Landslides	Volume 1, Part 1, Chapter 4: The Project	Yes	Construction	Workers Public and local community	<p>Historical landslides have not been recorded within the English Onshore Scheme Scoping Boundary. In addition, the English Onshore Scheme does not involve the formation of deep cuts or high embankments.</p> <p>In designing the English Onshore Scheme to applicable standards, resources and receptors would not be put at a greater risk as a consequence of the English Onshore Scheme. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Geophysical	Sinkholes	Volume 1, Part 2, Chapter 9: Water Environment Volume 1, Part 2, Chapter 10: Geology and Hydrogeology	Yes	Construction	Workers Public and local community	<p>According to BGS mapping, the bedrock geology beneath the English Onshore Scheme comprises of Ferriby Chalk Formation, Welton Chalk Formation and Burnham Chalk Formation. Chalk is a soluble rock which is potentially vulnerable to the formation of natural sinkholes.</p> <p>However, there are no examples of sinkholes in the locality of the English Onshore Scheme. The geotechnical design of the English Onshore Scheme will consider the underlying geology and, where appropriate, identify appropriate mitigation measures and as such this risk should remain in the design risk register. This risk will also be considered in the Construction Design Management (CDM) Risk Register with appropriate mitigation measures identified.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Geophysical	Tsunamis	Volume 1, Part 1, Chapter 4: The Project	No	N/A	N/A	<p>Tsunami hazard is classified as very low in Lincolnshire, meaning that there is less than a 2% chance of a potentially damaging tsunami occurring in the next 50 years. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Natural Hazards	Hydrology	Coastal flooding	Volume 1, Part 2, Chapter 9: Water Environment	Yes	Construction and operation	Aquatic environment and ecological receptors Properties Workers Public and local community	Anderby Creek Landfall <b>Volume 1, Part 2, Chapter 9: Water Environment</b> outlines that the majority of the Anderby Creek Landfall area is at high risk of flooding, with the English Onshore Scheme Scoping Boundary crossing large extents of coastal floodplain (initially defined by the extents of Environment Agency Flood Zone 2 and Flood Zone 3). However, flood defences are situated along the coastal frontage of the Anderby Creek Landfall area. These comprise of raised embankments and dunes, which reduce the risk of tidal flooding, such that the residual risk, linked to defence overtopping, is medium to low. Underground Cable Route Corridors <b>Volume 1, Part 2, Chapter 9: Water Environment</b> outlines that large parts of the northern and eastern parts of the Underground Cable Route Corridors are at high risk of flooding, with the English Onshore Scheme Scoping Boundary crossing large extents of fluvial and coastal floodplain (initially defined by the extents of Environment Agency Flood Zone 2 and Flood Zone 3). However, there are flood defences along the Woldgrift Drain. These comprise Natural High Ground and reduce the risk of fluvial flooding. EGL 5 Converter Station Areas <b>Volume 1, Part 2, Chapter 9: Water Environment</b> outlines that the majority of this section of the English Onshore Scheme Scoping Boundary is at low risk of flooding, although some areas, notably a portion of CS05, are in Flood Zone 2 and 3, at high risk of fluvial flooding associated with Woldgrift Drain and Boy Grift Drain. However, there are flood defences along the Woldgrift Drain which comprise Natural High Ground and reduce the risk of fluvial flooding. As part of the ES a Flood Risk Assessment (FRA) will be undertaken to assess the flood risk both to and from the Project and demonstrate how flood risk will be managed over the Project lifetime. The FRA will also give due regard to climate change. Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Natural Hazards	Hydrology	Fluvial flooding	Volume 1, Part 2, Chapter 9: Water Environment	No	N/A	N/A	The English Onshore Scheme is located in a rural, predominantly agricultural area and is therefore unlikely to experience pluvial flooding. As part of the ES a FRA will be undertaken to assess the flood risk both to and from the Project and demonstrate how flood risk will be managed over the Project lifetime. The FRA will also give due regard to climate change. Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Natural Hazards	Hydrology	Pluvial flooding	Volume 1, Part 2, Chapter 9: Water Environment	No	N/A	N/A	The English Onshore Scheme is located in a rural, predominantly agricultural area and is therefore unlikely to experience pluvial flooding. As part of the ES a FRA will be undertaken to assess the flood risk both to and from the Project and demonstrate how flood risk will be managed over the Project lifetime. The FRA will also give due regard to climate change. Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Natural Hazards	Hydrology	Groundwater flooding	Volume 1, Part 2, Chapter 9: Water Environment	Yes	Construction and operation	Aquatic environment and ecological receptors Properties Workers Public and local community	The Environment Agency Flood Map indicates that the risk of groundwater flooding is unlikely. As part of the ES a FRA will be undertaken to assess the flood risk both to and from the Project and demonstrate how flood risk will be managed over the Project lifetime. The FRA will also give due regard to climate change. Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Natural Hazards	Hydrology	Avalanches	Volume 1, Part 1, Chapter 4: The Project	No	N/A	N/A	Avalanches are not considered relevant given the geographical location of the English Onshore Scheme Scoping Boundary. The topography of the English Onshore Scheme Scoping Boundary is relatively flat and therefore an avalanche could not occur. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Natural Hazards	Climatological and Meteorological	Cyclones, hurricanes, typhoons, storms and gales	N/A	Yes	Construction and operation	Workers Public and local community	Cyclones, hurricanes and typhoons are tropical features and require sea temperatures much higher than those around the UK. Therefore, cyclones, hurricanes and typhoons do not occur in the UK. However, the UK can experience hurricane strength winds. Between October 2023 and February 2024, the UK experienced several storm events bringing heavy rainfall and flooding impacts to communities. Storm Babet and Storm Henk in particular caused significant impacts across Lincolnshire and Northamptonshire. According to the Met Office, this part of the country recorded the wettest ever winter on record. In October 2023, Storm Babet resulted in a month's rain in 24 hours and in January 2024, Storm Henk further	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
							<p>stressed already overwhelmed flood defence assets. The storms lead to widespread power outages and significant travel disruption.</p> <p>In the event of a storm during the construction phase, works would be temporarily suspended, and equipment secured. The risks associated with adverse weather conditions will be considered in the CDM Risk Register.</p> <p>During the operational phase, storms and gales could result in damage to infrastructure on site and could affect operation of the English Onshore Scheme. The design takes into account environmental conditions including exposure to UK weather conditions. The risk is not significantly different to the existing infrastructure in the locality.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	
Natural Hazards	Climatological and Meteorological	Thunderstorms	N/A	Yes	Construction and operation	Workers	<p>This type of event could result in lightning strikes to temporary elevated structures during construction (e.g., tower cranes); however, the risk is no different to other construction projects in the locality. In addition, the risks associated with adverse weather conditions will be considered in the CDM Risk Register.</p> <p>Above ground infrastructure (e.g., the converter station) will be provided with adequate lightning protection designed to a recognised industry standard.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Climatological and Meteorological	Wave surges	Volume 1, Part 2, Chapter 9: Water Environment	Yes	Construction and operation	Aquatic environment and ecological receptors Properties Workers Public and local community	<p>The English Onshore Scheme benefits from coastal flood defences and is therefore unlikely to be subject to wave surges.</p> <p>As part of the ES a FRA will be undertaken to assess the flood risk both to and from the Project and demonstrate how flood risk will be managed over the Project lifetime. The FRA will also give due regard to climate change. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES from a MA&amp;D perspective.</p>	No
Natural Hazards	Climatological and Meteorological	Extreme temperatures: Heatwaves Low (sub-zero) temperatures and heavy snow	N/A	Yes	Construction and operation	Workers	<p>This type of event could give rise to changes in climatic conditions, with infrastructure exposed to greater heat intensity and exposure to sunlight. Heavy snow could cause workers to be trapped on the construction site.</p> <p>In August 1990, the UK experienced heatwave conditions with temperatures reaching what was then a record 37.1 degrees Celsius in Cheltenham, England. In August 2003 a UK heatwave lasted 10 days and resulted in over 2,000 deaths. Temperatures reached what was then a record 38.5 degrees Celsius in Faversham, England and 33 degrees Celsius in Anglesey, Wales. In July 2022 40.3 degrees Celsius was recorded at Coningsby (Lincolnshire), setting a new UK and England temperature record. High temperature records are now being broken with increasing frequency.</p> <p>The most widespread and prolonged low temperatures and heavy snow in recent years occurred from December 2009 to January 2010. Daytime temperatures were mostly sub-zero across the UK. At night, temperatures in England regularly fell to -5 degrees Celsius to -10 degrees Celsius. Snowfall across the UK lasted for some time, allowing 20 cm to 30 cm of snow to build up, closing schools and making it very difficult to travel.</p> <p>In the area of the English Onshore Scheme:</p> <ul style="list-style-type: none"> <li>Between 1981 and 2010, there were no occurrences where summer mean temperatures exceeded 25.2 degrees Celsius on five or more consecutive days.</li> <li>Between 1981 and 2010, there have been 863 days with a maximum minimum temperature below zero degrees Celsius.</li> <li>Between 1981 and 2010, there were 38 days with snow lying at 0900 however, there are no records from the Met Office of the depth of snow.</li> </ul> <p>As a preventive measure, the UK Health Security Agency (HSA) collaborated with the Met office and introduced a Cold Weather Plan and an Alert system.</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
							<p>It should be noted that the risk of a MA&amp;D related to extreme weather conditions is no different to similar infrastructure in the locality. Specific measures and further assessment are therefore not considered to be required as part of the English Onshore Scheme. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	
Natural Hazards	Climatological and Meteorological	Droughts	<b>Volume 1, Part 2, Chapter 9: Water Environment</b> <b>Volume 1, Part 2, Chapter 10: Geology and Hydrogeology</b>	Yes	Construction and operation	Aquatic environment and ecological receptors Public and local community Properties Workers	<p>Over the past 40 years or so England has experienced five long-duration droughts and two shorter periods of drought. During the 2010-12 drought, parts of eastern England recorded their lowest 18 month rainfall total in over 100 years. Most recently in summer 2022, a drought was declared across most of England. Rainfall was below average in most southern and eastern areas during the summer of 2022. Potable water for the area of the English Onshore Scheme is supplied from abstraction boreholes, reservoirs and rivers.</p> <p>The Anglian Water Drought plan is updated every 5 years which aligns with a Water Resources Management Plan. The Anglian Water region is resilient to a 1 in 200 drought event. From 2025 the chance of an emergency drought order has decreased from a frequency of once in 100 years to no more than once in 200 years in the Anglian Water region.</p> <p>Prolonged periods of drought can impact infrastructure as drying out and cracking of soils may affect structural stability and prolonged dry periods can lead to cracking of surfaces and more rapid deterioration of materials. Decreased rainfall combined with an increase in the average temperature can also increase subsidence.</p> <p>The English Onshore Scheme should not be vulnerable to drought as water is not an essential service during the construction, operation or maintenance Stages. In addition, the geotechnical design will take into consideration current and predicted future climatic conditions in the UK.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Climatological and Meteorological	Severe space weather: Solar flares	N/A	No	N/A	N/A	<p>Solar flare events are known to interrupt radio and other electronic communications. Records from solar storms in 1921 and 1960 describe widespread radio disruption and impacts on railway signalling and switching systems. During the solar storm in May 2024, reportedly there were power grid irregularities and Global Positioning System (GPS) and high-frequency radio communications were impacted. Some aerial drone users flying during the storm experienced difficulty maintaining a stable hover, disruption of GPS signals, and in some cases a sudden loss of control. There were no reported significant impacts to the population.</p> <p>Telemetry to allow remote operation and remote monitoring systems will be installed as part of the English Onshore Scheme. However, the English Onshore Scheme is no more vulnerable than other similar infrastructure in the locality. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Climatological and Meteorological	Severe space weather: Solar energetic particles	N/A	No	N/A	N/A	<p>Solar energetic particles which cause solar radiation storms, but only in outer space.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Climatological and Meteorological	Severe space weather: Coronal mass ejections	N/A	No	N/A	N/A	<p>Coronal mass ejections (CME) cause geomagnetic storms. The geomagnetic storm in 2003 caused the UK aviation sector to lose some GPS functions for a day. The geomagnetic storm in 2024 caused some disruption however, there was no known significant impact on infrastructure in the UK. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Climatological and Meteorological	Fog	N/A	Yes	Construction	Workers	<p>Fog is one of the most common weather conditions in the UK, particularly throughout autumn and winter. Severe disruption to transport occurs when the visibility falls below 50 m over a wide area. It is only during the construction phase when fog may impact the English Onshore Scheme. There would be a risk to construction workers travelling to site, but this risk would not be significantly different from the baseline. Workers' health and safety is also managed by Occupational Health and Safety legislation.</p> <p>During the construction phase, works would be paused during poor visibility conditions. It is therefore considered that this MA&amp;D event type can be scoped out from further assessment in the ES.</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Natural Hazards	Climatological and Meteorological	Wildfires: Forest fire, Bush / brush, pasture	Volume 1, Part 2, Chapter 11: Agriculture and Soils	No	N/A	N/A	The English Onshore Scheme is located in a predominantly rural area. <b>Volume 1, Part 2, Chapter 11: Agriculture and Soils</b> states that “the agricultural land within the English Onshore Scheme Scoping Boundary is predominately arable land and grassland. Field boundaries are lined with hedges, trees and roads.” The English Onshore Scheme is not located in, or surrounded by, significantly large areas of woodland that could be at risk of wildfire events during hot, dry periods and / or fires initiated by construction related activities. It is therefore considered that this MA&D event type can be scoped out from further assessment in the ES.	No
Natural Hazards	Climatological and Meteorological	Poor air quality	Volume 1, Part 2, Chapter 14: Air Quality	Yes	Construction and operation	Ecological receptors Public and local community Workers	<p>In 2006 the UK experienced two periods of extended hot weather with associated elevated ozone and harmful airborne particles. In the spring of 2015, two particle pollution episodes caused widespread poor air quality throughout the UK, with multiple areas measuring 'High' on the Daily Air Quality Index and resulted in around 1,100 deaths due to exacerbation of pre-existing ill-health conditions. Summer 2015 also contained two elevated ozone episodes.</p> <p><b>Construction:</b> Construction effects would be temporary for the duration of the construction phase. Increased dust emissions from construction activities and combustion related emissions from on-site plant and vehicles could affect local air quality at nearby sensitive receptors. However, appropriate design and mitigation measures will be identified in the Outline Construction Environmental Management Plan (Outline CEMP) which will be submitted with the ES to manage potential air quality impacts. Following the implementation of the Outline CEMP, the changes in local air quality are not expected to be significant.</p> <p><b>Operation:</b> Operational traffic flows associated with maintenance are anticipated to be low. There will be back-up diesel generator(s) associated with the new converter station; however, these will only be used for short periods in emergency situations. A detailed air quality assessment is being undertaken as part of the ES (within <b>Chapter 14: Air Quality</b>) and will determine if mitigation measures are required to manage potential impacts from the back-up diesel generator(s).</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES from a MA&amp;D perspective.</p>	No
Natural Hazards	Biological	Disease epidemics:	N/A	Yes	Construction	Workers	<p>The English Onshore Scheme is located in a developed country where the population is in general good health.</p> <p>The most recent disease epidemic in England was COVID-19, the first cases of which were identified in February 2020. Although no longer considered a global health emergency by The World Health Organisation, the vulnerability of the English Onshore Scheme to a MA&amp;D event caused by COVID-19 during construction and operation should be mitigated by the occupational health and safety processes that are implemented by both the contractor and government rules and guidelines on the control of spread of COVID-19. The construction and use of the English Onshore Scheme will not give rise to any disease epidemics.</p> <p>The UK HSA, the executive agency of the Department of Health and Social Care, is responsible for protecting the nation from public health hazards, preparing for and responding to public health emergencies. One of The UK HSA's functions is to protect the public from infectious disease outbreaks and the Agency has produced documents providing operational guidance for the management of outbreaks of communicable disease, 'Communicable Disease Outbreak management: Operational Guidance'.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Natural Hazards	Biological	Animal diseases:	N/A	No	N/A	N/A	<p>Low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, although with no human cases reported. The largest outbreak to date was recorded over the years 2021 to 2023. Avian influenza has most recently been recorded in the winter of 2024/2025.</p> <p>The use of the English Onshore Scheme is not going to be the source of any animal disease epidemics. Spread would be controlled through containment of infected animals including</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
			<ul style="list-style-type: none"> <li>— West Nile virus</li> <li>— Rabies</li> <li>• Non-zoonotic: <ul style="list-style-type: none"> <li>— Foot and mouth</li> <li>— Swine fever</li> </ul> </li> </ul>				prohibition of transportation. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	
Natural Hazards	Biological	Plants	Volume 1, Part 2, Chapter 6: Biodiversity	Yes	Construction	Ecological receptors Workers	As outlined in <b>Volume 1, Part 2, Chapter 6: Biodiversity</b> , if invasive non-native plant species are identified through field survey and / or desk study, where practicable, works areas would be microsited to avoid contaminated locations. Where this is not possible, the Outline CEMP will identify biosecurity measures would be implemented to prevent the spread of invasive species from construction activities. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	Extensive public demonstrations which could lead to violence and loss of life	N/A	No	N/A	N/A	The English Onshore Scheme is in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. The English Onshore Scheme should not lead to disruptive or non-passive public demonstrations. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	Widespread damage to societies and economies	N/A	No	N/A	N/A	The English Onshore Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	The need for large-scale multi-faceted humanitarian assistance	N/A	No	N/A	N/A	The English Onshore Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	The hindrance or prevention of humanitarian assistance by political and military constraints	N/A	No	N/A	N/A	The English Onshore Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	Significant security risks for humanitarian relief workers in some areas	N/A	No	N/A	N/A	The English Onshore Scheme is located in a developed country that has steady, yet small population growth. England is politically stable with no direct border with countries experiencing conflicts. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Societal	Famine	N/A	No	N/A	N/A	The English Onshore Scheme is located in a developed country that produces its own crops and imports food. It is politically stable and not subject to hyperinflation and therefore food is available, whether produced within the UK or imported. Famine is also not relevant to the use of the English Onshore Scheme. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Technological or Manmade Hazards	Societal	Displaced population	N/A	No	N/A	N/A	There will be no displacement of populations as part of the English Onshore Scheme. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Major accident hazard chemical sites	N/A	Yes	Construction and operation	Workers Public and local community	<p>There is one lower tier Control of Major Accident Hazard (COMAH) site, Flogas Britain Limited, within a 5 km radius of the English Onshore Scheme.</p> <p><b>Construction:</b> During the construction phase the potential risk to construction workers will be identified and managed through the CDM Risk Register. Therefore, it is considered that this MA&amp;D event type can be scoped out from further assessment during the construction phase.</p> <p><b>Operation:</b> During the operational phase the cable will be located below ground and as such is unlikely to be impacted by a major event at the Flogas facility.</p> <p>The Flogas facility is located approximately 1.3 km south east of converter station siting zone CS06 and 2.9 km south east of converter station siting zone CS05. The Health and Safety Executive's (HSE) Planning Advice Web App illustrates that the consultation zones associated with the Flogas facility do not overlap the English Onshore Scheme Scoping Boundary and therefore a major event at the Flogas facility is unlikely to impact either of the converter station siting zones. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Major accident hazard pipelines	N/A	Yes	Construction and operation	Workers Public and local community	<p>The English Onshore Scheme site does not intersect any major accident hazard (MAH) pipelines and there are no MAH pipelines identified within 500 m of the English Onshore Scheme Scoping Boundary.</p> <p>The HSE's Land Use Planning tool identifies that there are two pipelines in the Local Authority Area. One of these is associated with the proposed anaerobic digestion plant in Spalding, the biomethane gas from which will be injected into the grid on site. The anaerobic digestion plant is located approximately 53 km south west of the closest point of the English Onshore Scheme Scoping Boundary. This is outside of the study area for MA&amp;D and as such will not be further considered in the ES. The second pipeline is associated with Glebe Farm anaerobic digestion plant. This facility is located approximately 13 km south west of the closest point of the English Onshore Scheme Scoping Boundary. This is outside of the study area for MA&amp;D and as such will not be further considered in the ES.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Nuclear	N/A	No	N/A	N/A	<p>Nuclear sites are designed, built and operated so that the chance of accidental releases of radiological material in the UK is extremely low. The last historical major accident in the UK was Windscale in 1957.</p> <p>There are no nuclear sites within 5 km of the English Onshore Scheme Scoping Boundary. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Fuel storage	N/A	Yes	Construction and operation	Workers Public and local community	<p>In December 2005 Europe's largest peacetime fire occurred at the Buncefield Oil Storage Terminal in Hemel Hempstead, England. The surrounding area was temporarily evacuated and some local businesses experienced long-term disruption to operations.</p> <p>There are no bulk fuel storage sites within 1 km of the English Onshore Scheme Scoping Boundary other than three fuel retail sites: Gill Marsh Forecourts approximately 390 m south of the closest point of the English Onshore Scheme Scoping Boundary; Huttoft Service Station (Jet) approximately 360 m west of the closest point of the English Onshore Scheme Scoping Boundary; and Hunts Coaches and Filling Station approximately 320 m east of the closest point of the English Onshore Scheme Scoping Boundary. Further assessment of the fuel retail sites is not required in the ES as the inventory of fuel held at each facility is relatively small (i.e. below COMAH thresholds) and the hazardous area classification zones will not extend beyond the petrol station boundary.</p> <p>Diesel will be stored at the English Onshore Scheme to power the emergency back-up generator(s) however, this will only be stored in small quantities in appropriately bunded tanks. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Technological or Manmade Hazards	Industrial and Urban Accidents	Dam breaches	Volume 1, Part 2, Chapter 9: Water Environment	No	N/A	N/A	Dam breaches in the UK are rare; the last major breach was at the Cwm Eigiau dam in 1925, which caused 17 fatalities and widespread flooding. The Environment Agency's Long Term Flood Risk map indicates that there is no risk of flooding from reservoirs in the English Onshore Scheme Scoping Boundary. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Mines and storage caverns	Volume 1, Part 2, Chapter 10: Geology and Hydrogeology	No	N/A	N/A	There are no records indicating current or historical mining of any sort within the study area. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Industrial and Urban Accidents	Fires	Volume 1, Part 2, Chapter 4: The Project	Yes	Construction and operation	Public and local community Workers	Fires could be initiated by construction related activities which impact areas adjacent to the construction activities. During construction, standard control measures would be implemented by the appointed contractor to manage the risk of fire. The CDM Risk Register will consider the potential impact of fire at the site during the construction phase and identify any appropriate mitigation measures to address the risk. The English Onshore Scheme will have an emergency plan to manage the risks associated with a fire should one occur, during the operational phase. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Transport accidents	Road	Volume 1, Part 2, Chapter 12: Traffic and Transport	Yes	Construction and operation	Workers Road users Public and local community	Significant transport accidents occur across the UK on a daily basis, mainly on roads, and involving private and / or commercial vehicles. <b>Construction:</b> During construction there will be an increase in heavy construction plant and equipment (cranes, aerial lifts) on local road network which may increase the risk of accidents. Construction traffic will be routed via prescribed roads that are considered to be the most suitable for the volume and composition of traffic likely to be required to construct the English Onshore Scheme. <b>Operation:</b> The operation of the English Onshore Scheme will not result in increased traffic flow or changes to traffic composition which could have an adverse impact on highway safety. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Transport accidents	Rail	Volume 1, Part 2, Chapter 12: Traffic and Transport	No	N/A	N/A	There are no railway lines within the study area. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Transport accidents	Waterways	Volume 1, Part 2, Chapter 12: Traffic and Transport	No	N/A	N/A	There are no waterways located in the study area used for significant transport by water. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Transport accidents	Aviation	Volume 1, Part 2, Chapter 12: Traffic and Transport	No	N/A	N/A	There have been no major air accidents in the UK since the Kegworth incident in 1989. There is one working airfield within the Study Area, Strubby Airfield which is located approximately 3.1 km north of the closest point of the English Onshore Scheme Scoping Boundary. Strubby Airfield is an unlicensed aerodrome and is not officially safeguarded. <b>Construction:</b> During construction the height of construction equipment (e.g., cranes) could potentially increase the risk to aircraft operating into / out of the airport. The CDM Risk Register will identify potential risks associated with the presence of the aerodrome and the requirement to notify as appropriate. Prior to the use of cranes, the crane operator will notify the Civil Aviation Authority (CAA) in accordance with the requirements of CAP 1096. <b>Operation:</b> The English Onshore Scheme will not attract birds and as such will not alter the bird strike risk. The HVAC cable will be buried below ground and as such is protected from above ground aviation incidents and is unlikely to be the initiator of an aviation incident. The converter station siting zone CS05 is located approximately 3.36 km south of the airfield and siting zone CS06 is located approximately 6.5 km south east of the airfield. Aircraft on approach / departure would not overfly the English Onshore Scheme.	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
							It is therefore considered that this MA&D event type can be scoped out from further assessment in the ES.	
Technological or Manmade Hazards	Pollution accidents	Air	Volume 1, Part 2, Chapter 14: Air Quality	Yes	Construction and operation	Ecological receptors Workers Public and local community	<b>Construction:</b> Construction effects would be temporary for the duration of the construction phase. Increased dust emissions from construction activities and traffic could lead to potential loss of amenity at sensitive receptors. Traffic management measures may result in both positive and adverse changes to emissions from vehicle exhausts and roadside pollution concentrations. Emissions from mobile plant and equipment is covered under health and safety and environmental legislation.  <b>Operation:</b> During operation the only emissions associated with the English Onshore Scheme will be from the diesel back-up generator(s). These generator(s) will only be used in emergency situations. The Air Quality assessment undertaken as part of the ES will consider the emissions from the generator(s) and if required, identify appropriate mitigation measures.  Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Technological or Manmade Hazards	Pollution accidents	Land	Volume 1, Part 2, Chapter 9: Water Environment  Volume 1, Part 2, Chapter 10: Geology & Hydrogeology	Yes	Construction and operation	Ecological receptors Public and local community	<b>Construction:</b> During the construction phase there may be an increase in the risk of leaks and spillages of hazardous materials associated with the construction activities. However, standard control measures would be implemented by the appointed contractor and appropriate mitigation measures would be in place via the Outline CEMP, to manage the risk of spillages and leaks.  <b>Operation:</b> During the operation phase there will be no significant fuel or oil storage other than the transformer oil within the convertor transformers which will be fitted with transformer oil trays and other containment systems to capture any leaks. Diesel for the back-up generator(s) will be stored in appropriately bunded containers which will be inspected in accordance with a preventative maintenance programme.  Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Technological or Manmade Hazards	Pollution accidents	Water	Volume 1, Part 2, Chapter 9: Water Environment  Volume 1, Part 2, Chapter 10: Geology & Hydrogeology	Yes	Construction and operation	Aquatic and ecological receptors Water environment Public and local community	According to <b>Volume 1, Part 2, Chapter 10: Geology and Hydrogeology</b> the bedrock beneath the English Onshore Scheme consists of either Burnham Chalk Formation or Welton Chalk Formation, both of which are classified as Principal aquifers. Principal aquifers provide significant quantities of drinking water, and water for business needs. They may also support rivers, lakes and wetlands.  <b>Construction:</b> During the construction phase there may be an increase in the risk of leaks and spillages of hazardous materials associated with the construction activities. However standard control measures would be implemented by the appointed contractor to manage the risk of spillages and leaks.  <b>Operation:</b> During the operational phase, potentially polluting materials will be provided with appropriate secondary containment measures to reduce the risk of leaks and spillages which will subsequently reduce the likelihood of contamination migrating into the groundwater.  Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Technological or Manmade Hazards	Utilities failures	Electricity	Volume 1, Part 1, Chapter 4: The Project	Yes	Construction and operation	Public and local community Workers	Instances of electricity failure (also referred to as power loss or blackout) can be caused by a number of things, such as severe weather (e.g., very strong winds, lightning and flooding) which damage the distribution network. These tend to be mainly specific place, local (e.g., metropolitan area) and less frequently regional (e.g., North East) as a result of severe winter storms and consequent damage to the distribution overhead line network.  <b>Construction:</b> Prior to work commencing utilities mapping of the area will be obtained and surveys will be undertaken, as necessary, to identify the presence of utilities. The risk associated with the presence of underground utilities will also be identified in the CDM Risk Register, with appropriate mitigation measures identified. Therefore, this MA&D event type has been scoped out from further assessment in the ES.  <b>Operation:</b> The cable element of the English Onshore Scheme will be buried underground for the full extent of the cable route, through a combination of trenched and trenchless techniques	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
							<p>and will come above the surface within the fenced perimeter of a converter station compound. The approximate trench depth coverage for the HVAC and HVDC cables for the English Onshore Scheme will be 0.9 m to the cable protective tiles, or potentially up to 1.2 m in some instances to accommodate agricultural requirements. The depth of installation will be deeper at locations where trenchless methods are required.</p> <p>In line with industry good practice for high voltage electricity transmission, protective provisions will be taken over the cables which will prevent the construction of structures, planting of trees or hedgerows and the use of deep farming equipment to prevent accidental damage. Periodic inspection of the whole cable will be undertaken to ensure these provisions are adhered to. The cable route will also be available for utilities searches to ensure that any persons undertaking construction works in the area are able to identify the cable route and avoid it.</p> <p>These provisions are comparable to the extensive existing high voltage electrical network in the UK, and therefore the risk of third-party damage is not considered to be significantly different in this location than any other comparable location.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	
Technological or Manmade Hazards	Utilities failures	Gas	Volume 1, Part 1, Chapter 4: The Project	Yes	Construction	Public and local community Workers	<p>A high-pressure gas transmission line runs through the converter station siting zone CS05. During the detailed design of the English Onshore Scheme the Applicant will engage with the pipeline owner to understand the easement on either side of the pipeline and the building proximity distance (the minimum separation required between a building and a gas pipeline or associated infrastructure). The design of the convertor station will ensure that these distances are adhered to and will be compliant with all relevant regulations and industry standards.</p> <p>Prior to work commencing utilities mapping of the area will be obtained and surveys will be undertaken, as necessary, to identify the presence of utilities. The risk associated with the presence of underground utilities will also be identified in the CDM Risk Register, with appropriate mitigation measures identified.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Utilities failures	Water supply	N/A	Yes	Construction	Workers	<p>There is no significant water use associated with the English Onshore Scheme during its operation and relatively low use during construction which could be addressed by tankering in supplies if required. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Utilities failures	Sewage system	N/A	Yes	Construction	Workers	<p>There is no use of the sewage system associated with the English Onshore Scheme. During the construction phase temporary portable systems will be in place covered by health and safety welfare requirements. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Malicious Attacks	Unexploded ordnance (UXO)	Volume 1, Part 2, Chapter 10: Geology & Hydrogeology	Yes	Construction	Public and local community Workers	<p>The Zetica Risk Maps indicate that the risk of encountering UXO in the study area is low. The risks associated with potentially encountering UXO will be considered in the CDM Risk Register. Measures would be undertaken during construction to brief operatives to raise awareness of this issue, and to define appropriate response strategies should this be discovered during the works.</p> <p>There would be a limited risk of UXO affecting the English Onshore Scheme, once operational but no greater than the existing and other similar developments.</p> <p>Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No
Technological or Manmade Hazards	Malicious Attacks	Attacks Chemical Biological Radiological Nuclear	N/A	No	N/A	N/A	<p>Extremists remain interested in Chemical, Biological, Radiological and Nuclear (CBRN) materials, however alternative methods of attack such as employing firearms or conventional explosive devices remain far more likely.</p> <p>Historical use has been in closed densely occupied structures (underground, buildings) or targeted at specific individuals.</p> <p>The English Onshore Scheme is unlikely to be a target for this type of event due to the low number of exposed targets. Therefore, this MA&amp;D event type has been scoped out from further assessment in the ES.</p>	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
Technological or Manmade Hazards	Malicious Attacks	Transport systems	N/A	No	N/A	N/A	Potential systems would include (but are not limited to) railways, buses, passenger ferries, cargo vessels and aircraft.  The English Onshore Scheme is unlikely to be a target for this type of event due to the low number of exposed targets. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Malicious Attacks	Crowded places	N/A	No	N/A	N/A	The English Onshore Scheme does not fall within the definition of a crowded place, i.e. pedestrian routes and other thoroughfares as well as sports arenas, retail outlets and entertainment spaces.  The English Onshore Scheme is unlikely to be a target for this type of event due to the low number of exposed targets. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Malicious Attacks	Cyber	N/A	Yes	Operation	Workers	Cyber-attacks occur almost constantly on key national and commercial electronic information, control systems and digital industries. The reliance on telemetry for remote monitoring could render the English Onshore Scheme more vulnerable to a cyber-attack.  Notwithstanding this, it is not considered to be more vulnerable to attack than other similar infrastructure installed and running elsewhere in the UK. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Malicious Attacks	Infrastructure	N/A	No	N/A	N/A	Terrorists in the UK have previously attacked, or planned to attack, national infrastructure. Attempts were made to attack electricity substations in the 1990s. Bishopsgate, in the City of London, was attacked in 1993 and South Quay in London's Docklands in 1996. These attacks resulted in significant damage and disruption but relatively few casualties.  Any attack on the English Onshore Scheme would have minimal impact on local / regional / national infrastructure or be considered a high profile attack. Therefore, this MA&D event type has been scoped out of further assessment in the ES.	No
Technological or Manmade Hazards	Engineering accidents and failures	Bridge failure	Yes	Yes	Construction	Workers	The English Onshore Scheme may involve the construction of temporary bridges over some Internal Drainage Board drains to allow access to the construction area. These bridges will be designed and built in accordance with appropriate standards. The potential risks associated with the construction and use of the bridges will be considered in the CDM Risk Register with appropriate mitigation measures identified.  Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Engineering accidents and failures	Flood defence failure	Volume 1, Part 2, Chapter 9: Water Environment	Yes	Construction	Aquatic and ecological receptors Properties Public and local community Workers	The study area associated with the English Onshore Scheme does benefit from flood defences.  Anderby Creek Landfall: Flood defences are situated along the coastal frontage of the Anderby Creek Landfall area. These comprise of raised embankments and dunes which are managed by the Environment Agency.  Underground Cable Route Corridors and EGL 5 Converter Station Areas: There are flood defences along the Woldgrift Drain. These comprise Natural High Ground and reduce the risk of fluvial flooding.  <b>Volume 1, Part 2, Chapter 9: Water Environment</b> states that "where flood defences are crossed, appropriate construction methodologies will be adopted, and defences will be suitably monitored to ensure no effects on their integrity."  As part of the Water Environment Chapter in the ES engagement will be undertaken with the Environment Agency to understand the potential effects of any temporary works on the design and integrity of these flood defences. As part of this engagement appropriate mitigation measures will be identified, if required.  Therefore, this MA&D event type has been scoped out from further assessment in the ES from a MA&D perspective.	No
Technological or Manmade Hazards	Engineering accidents and failures	Mast and tower collapse	N/A	No	N/A	N/A	There are currently no towers or masts in close proximity to the English Onshore Scheme or being built as part of the English Onshore Scheme. However, as part of the Grimsby to Walpole project new pylons will be built within the English Onshore Scheme Scoping	No

MA&D event group	MA&D event category	MA&D event type	Relevant technical aspect chapter(s)	Relevant to Project area?	Development phases which exacerbate vulnerability	Potential receptors	Justification for scoping in or out	Scope in?
							Boundary. During the construction phase works will be undertaken in accordance with regulatory requirements including, the Electricity at Work Regulations 1989, the Health and Safety at Work etc. Act 1974 and the Management of Health and Safety at Work Regulations 1999. This risk will also be considered in the CDM Risk Register with appropriate mitigation measures identified. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	
Technological or Manmade Hazards	Engineering accidents and failures	Property or bridge demolition accidents	N/A	No	N/A	N/A	The English Onshore Scheme does not involve any demolition works. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No
Technological or Manmade Hazards	Engineering accidents and failures	Tunnel failure/fire	N/A	No	N/A	N/A	There are no tunnel structures proposed as part of the English Onshore Scheme or within the study area. Therefore, this MA&D event type has been scoped out from further assessment in the ES.	No

National Grid plc  
National Grid House,  
Warwick Technology Park,  
Gallows Hill, Warwick.  
CV34 6DA United Kingdom

Registered in England and Wales  
No. 4031152  
[nationalgrid.com](http://nationalgrid.com)