



**AQUIND Limited**

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## **APPENDIX 5.4**

Screening for Major Accidents and Disasters



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## APPENDIX 5.4 SCREENING FOR MAJOR ACCIDENTS AND DISASTERS 1

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## APPENDIX 5.4 SCREENING FOR MAJOR ACCIDENTS AND DISASTERS

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- 1.1.1.1 This Appendix addresses the potential vulnerability of the Proposed Development to major accidents and/or disasters as required by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.
- 1.1.1.2 Schedule 4, Paragraph 8 of the EIA Regulations requires an ES to include the following:
- “A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to EU legislation such as Directive 2012/18/EU of the European Parliament and of the Council”...”or Council Directive 2009/71/Euratom”...”or UK environmental assessments may be used for this purpose provided that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.”*
- 1.1.1.3 A screening exercise has been undertaken to determine the types of major accidents and/or disasters relevant to the Proposed Development under the Regulations, these include:
- vulnerability of the development to major accidents and disasters, which may then give rise to significant adverse effects on the environment; and
  - major accidents and disasters arising from development which may give rise to significant adverse effects on the environment.
- 1.1.1.4 Where there is potential for significant environmental effects, and the major accident or disaster is screened in, these are assessed in the relevant individual chapters presented in this PEIR. The screening exercise is based on a Source-Pathway-Receptor model and considers the following:
1. Source - Likely major accidents and/or disasters using available guidance <sup>1,2</sup>.

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<sup>1</sup> Cabinet Office, 2017, National Risk Register Of Civil Emergencies

<sup>2</sup> Dawson, R.J., Thompson, D., Johns, D., Gosling, S., Chapman, L., Darch, G., Watson, G., Powrie, W., Bell, S., Paulson, K., Hughes, P., and Wood, R., 2016, UK Climate Change

2. Source - Description of the Proposed Development (the Aquind Interconnector is not within the scope<sup>of</sup> the Control of Major Accident Hazards (COMAH) Regulations).
3. Pathway – Aspects of the Proposed Development which may interact with or give rise to natural and man-made hazards.
4. Receptor – Identified environmental topics or receptors for major accidents and disasters and relevant chapter of the PEIR.

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Risk Assessment Evidence Report: Chapter 4, Infrastructure. Report prepared for the Adaptation Sub-Committee of the Committee on Climate Change, London.

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**Table 1 - Screening Exercise to determine the types of major accidents and/or disasters relevant to the Proposed Development**

<b>Accident/ Disaster Group and Type (Source)</b>	<b>Location Risk (Source)</b>	<b>Risk to phase and aspect of development (Pathway)</b>	<b>Screening for Further Consideration (Receptors)</b>
<b>Flooding – Coastal, Rivers and Streams, Surface Water and Groundwater</b>	<p>Yes – In terms of the risk of flooding, there are areas of the site located within tidal flood zones 2 and 3 adjacent to Portsea Island, although these are typically at a low probability of tidal flooding considering the existing flood defences and the site’s ground levels. In addition, there are several watercourses within the redline boundary. Land in the local vicinity of these watercourses is located within a combination of Flood Zone 2 and 3.</p> <p>Notwithstanding the parts of the site located in flood zones 2 and 3, the majority of the site is located in flood zone 1 (a low risk zone) due to the site’s elevated elevation above the rivers within the catchment. There are also isolated areas of the site located in areas of identified</p>	<p>Construction and Decommissioning of the Onshore Cable Route and Converter Station.</p>	<p>Screen in – Chapter 19: Water Resources and Flood Risk.</p>

	surface water flood risk, along or through surface water flow paths, and in isolated areas at risk of groundwater flooding.		
<b>Severe weather – Storms and gales, Cold and snow, Heatwave, Drought</b>	Yes – The site’s coastal location increases its exposure to storms and gales.	<p>Construction &amp; decommissioning – Risk of damage and/or harm during the construction of the Onshore and Offshore Cable Route and Converter Station.</p> <p>Operation – Risk of damage causing exposure of the buried Offshore Cable and damage to the Converter Station during Operation.</p>	Screen in – Chapter 27: Carbon and Climate Change.
<b>Space weather – Solar flares, Solar energetic particles, Coronal mass ejections</b>	Yes –these events may cause electricity blackouts potentially causing fatalities and physical/psychological casualties, and/or disrupt essential energy services.	Operation – Disruption of the energy supply during Operation.	Screen out - loss of functionality to proposed development only, no impact on EIA topics/ receptors.

<b>Volcanic eruptions</b>	<p>No – Volcanic eruptions occur outside the UK. The main consequence of these would potentially be ash and gas related air pollution (see below).</p>	<p>N/A</p>	<p>Screen out –No source, Volcanic activity does not occur in the UK and is not linked to the Proposed Development.</p>
<b>Poor air quality</b>	<p>Yes - Short term surges in poor air quality occur primarily due to weather conditions preventing pollution from dispersing, which can lead to fatalities, casualties, pressure on healthcare, economic damage, and environmental damage. The Onshore Cable Route will enter the Portsmouth Air Quality Management Area (AQMA).</p>	<p>Construction &amp; decommissioning– Air quality effects from traffic emissions during the construction of the Onshore Cable Route have been screened out in this EIA.</p>	<p>Screen out. Cumulative effects with external poor air quality are likely to be insignificant.</p> <p>In addition, procedures are in place for monitoring dust in Chapter 22 Air Quality.</p>
<b>Earthquakes/Ground Instability</b>	<p>No - Earthquakes in the UK are moderately frequent but rarely result in large amounts of damage and that an earthquake of sufficient intensity to inflict severe damage is unlikely. Earthquake activity is greatest at the major fault lines, which are far away from the UK. In addition, the Ground Investigation carried out in April 2018 did not indicate that the underlying geology is unsuitable for the Proposed</p>	<p>N/A</p>	<p>Screen out – no source.</p>

	Development in terms of the risk of ground instability.		
<b>Wildfires</b>	No – The risk of a wildfire is affected by the availability and dryness of fuel, e.g. vegetation. The Proposed Development is not located in areas of habitat at risk of wildfire, such as moorland or heathland.	N/A	Screen out – no source.
<b>Human diseases - e.g. influenza ('flu') pandemic</b>	Yes – The Proposed Development is located within and adjacent to a densely populated area.	None – Beyond the construction workforce, the project does not generate human interaction.	Screen out – no pathway.
<b>Animal diseases – diseases which spread from animals to humans ('zoonotic diseases') and diseases which cannot spread to humans ('non-zoonotic')</b>	Yes – There is some limited pasture in the vicinity of the Proposed Development.	None – The project does not generate interaction with animals.	Screen out – no pathway.
<b>Electricity failure</b>	Yes - Electricity failure can be caused by a number of factors, such as severe weather. Although an electricity failure across entire regions of the UK has not happened	Operation – Disruption of the energy supply during Operation.	Screen out – loss of functionality to proposed development only, no impact on EIA topics/ receptors.

	<p>before, if it were to occur, the impacts would be very severe causing widespread disruption to many critical sectors and wider society in general.</p>		<p>Whilst the probability of a region or UK wide electricity failure is low, experts consider that the risk of such a high consequence event needs to be taken very seriously<sup>3</sup>. Therefore, the Proposed Development should be designed in accordance with current best practice in terms of the risk of electricity failure.</p>
<p><b>System failures</b></p>	<p>Yes - Electricity failure is a widespread system failure and an individual risk. The risk of system failure is, therefore, considered to be similar to electricity failure.</p>	<p>Operation – Disruption of the energy supply during Operation.</p>	<p>Screen out – loss of functionality to proposed development only, no impact on EIA topics/ receptors.</p> <p>As with the risk of Electricity failure, the Proposed Development should be</p>

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<sup>3</sup> The Centre for the Study of Existential Risk, Cambridge University and The International Centre for Infrastructure Futures, 2017, “Black Sky” Infrastructure and Societal Resilience Workshop Monday 16<sup>th</sup> January 2017 Report: Introductory Session Setting the Context – Emerging Black Sky Hazards, Cambridge University, Cambridge.

			designed in accordance with current best practice to reduce the risk of system failure.
<b>Major Transport accidents</b>	<p>Yes – There is a risk of road accidents and marine accidents associated with the Proposed Development. The consequences of major transport accidents may include fatalities, disruption to essential services, disruption to business and tourism, damage to property and infrastructure and environmental contamination.</p> <p>The Proposed Development crosses the English Channel with one section of the corridor crossing the entrance of the eastbound shipping lane of the west of the Dover Strait Traffic Separation Scheme (TSS), which is one of the world’s busiest shipping lanes. Construction of the Onshore Cable utilises several road corridors and construction traffic will use the road network potentially including the A3</p>	Construction and decommissioning - Risk of road accidents during the construction of the Onshore Cable Route and Converter Station and navigational risk during construction of the Offshore cable.	Screen in – Chapter 21: Traffic and Transport, Chapter 13: Shipping, Navigation and Other Marine Users

	Motorway, A roads, B roads and unclassified roads.		
<b>Industrial and urban accidents</b>	<p>No – According to the Health and Safety Executive’s search tool for sites subject to the COMAH Regulations, there are no COMAH sites within approximately 1 kilometre of the Proposed Development.</p> <p>In addition, the Proposed Development itself would not create a major accident hazard and would not come under the COMAH Regulations.</p>	N/A	Screen out – no source.
<b>Industrial action</b>	Yes – Services generally continue but at a reduced capacity during industrial action. In addition, consequences are generally limited to disruption rather than damage.	Construction, maintenance and decommissioning of the Proposed Development is not anticipated to be undertaken by labour associated with trade unions.	Screen out - no pathway.
<b>Public disorder</b>	Yes - The Proposed Development is located within and adjacent to a densely populated area. Serious disorder in the UK has been rare,	Construction & Decommissioning – potential for minor disruption	Screen out – loss of functionality to proposed development or short delay to programme only (few days),

	<p>however a possible consequence could be damage to property and infrastructure.</p>	<p>to programme if public disorder event occurs.</p> <p>Operation – Disruption of the energy supply unlikely due to underground cable and secure rural/ secure location of substation.</p>	<p>no impact on EIA topics/ receptors, including programme dependent aspects.</p>
<p><b>Malicious Attacks - Crowded places; Transport Systems; Infrastructure; Cyber Attacks; and Chemical, biological, radiological and nuclear</b></p>	<p>Yes – The Proposed Development would form a part of the UK’s Energy Infrastructure. As such, it could be vulnerable to a malicious physical or cyber-attack. Physical attacks on infrastructure, including electricity substations, have occurred in the past. Cyber-attacks occur almost constantly and the Risk Register lists them as a top tier threat to the UK.</p>	<p>Construction &amp; Decommissioning – potential for minor disruption to programme if public disorder event occurs.</p> <p>Operation – Disruption of the energy supply unlikely due to underground cable and secure rural/ secure location of substation.</p>	<p>Screen out – The Proposed Development would not form part of the UK’s Critical National Infrastructure.</p> <p>However, Considering the Proposed Development would form part of the UK’s energy infrastructure, it should be designed in accordance with current best practice in terms of protection from malicious attack.</p>

<p><b>Unexploded ordnance</b></p>	<p>Yes – According to Zetica UXO<sup>4</sup>, the site is located in the vicinity of numerous Unexploded Ordnance (UXO) finds. Portsmouth is subject to a high bomb risk according to their data.</p>	<p>Construction and decommissioning –Onshore Cable Route and Converter Station.</p>	<p>Screen in – Chapter 18: Ground Conditions – Considering the high risk of UXO in the vicinity of a densely populated area, there is the potential for damage to receptors.</p>
<p><b>Electro-magnetic fields</b></p>	<p>Yes – The Proposed Development will produce static electric and magnetic fields.</p>	<p>Operation – Risk of public exposure to levels above those set by the UK Government.</p>	<p>Screen in – Chapter 25: Human Health.  Also see Chapter 3 Description of the Proposed Development.  A separate assessment is being prepared based on the UK voluntary Code of Practice<sup>5</sup>, which specifies that compliance should be specifically demonstrated for cables above 132 kV and</p>

<sup>4</sup> <https://zeticauxo.com/downloads-and-resources/risk-maps/>

<sup>5</sup> DECC, 2012, Power Lines: Demonstrating compliance with EMF public exposure guidelines. A Voluntary Code of Practice, Department of Energy & Climate Change: London.

			substations containing air-cored reactors.
<b>Exposure to high voltage</b>	Yes – The Proposed Development involves the transmission of high voltage electricity.	<p>Commissioning - Risk of damage and/or harm during the commissioning of the Onshore and Offshore Cable Route and Converter Station.</p> <p>Operation – Risk of damage and/or harm during operation and maintenance of the Proposed Development.</p>	Screen in – Chapter 3: Proposed Development, - The Proposed Development should be designed in accordance with current best practice to reduce the risk of damage and/or harm to people and assets to an acceptable level.