

Rampion 2 Wind Farm Category 6: Environmental Statement

Volume 2, Chapter 27: Major accidents and disasters (tracked)

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Executive Summary

It was proposed at scoping stage that as there are no significant effects associated with Major Accidents and Disasters (MA&Ds) it would be scoped out of the assessment. However, in response to a request from the Planning Inspectorate this chapter presents a description of the potential major MA&Ds scenarios either arising from or affecting the Proposed Development.

This chapter of the ES presents the non-significant effects which remain after the embedded environmental measures control the potential risk of MA&Ds, which could either affect the Proposed Development or where the Proposed Development could affect other receptors.

Rampion Extension Development (RED) has and will continue to develop a Health, Safety, Security and Environment (HSSE) Strategy to ensure that all HSSE risk is assessed. The strategy requires that risk resulting from Major Accidents and/or Disasters will be eliminated So Far As Is Reasonably Practicable (SFAIRP) and any risk which cannot be designed out will be examined to ensure the risk is reduced As Low As Reasonably Practicable (ALARP). This applies to both Major Accidents (affecting safety or the environment) and the impacts on the Proposed Development from external major accidents or disasters. The methods and processes for achieving this are described within this chapter.

A range of environmental measures are embedded as part of the Rampion 2 design to ensure there are no significant effects arising from MA&Ds.



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27. Major accidents and disasters

27.1 Introduction

27.1.1 In the Scoping Report (Rampion Extension Development Limited (RED), 2020), it was proposed to scope out Major Accidents and Disasters (MA&Ds) from consideration in the Environmental Impact Assessment (EIA) as there were no likely significant effects. In the Scoping Opinion (Planning Inspectorate, 2020a), the Planning Inspectorate (PINS) requested that the Environmental Statement (ES) contains a description and, if required, assessment of any likely significant effects of MA&Ds (please refer to **Table 27-3** which sets out relevant comments of the Planning Inspectorate Scoping Opinion).

27.1.2 This chapter of the ES presents a description of potential MA&Ds and the processes and measures which will be implemented to ensure there will be no significant effects arising from MA&Ds. It should be read in conjunction with the project description provided in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference 6.2.4) and the relevant parts of the following chapters and appendices:

- **Chapter 7: Other marine users, Volume 2** of the ES (Document Reference 6.2.7);
- **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference 6.2.13) due to potential impacts on shipping;
- **Appendix 13.1: Navigational Risk Assessment, Volume 4** of the ES (Document Reference 6.4.13.1)) due to impacts on shipping;
- **Chapter 14: Civil and military aviation, Volume 2** of the ES (Document Reference 6.2.14) due to the potential for aviation incidents involving the Proposed Development;
- **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference 6.2.22) due to the identification of ecological receptors;
- **Chapter 23: Transport, Volume 2** of the ES (Document Reference 6.2.23) due to consideration of highway safety during all project phases;
- **Chapter 25: Historic environment, Volume 2** of the ES (Document Reference 6.2.25) due to identification of sites of historical importance;
- **Chapter 26: Water environment, Volume 2** of the ES (Document Reference 6.2.26) due to consideration of flood risk;
- **Appendix 26.2: Flood risk assessment, Volume 4** of the ES (Document Reference 6.4.26.2) due to consideration of flood risk;
- **Chapter 28: Population and human health, Volume 2** of the ES (Document Reference 6.2.28) due to local human populations; ~~and~~

- [Chapter 29: Climate Change, Volume 2](#) of the ES (Document Reference 6.2.29) due to potential future hazards that may arise from change in climate; [and](#)
- [Chapter 32: ES Addendum, Volume 2 \(Document Reference 6.2.32 \[REP5-038\]\) due to consideration of highway safety during all project phases.](#)

27.1.3 This technical chapter describes:

- the legislation, planning policy and other documentation that has informed the assessment (**Section 27.2: Relevant legislation, planning policy, and other documentation**);
- the outcome of consultation and engagement that has been undertaken to date, including how matters relating to MA&Ds within the Statutory Consultation, have been addressed (**Section 27.3: Consultation and engagement**);
- the scope of the assessment for MA&Ds (**Section 27.4: Scope of the ES**);
- the methods used for the baseline data gathering (**Section 27.5: Methodology for baseline data gathering**);
- the overall baseline (**Section 27.6: Baseline conditions**);
- embedded environmental measures relevant to MA&Ds and the relevant maximum design scenario (**Section 27.7: Basis for ES**);
- the assessment methods used for the ES (**Section 27.8: Approach for ES**);
- the assessment of MA&Ds effects (**Section 27.9– 27.11: Description of effects** and **Section 27.12: Assessment of cumulative effects**);
- consideration of cumulative effects (**Section 27.12 Assessment of cumulative effects**);
- consideration of transboundary effects (**Section 27.13 Transboundary effects**);
- inter-related effects (**Section 27.14 Inter-related effects**);
- a summary of residual effects for MA&Ds (**Section 27.15: Summary of residual effects**);
- a glossary of terms and abbreviations is provided in **Section 27.16: Glossary of terms and abbreviations**; and
- a references list is provided in **Section 27.17: References**.

27.1.4 In the context of EIA for MA&Ds, the following definitions have been applied:

- a **major accident** is defined as an unintended event caused by a man-made activity or asset that leads to serious damage to receptors, either immediate or delayed;
- a **disaster** is defined as a natural occurrence that leads to serious damage to receptors, either immediate or delayed;

- **serious damage to human populations** is harm which would be considered substantial i.e., death(s), multiple serious injuries or a substantial number requiring medical attention; and
- **serious damage to the environment** is loss or significant detriment to populations of species or organisms, valued sites (including designated sites), valued cultural heritage sites (with lower thresholds for high-value or protected species or sites), contamination of drinking water supplies, ground or groundwater, or harm to environmental receptors.

27.1.5 These definitions are drawn from other UK legislation, regulation and supporting technical guidance for the purpose of assessing major accidents in the United Kingdom (UK), such as the Control of Major Accident Hazards (COMAH) Regulations (Health and Safety Executive (HSE), 2015) but have been adapted for use in EIA. Further details are provided in **Section 27.2**.

27.1.6 For the purposes of EIA, the ‘effect’ of a major accident or disaster is the risk of such an event arising, thus:

“A risk is the likelihood that a hazard will actually cause its adverse effects, together with a measure of the effect. It is a two-part concept and you have to have both parts to make sense of it.” (HSE, n.d a).

27.1.7 A significant effect resulting from a major accident or disaster is therefore the risk of a major accident or natural disaster occurring which would be intolerable when compared against the HSE Decision Making Methodology (HSE, 2001a) or benchmarked against Major Accident regulatory regimes. Consent for a project with intolerable risk should not be given without further risk reduction.

27.2 Relevant legislation, planning policy and other documentation

Introduction

27.2.1 This section identifies the relevant legislation, policy and other documentation that has informed the assessment of effects with respect to MA&Ds. Further information on policies relevant to the EIA and their status is provided in **Chapter 2: Policy and legislative context, Volume 2** of the ES (Document Reference 6.2.2).

Legislation and national planning policy

27.2.2 **Table 27-1** lists the legislation relevant to the description of the effects of MA&Ds.

Table 27-1 Legislation relevant to MA&Ds

Legislation description	Relevance to aspect
Infrastructure Planning (Environmental Impact Assessment) Regulations 2017	

Legislation description	Relevance to aspect
<p>The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the ‘EIA Regulations 2017’) require that the effects of a project, where these are likely to have a significant effect on the environment, are taken into account in the decision-making process for that project.</p> <p>The EIA Regulations 2017 indicate the process and requirements for the provision of adequate environmental information to enable the EIA process. Regulation 5 outlines the requirements of the EIA process.</p>	<p>Regulation 5 (2) outlines receptors that <i>“The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development”</i> and this includes major accidents and disasters.</p> <p>Regulation 5 (4) outlines the requirement to <i>“include, where relevant, the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development.”</i></p> <p>This chapter in Section 27.9 to 27.13 contains high-level descriptions of the types of potential major accident and disasters which could occur, and Section 27.7 describes the processes in place which ensure there are no significant effects arising from MA&Ds.</p>
<p>Health and Safety at Work etc. Act 1974 (HSWA) and regulations made thereunder</p>	
<p>The HSWA is the primary legislative instrument covering workplace health and safety in Great Britain. The HSWA establishes various obligations to ensure, so far as is reasonably practicable, that persons are not exposed to risks to their health and safety.</p> <p>The HSE, along with local authorities, are generally responsible for enforcing the HSWA. Some regulations made thereunder may have other specialist regulators such as the Environment Agency or the applicable Fire & Rescue Service.</p>	<p>Several regulations made under the HSWA place general duties on employers to assess risks and to implement controls. The overriding principle is that all reasonably foreseeable risks to persons shall be reduced so far as is reasonably practicable (SFAIRP) and that adequate evidence shall be produced to demonstrate that this has been done.</p> <p>This chapter demonstrates that the Proposed Development has suitable processes in place to ensure that their legal duty to reduce As Low As Reasonably Practicable (ALARP) and comply with good practice risk management.</p> <p>Both the COMAH Regulations 2015 and The Major Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009 are made under HSWA.</p>

Legislation description	Relevance to aspect
	<p>While neither set of regulations apply to the Proposed Development, any external sites which do are considered within this chapter.</p> <p>This also applies to other regulations such as The Major Accident Control Regulations (enacted through DSA03.OME Part 4 aka JSP 498), The Planning (Hazardous Substances) Regulation 2015, The Explosives Regulation 2014, and the Pipelines Safety Regulations 1996.</p>
<p>Construction (Design and Management) (CDM) Regulations 2015</p>	
<p>The CDM Regulations 2015 place specific duties on clients, designers and contractors, so that health and safety is considered throughout the life of a construction project from its inception to its subsequent final demolition and removal.</p>	<p>The CDM Regulations 2015 expand upon the requirements of the HSWA to apply specific requirements for construction projects.</p>
<p>The CDM Regulations 2015 include the requirement to appoint a Principal Designer and Principal Contractor to co-ordinate health and safety aspects during construction.</p>	<p>The measures explained in this chapter (Section 27.7) demonstrate how the Proposed Development will achieve the requirements and intention of the CDM Regulations 2015, which include management of construction risk to ALARP.</p>
<p>Under the CDM Regulations 2015, designers must avoid foreseeable risks so far as reasonably practicable by: eliminating hazards from the construction, cleaning, maintenance, and proposed use and demolition of a structure; reducing risks from any remaining hazard; and giving collective safety measures priority over individual measures.</p>	

27.2.3 **Table 27-2** lists the national and regional planning policy relevant to the assessment of the effects on MA&Ds receptors.

Table 27-2 National and regional planning policy relevant to MA&Ds

Policy description	Relevance to assessment
Overarching National Policy Statement for Energy (EN-1) (DESNZ, 2023a)	
<p>The Overarching NPS for Energy sets out guidance and requirements for nationally significant energy infrastructure projects.</p> <p>Although MA&Ds are not specifically mentioned, several sections of the NPS EN-1 may apply generally to the assessment of MA&Ds.</p> <p>Paragraph 4.3.7 highlights that most elements of energy infrastructure with the potential for significantly detrimental impacts are subject to specific regulations which constitutes effective mitigation.</p> <p>Section 4.12 describes the approach to reviewing safety considerations within the DCO consenting process. It states applicants should ‘<i>consult with the HSE on matters relating to safety</i>’ and makes specific requirements on sites which are anticipated to be COMAH establishments. Specifically, Paragraph 4.12.4 states that ‘the same principles’ apply to safety as to pollution control, which is a reference to Section 4.11 which states that decision making should focus on whether the development is an acceptable use of land, rather than control of processes.</p> <p>Section 4.13 makes requirements for sites requiring Hazardous Substances Consent.</p>	<p>Section 27.7 sets out the different parts of Health and Safety regulation, and the processes that RED has implemented in order to comply with them.</p> <p>Section 4.12 requires consultation with the HSE. HSE have been consulted as Statutory Consultees and description of the consultation which has taken place is described in Section 27.3</p> <p>The Proposed Development is not going to be a COMAH establishment, as it does not store or use Dangerous/Hazardous Substances in significant quantities, therefore, the specific requirements in Sections 4.12 and 4.13 do not apply.</p>
National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (DESNZ, 2023b)	
<p>Paragraphs 3.8.194 & 3.8.257 sets out that navigational risks to shipping must be reduced to ALARP.</p> <p>Paragraph 3.8.359-366 set out that the Secretary of State should not consent developments which have an intolerable</p>	<p>This item is considered in Chapter 13: Shipping and navigation, Volume 2 of the ES (Document Reference 6.2.13) and Appendix 13.1: Navigational Risk Assessment, Volume 4 of the ES (Document Reference 6.4.13.1).</p>

Policy description	Relevance to assessment
level of risk after mitigation has been implemented.	This Chapter identifies the potential impacts of third-party industry on the Proposed Development (external major accidents) and the potential for the Proposed Development to impact third-party receptors (internal major accidents) and these have been found to be not significant, i.e. not intolerable.
South Inshore and South Offshore Marine Plan (Department for Environment, Food and Rural Affairs (DEFRA), 2018)	
The South Inshore and South Offshore Marine Plan safeguards the marine environment. This plan covers from Folkestone in Kent to the River Dart in Devon.	The marine plan for the area does not include any specific policy tests for MA&Ds, however, there are general commitments to minimise the harm to marine receptors.

- 27.2.4 The National Policy Statement for Electricity Network Infrastructure (EN-5) (DESNZ, 2023c) has also been reissued, but other than the same requirements for Good Design and specific references to some good practice standards, it makes no specific provisions in relation to Major Accidents and Disasters.

Local planning policy

- 27.2.5 There are no relevant local planning policies for MA&Ds.

Other relevant information and guidance

- 27.2.6 A summary of other relevant information and guidance relevant to MA&Ds is provided here:
- *Environmental Impact Assessment of Projects, Guidance on the Preparation of the Environmental Impact Assessment Report* (European Commission, 2017). Guidance on how to develop a good quality environmental impact report to ensure appropriate information is available for decision making purposes. Section 1.3.3 of the document relates to the impacts of MA&Ds and outlines key considerations including the use of risk-based significance criteria.
 - *Guidelines for Environmental Risk Assessment and Management Green Leaves III* (Defra, 2011). The guidance has been used to inform the development of the assessment methodology. In particular, the source-pathway-receptor model has been adopted.
 - *Environmental Risk Tolerability for COMAH establishments* (Chemical and Downstream Oil Industries Forum (CDOIF), 2016). This guidance, on the assessment of harm and tolerability of major accidents to the environment, has been established in relation to COMAH sites. The guidance informs the

thresholds of a major accident for environmental receptors (building on the Department for Environment Transport and the Regions (DETR), 1999) guidance listed below).

- *Chapter 4 Local responder risk assessment duty, Revision to Emergency Preparedness* (Cabinet Office, 2012). The guidance sets out requirements for risk assessment of emergencies (which include MA&Ds) by Local Resilience Forums (LRFs). It has been used to inform the harm criteria for human receptors.
- *Guidance on the Interpretation of Major Accidents to the Environment for the purposes of COMAH Regulations* (DETR, 1999). The guidance informs the thresholds of a major accident for environmental receptors.
- *Planning Inspectorate's Advice Note 11 Annex G – The Health and Safety Executive* (Planning Inspectorate, 2017a). The Advice Note describes role of the HSE in Land Use Planning and NSIPs in relation to MA&Ds. Specifically, the Advice Note refers to requirements of the Land Use Planning process and COMAH, as well as stating that HSE will not generally review risk assessments undertaken the support HSWA.
- *Reducing Risks Protecting People (R2P2)* (HSE, 2001a). The guidance describes the basis and criteria on which the HSE's decision making process is based. The tolerability criteria for risk to people set out in R2P2, including the aversion for large numbers of casualties resulting from single incidents, have been used to derive the qualitative criteria for assessing the significance of effects on people arising from MA&Ds.
- *Major Accidents and Disasters in EIA: A Primer (Institute of Environmental Management and Assessment (IEMA), 2020)*. This guidance provides several approaches which are considered to represent good practice in MA&Ds assessment. It provides example definitions and considerations which are broadly aligned to those used in this chapter.

27.3 Consultation and engagement

Overview

- 27.3.1 This section describes the stakeholder engagement undertaken for Rampion 2. This consists of early engagement, the outcome of, and response to, the Scoping Opinion (Planning Inspectorate, 2020a) in relation to the MA&Ds assessment, the Evidence Plan Process (EPP), non-statutory consultation and Rampion 2's statutory consultation. An overview of consultation and engagement undertaken for Rampion 2 relevant to the EIA is outlined in [Section 5.4 of Chapter 5: Approach to the EIA, Volume 2](#) of the ES (Document Reference 6.2.5).
- 27.3.2 Given the social distancing restrictions which have been in place due to the COVID-19 pandemic from 2020 to 2022, technical consultation relating to MA&Ds has taken place online, primarily in the form of conference calls using Microsoft Teams.

Scoping Opinion

- 27.3.3 RED submitted a Scoping Report (RED, 2020) and request for a Scoping Opinion to the Secretary of State (administered by the Planning Inspectorate) on 2 July 2020. A Scoping Opinion was received on 11 August 2020 (Planning Inspectorate, 2020a). The Scoping Report (RED, 2020) set out to scope out the MA&Ds assessment. **Table 27-3** sets out the comments received in Section 5 of the Planning Inspectorate Scoping Opinion (2020a) '*Aspect based scoping tables – Onshore*' and how these have been addressed in this ES. A full list of the Planning Inspectorate Scoping Opinion comments and responses is provided in **Appendix 5.2: Response to the Scoping Opinion, Volume 4** of the ES (Document Reference 6.4.5.2). Regard has also been given to other stakeholder comments that were received in relation to the Scoping Report.
- 27.3.4 It is worth noting that only three stakeholders commented specifically on MA&Ds, and none of them explicitly objected to the scoping out of MA&Ds:
- West Sussex County Council (WSCC) stated that MA&Ds did not require a standalone assessment chapter.
 - Public Health England (PHE) stated that they expected the potential hazards and the risk management measures to be included within the ES. These items are given consideration in **Section 27.9 to 27.11** and **Section 27.7**. PHE also stated that the COMAH Regulations (2015) and Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations (2009) should be considered within the ES. These legislations are discussed in **Section 27.6**, although it should be noted that no part of the Proposed Development will be subject to these legislations.
 - The HSE provided information related to three Major Accident Hazard sites and pipelines but provided limited further comment. The HSE response in the Scoping Opinion (Planning Inspectorate, 2020a) relates to the larger area encompassed by the Scoping Boundary upon which the Scoping Report is based and therefore coverage is for a larger area than that covered by the onshore part of the proposed DCO Order Limits. Major Accident Hazard sites store, process or transport hazardous substances such as chemicals, natural gas or explosives and are subject to specific regulations in the UK. Planning restrictions and constraints, and consultation distances apply within specific zones around the sites for developments to ensure safety is maintained.

Table 27-3 Planning Inspectorate Scoping Opinion responses – major accidents and disasters

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
3.3.20	<p>Risks of Major Accidents and/or Disasters</p> <p>The ES should include a description and assessment (where relevant) of the likely significant</p>	<p>This chapter provides a description of the potential MA&Ds in Section 27.9 to 27.11.</p>

Planning Inspectorate ID number	Scoping Opinion comment	How this is addressed in this ES
	<p>effects resulting from accidents and disasters applicable to the Proposed Development.</p> <p>The Applicant should make use of appropriate guidance (e.g., that referenced in the Health and Safety Executives (HSE) Annex to Advice Note 11) to better understand the likelihood of an occurrence and the Proposed Development's susceptibility to potential major accidents and hazards.</p> <p>The description and assessment should consider the vulnerability of the Proposed Development to a potential accident or disaster and also the Proposed Development's potential to cause an accident or disaster. The assessment should specifically assess significant effects resulting from the risks to human health, cultural heritage or the environment.</p> <p>Any measures that will be employed to prevent and control significant effects should be presented in the ES.</p>	<p>The approach proposed in Annex G of Advice Note 11 (Planning Inspectorate, 2017) is followed in Section 27.7.</p> <p>The vulnerability of the Proposed Development is described at a high level in Section 27.10 and Section 27.11.</p> <p>There are no significant effects considered likely to arise from major accidents and disasters on the basis of the embedded environmental measures (Table 27-9). The description of these potential major accidents is included in Section 27.9 to 27.11.</p> <p>The embedded environmental measures employed to prevent any significant effects are described in Section 27.7.</p>

Evidence Plan Process (EPP)

- 27.3.5 The EPP has been set up to provide a formal, non-legally binding, independently chaired forum to agree the scope of the EIA and Habitats regulations Assessment (HRA), and the evidence required to support the DCO Application. The EPP commenced in January 2020 and has continued throughout the EIA helping to inform the ES.
- 27.3.6 Further information is provided in the [Evidence Plan](#) (Document Reference 7.21).

Non-statutory consultation

Overview

- 27.3.7 Non-statutory consultation captures all consultation and engagement outside of statutory consultation and has been ongoing with a number of prescribed and non-prescribed consultation bodies and local authorities in relation to MA&Ds. A summary of the non-statutory consultation undertaken since completion of the Scoping Report is outlined in this section.
- 27.3.8 RED has engaged with HSE and the relevant Hazardous Substance Authority to determine the location, and operational and future status of the only relevant Major Accident Hazard site known as Aerosol Manufacturing plc. This site was identified by HSE in its response to the Scoping Report (RED, 2020), as it was located within the Scoping Boundary and therefore could be located in close proximity to the onshore part of the Proposed Development.
- 27.3.9 RED subsequently approached the four Hazardous Substances Authorities which cover the area (West Sussex County Council, Arun District Council, Horsham District Council, and Mid Sussex District Council) to determine the status of this site (Aerosol Manufacturing plc). Horsham District Council subsequently confirmed on 05 December 2022 that they had issued a consent for this site to the land on the Star Trading Estate in Partridge Green and the consent was still valid. Although it is unclear if this land is still being used for the storage of hazardous substances, a 150m consultation distance applies around this site. The proposed DCO Order Limits are entirely outside of this consultation zone and therefore it is not likely to affect the Proposed Development.
- 27.3.10 In the process of implementing the embedded environmental measures outlined in **Section 27.7**, RED will be engaging with stakeholders and regulators including the HSE, Maritime and Coastguard Agency (MCA) and the Environment Agency.

Non-statutory consultation exercise – January / February 2021

- 27.3.11 RED carried out a non-statutory consultation exercise for a period of four weeks from 14 January 2021 to 11 February 2021. This non-statutory consultation exercise aimed to engage with a range of stakeholders including the prescribed and non-prescribed consultation bodies, local authorities, Parish Councils and general public with a view to introducing the Proposed Development and seeking early feedback on the emerging designs.
- 27.3.12 There were no key themes emerging from the non-statutory consultation exercise in January 2021 relating to MA&Ds.
- 27.3.13 Further detail about the results of the non-statutory consultation exercise can be found in the **Consultation Report** (Document Reference 5.1).

Statutory Consultation exercises

First Statutory Consultation exercise – July to September 2021

- 27.3.14 Rampion 2’s first Statutory Consultation exercise ran from 14 July to 16 September 2021 for a period of nine weeks. The Preliminary Environmental Information Report (PEIR) (RED, 2021) was published as part of Rampion 2’s first statutory consultation exercise which provided preliminary information on MA&Ds within Chapter 28 of the PEIR: Major accidents and disasters.
- 27.3.15 **Table 27-4** provides a summary of the key themes of the feedback received in the first Statutory Consultation exercise in 2021 in relation to MA&Ds and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the first statutory consultation exercise in 2021 and the response to those comments is provided in the **Consultation Report** (Document Reference 5.1).

Table 27-4 First Statutory Consultation exercise (July – September 2021) feedback

Stakeholder	Theme	How this is addressed in this ES
Historic England	We therefore look forward to seeing how the ES will consider the statement made in EN-1, paragraph 5.3.15 that “...proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design.” For example, in recognition of how this project occurs in a known area of palaeo-environmental interest. Furthermore, in reference to mitigation EN-1 states that action to reduce harmful effects should apply “good design principles”. EN-1, Paragraph 4.5.1 mentions “Applying “good design” to energy projects should produce sustainable infrastructure sensitive to place.” We recommend that the term “place” is informed by the concept of “place” as used within Historic England’s Conservation Principles (Historic England, 2008). We therefore look forward to seeing how this will be assessed and how mitigation will be proposed in any ES produced.	<p>Effects on biodiversity are described in Chapter 22: Terrestrial ecology and nature conservation, Volume 2 of the ES (Document Reference 6.2.22).</p> <p>Effects on geological features are described in Chapter 6: Coastal processes, Volume 2 of the ES (Document Reference 6.2.6) (offshore) and Chapter 24: Ground conditions, Volume 2 of the ES (Document Reference 6.2.24) (onshore).</p> <p>Good design in relation to ‘place’ is described in Chapter 18: Landscape and visual impact, Volume 2 of the ES (Document Reference 6.2.18).</p> <p>Good design in relation to the management of MA&Ds risk means ensuring that the risk of harm is reduced to ALARP. How this will be achieved within the Proposed Development is</p>

Stakeholder	Theme	How this is addressed in this ES
		described further in Section 27.7 .
	<p>It is also relevant to see the attention given to the published South Marine Plans and what you described as “general commitments to minimise the harm to marine receptors”. It would seem however that this does not give sufficient attention to how minimisation of harm is expressed in these plans. Specifically, in the text of the published policy for cultural heritage S-HER-1, as necessary to deliver plan Objective 8 “To identify and conserve heritage assets that are significant to the historic environment of the south marine plan areas.”</p>	<p>It is noted that the definition of a major accident excludes items which are intended or expected effects of the Proposed Development as this would not be considered an ‘accident’. For matters relating to protection of marine heritage assets, see Chapter 16: Marine archaeology, Volume 2 of the ES (Document Reference 6.2.16).</p>
	<p>Table 27-4 (Planning Inspectorate scoping opinion responses – major accidents and disasters) includes text that states “<i>There are no significant effects considered likely to arise from major accidents and disasters on the basis of the embedded environmental Measures</i>” which in paragraph 28.3.5 refers to MCA and Environment Agency.</p> <p>While we appreciate the legal obligations you will be under to report any wreck encountered to the Receiver of Wreck (within MCA) as required by the Merchant Shipping Act 1995. We add that it has yet to be determined how you might prevent accident(s) to cultural heritage occurring as the proposed mitigation mechanism is based on reporting after any possible destructive action caused by the proposed development has occurred. The statement made in paragraph 28.4.4 requires further explanation within the ES as it appears that despite the PINs</p>	<p>RED proposed to scope the assessment of MA&Ds out of further consideration in the Scoping Report (RED, 2020). This was on the basis that there were no likely significant effects. It is noted that Historic England did not object to this position in response to the Planning Inspectorate (Ref: AH32).</p> <p>Neither the Planning Inspectorate, nor any other stakeholder commented with respect to the scoping out MA&Ds from further assessment.</p> <p>Chapter 16: Marine Archaeology, Volume 2 of the ES (Document Reference 6.2.16) and Chapter 25: Historic environment, Volume 2 of the ES (Document Reference 6.2.25) describe the measures in place to identify previously unknown heritage</p>

Stakeholder	Theme	How this is addressed in this ES
	<p>Scoping Opinion, this topic is now “scoped out of further assessment”.</p>	<p>receptors in proposed construction areas (offshore and onshore), and how these will be treated if present.</p> <p>RED’s obligations under the Merchant Shipping Act 1995 are acknowledged.</p>
	<p>Table 27-6 (Receptors requiring assessment for MA&Ds) includes only a few categories of designated heritage assets, which is insufficient if the consideration of risk is extended to harm as might be caused to Registered Parks and Gardens and other sites that may qualify for designation, but are presently unknown. We add also that should this project encounter any known or presently unknown crashed military aircraft that such sites will be automatically afforded Protected Place status under the Protection of Military Remains Act 1986.</p> <p>Table 27-8 (Major accident threshold by receptor type) it is our advice that the description of ‘major accident/disaster threshold’ that the statement “Damage sufficient for designation of importance to be withdrawn” should be expanded to include heritage assets sufficiently disturbed, damaged or destroyed that prevents designation.</p>	<p>The MA&Ds criteria are drawn from and aligned to government (DETR, 1999) and joint regulator / industry (CDOIF, 2016) guidance. These criteria are widely applied to all operational COMAH establishments in the UK. The guidance is clear that only damage to Grade I listed buildings, Scheduled Monuments or Conservation areas is to be considered a major accident. This has been expanded to consider Grade 2* listed buildings for the purpose of EIA.</p> <p>Chapters 16: Marine archaeology, Volume 2 of the ES (Document Reference 6.2.16 and Chapter 25: Historic environment, Volume 2 of the ES (Document Reference 6.2.25) describe the measures in place to identify previously unknown heritage receptors in proposed construction areas, and how these will be treated if present.</p> <p>In line with the approach taken for ecologically designated sites, where a particular receptor is identified as a candidate or potential designated site (e.g., nominated for Grade 1 listing), it will be treated as such.</p>

Stakeholder	Theme	How this is addressed in this ES
		<p>It should be acknowledged that a major accident is very unlikely to occur during the course of the Proposed Development.</p> <p>Different criteria are applied to effects which are considered likely to occur as a result of the Project and these aspects are covered in Chapter 25: Historic environment, Volume 2 of the ES of the ES (Document Reference 6.2.25).</p> <p>The Projects obligations under the Protection of Military Remains Act 1986. are acknowledged.</p>
	<p>Table 27-9 (Relevant major accidents and disaster embedded environmental measures) it states that “Where practical, sensitive sites will be avoided” (e.g., C-6), we therefore request that any ES expands on the caveat of “where practical” as sufficient to still represent viable “embedded” mitigation. For example, in C-75 mention is made of a “sequential approach to siting of infrastructure and passing the Exception Test where appropriate”.</p>	<p>The design change process considers a variety of factors including environmental, commercial and engineering constraints. This measure is intended to embed the principle that separation between the Proposed Development and sensitive receptors is a stronger form of mitigation. The design change process and alternatives considered are given in Chapter 3: Alternatives, Volume 2 of the ES (Document Reference 6.2.3).</p>
	<p>Paragraph 28.7.18 mentions “Other measures can be specified to prevent harm at design stage”, the ES should expand on this point for example if “other measures” are considered inclusive of pre-construction survey, evaluation and sampling to ascertain presence of any heritage assets, as might be present and therefore to determine whether or not an avoidance strategy can be adopted.</p>	<p>The measures employed to protect heritage assets during construction are discussed in Chapter 25: Historic environment, Volume 2 of the ES (Document Reference 6.2.25).</p>

Stakeholder	Theme	How this is addressed in this ES
	<p>Under “Offshore major accidents” we suggest that the equivalent chapter in the ES appropriately cross-references other chapters etc that provide the risk strategy for dealing with Unexploded Ordnance (UXO).</p> <p>For example, it seems the UXO risk is only considered in terrestrial context (paragraph 28.10.2) and it would seem that such assessment was equally applicable in a marine context.</p>	<p>Offshore UXO is considered within Section 27.10. Consent for the specific removal of UXO will be sought under a future marine license application, and this will be based upon a UXO strategy developed in line with the measures proposed in Section 27.7.</p>
	<p>The attention given in paragraph 28.11.9 regarding survey to inform suitable foundation is design should also include full assessment of accidental impact to presently unknown elements of the historic environment as might be present. The collation of data to support this assessment is crucial if this project is to avoid substantial harm to cultural heritage.</p>	<p>For matters relating to protection of marine heritage assets, see Chapter 16: Marine archaeology, Volume 2 of the ES (Document Reference 6.2.16).</p>
27.3.16	<p>Following feedback to the first Statutory Consultation exercise in 2021 and after further analysis, it was identified that some coastal residents did not receive consultation leaflets as intended. Therefore, the first Statutory Consultation was reopened between 7 February 2022 to 11 April 2022 for a further nine weeks. No feedback or comments were received from the reopened first Statutory Consultation in relation to MA&Ds.</p>	
<p>Second Statutory Consultation exercise – October to November 2022</p>		
27.3.17	<p>The second Statutory Consultation exercise was undertaken from 18 October 2022 to 29 November 2022. This was a targeted consultation which focused on updates to the onshore cable route proposals which were being considered following feedback from consultation and further engineering and environmental works. As part of this second Statutory Consultation exercise, RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward in the DCO Application.</p>	
27.3.18	<p>Table 27-5 provides a summary of the key themes of the feedback received in the second statutory consultation exercise in 2022 relation to MA&Ds and outlines how the feedback has been considered in this ES chapter. A full list of all comments received during the second Statutory Consultation exercise in 2022 and</p>	

the responses to those comments is provided in the **Consultation Report** (Document Reference 5.1).

Table 27-5 Second Statutory Consultation exercise (October – November 2022) feedback

Stakeholder	Theme	How this is addressed in this ES
HSE	<p><i>“According to HSE's records the proposed DCO application boundary corridor for the onshore element of the works for this Nationally Significant Infrastructure Project falls into the inner, middle and outer zones of a number of Major Accident Hazard Pipelines. This is based on the plans contained in “Rampion 2 Second Round of Statutory Consultation: Potential Onshore Cable Route Changes” which is found at Fact Sheets A4 portrait V17 - A3 landscape [sic] double A4 pages (for screen viewing) copy (rampion2.com). The Major Accident Hazard Pipelines are: Pipelines: 8037, 8043 and 8044. These pipelines are operated by Southern Gas Network Limited. The Applicant should make the necessary approaches to the relevant pipeline operator. There are three particular reasons for this:</i></p> <p><i>i) the pipeline operator may have a legal interest in developments in the vicinity of the pipeline. This may restrict developments within a certain proximity of the pipeline.</i></p> <p><i>ii) the standards to which the pipeline is designed and operated may restrict major traffic routes within a certain proximity of the pipeline. Consequently, there may be a need for the operator to modify the pipeline or its operation, if the development proceeds.</i></p> <p><i>iii) to establish the necessary measures required to alter/upgrade the pipeline to appropriate standards.”</i></p>	<p>RED has already undertaken extensive engagement with Southern Gas Networks Limited and all other relevant utility providers to ensure a suitable design for works in proximity to existing assets especially high-pressure gas pipelines.</p> <p>The approach to these works will be agreed with the relevant operator prior to being undertaken.</p> <p>Wherever possible, the Proposed Development has minimised the population for working in proximity to these pipelines but some temporary construction compounds will be required where these pipelines are to be crossed using trenchless techniques.</p>

Stakeholder	Theme	How this is addressed in this ES
	<p><i>“HSE’s Land Use Planning advice is dependent on the location of areas where people may be present. Based on the information in “Rampion 2 Second Round of Statutory Consultation: Potential Onshore Cable Route Changes” which is found at Fact Sheets A4 portrait V17 - A3 landscape [sic] double A4 pages (for screen viewing) copy (rampion2.com), it is unlikely that HSE would advise against the development.”</i></p>	<p>This is noted. Embedded measure C-173 has been included to take account of HSE’s approach to Land Use Planning, and the Proposed Development will be designed to ensure that a response of 'Do Not Advise Against' is received from the HSE.</p>
	<p><i>“With regards to Areas 1, 4, 5, 6 and 7, HSE has no comment to make as there are no licensed explosives in the vicinity.</i></p> <p><i>With regards to Areas 2 and 3 there is an explosive site in the vicinity and HSE may need to review the appropriateness of the existing licence if this development were to proceed as planned and access routes to support the laying of the cable and any buildings used to house construction workers or their equipment were to be within the safeguarding distance of the explosives site.</i></p> <p><i>The developer might want to consider consulting the site to identify the potential consequences for the cable (if it is critical infrastructure) from the explosives on-site, including initial ground shock and cratering and any secondary ground shock and cratering that might result from secondary events associated with an incident.”</i></p>	<p>This site has been identified as Wells Fireworks Ltd operating out of Home Farm at Wepham, BN18 9RA. The HSE Planning Advice Web App (HSE, 2023) indicates that this licensed site has a safeguarding distance of approximately 275m.</p> <p>While the onshore cable corridor presented in the PEIR (RED, 2021) passed in close proximity to this site, the onshore cable route has subsequently evolved such that the proposed DCO Order Limits avoid this location entirely. The nearest point to the proposed DCO Order Limits is approximately 850m to an access, with the nearest temporary construction compound located over 2km to the east.</p> <p>This site is therefore discounted from further consideration.</p>

Third Statutory Consultation exercise – February to March 2023

- 27.3.19 The third Statutory Consultation exercise was undertaken from 24 February 2023 to 27 March 2023. This was a targeted consultation which focused on a further single onshore cable route alternative being considered following feedback from

consultation and further engineering and environmental works. As part of this third Statutory Consultation exercise, RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward to DCO Application.

- 27.3.20 There were no key themes emerging from Rampion 2's third Statutory Consultation exercise in April 2023 specifically relating to MADs.
- 27.3.21 A full list of all comments received during the third Statutory Consultation exercise in 2023 and the responses to those comments is provided in the [Consultation Report](#) (Document Reference 5.1).

Fourth Statutory Consultation exercise – April to May 2023

- 27.3.22 The fourth Statutory Consultation exercise was undertaken from 28 April 2023 to 30 May 2023. This was a targeted consultation which focused on the proposed extension works to the existing National Grid Bolney substation to facilitate the connection of the Rampion 2 onshore cable route into the national grid electricity infrastructure. As part of this fourth Statutory Consultation exercise, RED sought feedback on the proposed substation extension works to inform the onshore design taken forward to the DCO Application.
- 27.3.23 There were no key themes emerging from Rampion 2's fourth Statutory Consultation exercise in April 2023 specifically relating to MADs.
- 27.3.24 A full list of all comments received during the fourth Statutory Consultation exercise in 2023 and the responses to those comments is provided in the [Consultation Report](#) (Document Reference 5.1).

27.4 Scope of the ES

Overview

- 27.4.1 This section sets out the scope of the ES for the effects of MA&Ds described. This scope has been developed as Rampion 2 design has evolved and responds to feedback received to-date as set out in **Section 27.3**.
- 27.4.2 The Scoping Report (RED, 2020) proposed to scope out MA&Ds on the basis that they were adequately controlled. The Planning Inspectorate requested that a description of any likely significant effects resulting from MA&Ds is included in the ES. The information provided in this ES chapter is intended to demonstrate that the risk of MA&Ds will be managed and reduced through the application of embedded environmental measures to ensure there are no significant effects as the result of the Proposed Development.
- 27.4.3 The potential for cumulative effects has been described in **Section 27.12**.

Spatial scope and study area

- 27.4.4 As MA&Ds are scoped out of further assessment, no formal study area has been defined. The potential MA&Ds described in **Section 27.9** to **Section 27.11**, outline the presence of anticipated credible receptor populations in vicinity of the potential

sources. However, the framework described in **Section 27.7** is designed to manage the risk of major accidents at source, including by influencing the design to eliminate or separate the hazards from potential receptors. The framework described in **Section 27.7** will manage the risk of disasters affecting the project through appropriate design and operational measures.

- 27.4.5 This ES chapter considers external sites holding hazardous materials sites with Hazards Substance Consent (including COMAH sites), licensed explosives sites and Major Accident Control Regulations (MACR) sites which could potentially influence the Proposed Development. Sites of these types will typically have land use planning restrictions applied which take the form of consultation zones. Those sites with consultation zones which could impact upon the site have been identified and described in **Section 27.6**.

Temporal scope

- 27.4.6 The temporal scope of the description of effects of MA&Ds is the entire lifetime of Rampion 2, which therefore covers the construction, operation and maintenance, and decommissioning phases.

Potential receptors

- 27.4.7 The spatial and temporal scope of the description of effects of MA&Ds enables the identification of receptors which may experience a change as a result of Rampion 2. The receptors identified that may experience likely significant effects from MA&Ds are outlined in **Table 27-6** in line with the definition provided in **Section 27.1**.

Table 27-6 Receptors relevant for MA&Ds

Receptor group	Receptors included within group
Population and human health	Construction workers, operations and maintenance workers, residential settlements and vulnerable receptors such as hospitals, schools and care homes.
Designated Sites (International, National and Other)	Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Marine Conservation Zones (MCZs), National Parks, Environmentally Sensitive Areas (ESAs), Areas of Outstanding Natural Beauty (AONBs), Green Belt Land, Local Nature Reserves (LNRs), Local Wildlife Sites (LWSs) also known locally as County Wildlife Site, Sites of Importance for Nature Conservation (SINCs), and Sites of Nature Conservation Importance (SNICIs).
Scarce Habitats	Biodiversity Action Plan (BAP) habitats and Habitats of Principal Importance (HPI).

Receptor group	Receptors included within group
Widespread habitat	Land/water used for agriculture, forestry, fishing or aquaculture.
Particular species	Particular species covers all species, both plant and animal, found in the UK and includes common species, red data book species and other protected or priority species, including rare species.
Marine environment	Non-estuarine marine waters, sub-littoral zones, benthic community adjacent to the coast and fish spawning grounds.
Fresh and estuarine water habitat	Surface water such as streams, ponds, rivers, canals, reservoirs, estuaries and lakes.
Groundwater source (drinking water)	Drinking water sources (Source Protection Zones (SPZs)) in or under the soil.
Groundwater source (non-drinking water)	Non-drinking water sources such as aquifers under the soil.
Soil or sediment	Soil and sediments in the top metre of ground or under the water column not otherwise considered above.
Built environment (designated buildings/sites)	Grade I/II* listed buildings, Scheduled Monuments and Conservation Areas.

Major accident criteria

27.4.8 **Table 27-7** provides the level of harm which is considered to represent a major accident or disaster where the harm is anything other than short term. So, any level of harm which is less than that given in **Table 27-7** is discounted as it is not considered to be a major accident or disaster under commonly accepted major accident criteria drawn from standard industry practice endorsed by the HSE and the Environment Agency (CDOIF, 2016), (HSE, 2001b). The criteria are set at different levels based upon the relative sensitivity and scarcity of the receptors.

Table 27-7 Major accident threshold by receptor type

Receptor type	Major accident/disaster threshold
Population and Human Health - Human populations (public)	<p>Substantial number (5+) of people requiring medical attention or any life-changing injuries/fatalities.</p> <p>Events of this magnitude may also involve some damage to housing, with low numbers of people being displaced. Potential for localised interruption to utilities and damage to infrastructure.</p>

Receptor type	Major accident/disaster threshold
Population and Human Health - Human populations (workers)	Multiple life changing injuries or fatalities.
Designated land or water sites (internationally important)	>0.5 hectares (ha) or 5-25% of site area or 5-25% of associated linear feature or population.
Designated land or water sites (nationally important)	>0.5 ha or 10-50% of site area, associated linear feature or population.
Other designated land	10-100 ha or 10-50% of land.
Scarce habitat	2-20 ha or 10-50% of habitat.
Widespread habitat – non-designated land	Contamination of 10-100 ha of land, preventing growing of crops, grazing of domestic animals or renders the area inaccessible to the public because of possible skin contact with dangerous substances. Alternatively, contamination of 10ha or more of vacant land.
Widespread habitat – non-designated water	Contamination of aquatic habitat which prevents fishing or aquaculture or renders it inaccessible to the public.
Particular species (these criteria apply nationally)	Loss of 1-10% of animal or 5-50% of plant ground cover.
Marine	2-20ha littoral or sub-littoral zone, 100-1,000ha of open sea benthic community, 100-1,000 dead sea birds (500-5,000 gulls), 5-50 dead or significantly impaired sea mammals.
Fresh and estuarine water habitats	Water Framework Directive (WFD) (European Commission, 2000) chemical or ecological status lowered by one class for 2-10km of watercourse or 2-20ha or 10-50% area of estuaries or ponds. Interruption of drinking water supplies, as per Groundwater Source of Drinking Water.
Groundwater source of drinking water	Interruption of drinking water supplied from a ground or surface source (where persons affected x duration in hours [at least 2] >1,000) or for England and Wales only 1-10ha of SPZ where drinking water standards are breached.
Groundwater – non-drinking water source	1-100ha of aquifer where water quality standards are breached (or hazardous substance is discernible).

Receptor type	Major accident/disaster threshold
Soil or sediment (i.e., as receptor rather than purely a pathway)	Contamination of 10-100ha of land etc. as per widespread habitat; contamination sufficient to be deemed environmental damage (Environmental Liability Directive).
Built environment (designated buildings/sites)	Damage sufficient for designation of importance to be withdrawn.

Potential effects

- 27.4.9 As stated in the Scoping Report (RED, 2020), all potential effects have been scoped out from further assessment, as it has been concluded there are no likely significant effects. These conclusions have been made based on knowledge of the baseline environment, and the nature of planned works including the embedded environmental measures, and the wealth of evidence on the potential for impacts from offshore wind and power transmission projects more widely.
- 27.4.10 The vulnerability of the Proposed Development to a potential major accident or disaster and also the Proposed Development's potential to cause a major accident have both been identified and considered within this chapter. As described in the Scoping Report (RED, 2020), the risk of these events is considered so low, as to not be considered significant.
- 27.4.11 **Section 27.7** provides a description of the comprehensive framework that RED utilises and will utilise to ensure that there are no significant effects throughout the Proposed Development lifecycle.
- 27.4.12 A description of the potential major accident and disasters identified (as requested by Planning Inspectorate) and how some of the embedded environmental measures will be enacted is given in **Sections 27.9** to **Section 27.11**.
- 27.4.13 Effects have not been considered or documented further where they do not represent either a major accident or disaster, based on the definitions in this chapter. This could be because:
- the potential consequences do not meet the threshold or definition of a major accident or disaster;
 - where the Proposed Development does not materially alter the risk of a major accident or disaster occurring;
 - there is either no credible pathway or receptor; or
 - the accident involves a workplace hazard, which can only impact the workers undertaking the task such as falls from height or mis-use of tools. This is considered to be an occupational health and safety incident which is managed through compliance with the Management of Health and Safety at Work Regulations (1999) and not the intended purpose of EIA.

Activities or impacts scoped out of assessment

- 27.4.14 As stated in the Scoping Report (RED, 2020), all potential effects have been scoped out from further assessment, as it has been concluded there are no likely significant effects. These conclusions have been made based on knowledge of the baseline environment, and the nature of planned works including the embedded environmental measures, and the wealth of evidence on the potential for impacts from offshore wind and power transmission projects more widely.

27.5 Methodology for baseline data gathering

Overview

- 27.5.1 Baseline data collection has been undertaken to obtain information over the study areas described in **Section 27.4: Scope of the ES**. The current baseline conditions presented in **Section 27.6: Baseline conditions** set out currently available information. No specific survey data has been collected for MA&Ds.

Desk study

- 27.5.2 The data sources that have been collected and used to inform this MA&Ds chapter are summarised in **Table 27-8**.

Table 27-8 Data sources used to inform the MA&Ds ES

Source	Date	Summary	Coverage of data
HSE	28 July 2020	Response to Scoping Report covering Major Accident Hazard Sites, and Explosives sites.	Scoping Boundary provided in Scoping Report (RED, 2020).
Companies House	26 January 2021	Searches relating to Aerosol Manufacturing plc.	N/A

Data limitations

- 27.5.3 The status of a potential Major Accident Hazard site known as Aerosol Manufacturing plc is unknown as the legal entity that holds the consent does not currently exist. The embedded environmental measure (C-173) given in **Table 27-9**, ensures that there is no significant risk of a major accident from this site (if it still exists) affecting the Proposed Development.
- 27.5.4 There are no further data limitations relating to MA&Ds that affect the robustness of this ES.

27.6 Baseline conditions

Current baseline

- 27.6.1 As MA&Ds is scoped out of further assessment in the EIA, only a limited amount of relevant baseline information has been gathered in order to facilitate the description of the (non-significant) potential MA&Ds requested by the Planning Inspectorate.
- 27.6.2 The receptor baseline for MA&Ds is as described in other ES chapters including:
- **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference 6.2.13);
 - **Chapter 16: Marine archaeology, Volume 2** of the ES (Document Reference 6.2.16);
 - **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference 6.2.22);
 - **Chapter 23: Transport, Volume 2** of the ES (Document Reference 6.2.23);
 - **Chapter 25: Historic environment, Volume 2** of the ES (Document Reference 6.2.25);
 - **Chapter 26: Water environment, Volume 2** of the ES (Document Reference 6.2.26); ~~and~~
 - **Chapter 28: Population and human health, Volume 2** of the ES (Document Reference 6.2.28); and
 - **Chapter 32: ES Addendum, Volume 2 of the ES (Document Reference: 6.2.32) [REP5-038].**
- 27.6.3 A variety of factors will need to be accounted for in the final design of the Proposed Development. These include geological factors, seabed terrain, shipping traffic and onshore hydrogeology. These factors will be determined as required throughout the design process and a suitable design will be engineered to minimise the risk of MA&Ds. The incidence and severity of environmental, atmospheric and meteorological conditions will be defined as part of the Proposed Development design requirements. The Proposed Development design requirements will account for the anticipated worst-case environmental conditions foreseeable throughout the Proposed Development lifecycle.
- 27.6.4 The HSE identified two Major Accident Hazard Pipelines and one site in their contribution to the Scoping Opinion (Planning Inspectorate, 2020a). These are:
- two pipelines operated by Southern Gas Networks, one between Henfield and Crossbush, and the other between Mogador and Dyke. The requirements to safely cross these pipelines (and any other utilities) will be considered as part of the design process; and
 - a Major Accident Hazard site operated by Aerosol Manufacturing plc. This site does not exist on the HSE COMAH Public Information Portal and no record of such a corporation exists on Companies House. The only records available

online suggest this company was dissolved in approximately 1993, which suggests the consent, while remaining, is likely to be historic and not currently in use.

- 27.6.5 Following evolution of the design and changes to the geographic extent of the Proposed Development, the HSE identified three Major Accident Hazard pipelines and one licensed explosives site but no Major Accident Hazard sites in their response to the Section 42 consultation (dated 21 November 2022).
- 27.6.6 For clarity, the safeguarding area of the explosives site located at Home Farm, Wepham and the Consultation Zone of the Aerosol Manufacturing plc site are outside of the proposed DCO Order Limits presented in this ES. Further information is given in **Section 27.3.9** and **Table 27-5**. The approach for the pipelines identified is also stated in **Table 27-5**.
- 27.6.7 For clarity, there are no sites which are subject to the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations (2009) or the COMAH Regulations 2015 which could impact upon the Proposed Development.

Future baseline

- 27.6.8 The future baseline for MA&Ds will evolve along a number of factors over the Proposed Development lifecycle.
- 27.6.9 Climate change is predicted to lead to a number of changes including: an increase in peak rainfall intensities and resulting flood flows over time, with wetter winters and drier warmer summers and a rise in sea level. It is anticipated that there will be an increased frequency of lightning strikes and wind gusts. Climate change is expected to alter the prevalence of extreme weather conditions which could lead to a disaster.
- 27.6.10 The magnitude of changes brought about by climate change are uncertain, but UK climate projections (UK CP18) (Met Office, n.d) are available until the end of the 21st century. The anticipated impact of climate change on environmental conditions is considered in **Chapter 29: Climate change, Volume 2** of the ES (Document Reference 6.2.29). The effects of climate change on anticipated weather conditions within the construction phase are anticipated to be minimal.
- 27.6.11 There could be changes in land or water use in the surrounding environment, which could become more agricultural, industrial, residential or recreational in use. Land use and climate change factors could impact the local ecology and associated environmental designations. The marine environment could be subject to more commercial fishing / shipping and recreational boat usage. These changes are anticipated to be gradual in nature and as there is minimal potential for major accidents during the operational phase, this is unlikely to have an impact.
- 27.6.12 Substantial development of technology during the lifetime of the Proposed Development is anticipated. This could include advances in power generation, power transmission, and decommissioning / maintenance techniques. These may reduce the risk posed to safety and the environment further. However, changes in technology may also introduce new hazards that would need to be managed at the

appropriate time and through the appropriate process and in line with relevant planning policy or legislation.

- 27.6.13 The embedded environmental measures which comprise the framework described in **Section 27.7** are designed to account for these factors. The framework in place is based upon risk assessment and risk management principles which are flexible and adaptable to changing context and environmental factors but will ensure that the risk of MA&Ds is reduced to ALARP.

27.7 Basis for ES

Maximum design scenario

- 27.7.1 MA&Ds has been scoped out from further assessment on the basis of a framework of embedded environmental measures. These embedded environmental measures collectively comprise a good practice approach to risk management which meets with regulatory expectations and ensures compliance with all legal requirements. This approach is similar to the maximum assessment assumption scenario approach utilised in other chapters of the ES. The approach of embedding a risk management framework as the key environmental measure rather than specific infrastructure-based commitments means that the assessment of no significant effects will remain valid for any foreseeable changes in the design. This allows the Proposed Development the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the DCO Application.
- 27.7.2 [A change request \[AS-046\] to the DCO Application was accepted by the Examining Authority on 24 July 2024 \[PD-018\]. These changes included minor reductions to the proposed DCO Order Limits \(onshore only\) where adjacent to areas of Ancient Woodland to provide a 25m buffer from these features. Further localised reductions to the extent of Works 9 and 19 were also made, assigning these areas to a class of work with lower impacts from those previously assessed as cable installation. The changes made result in no new or different effects from those reported in this chapter of the ES.](#)
- 27.7.3 Although the proposed approach to managing the risk of major accidents and disasters allows flexibility in the final options selected, it is anticipated that the key elements of the Proposed Development will remain the same. The key pieces of infrastructure involved in the Proposed Development (outlined in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference 6.2.4)) are:
- offshore wind turbine generators;
 - offshore array cables;
 - offshore interconnector cables;
 - offshore substations;
 - offshore export cable corridor;
 - onshore cable corridor; and
 - onshore substation.

Embedded environmental measures

- 27.7.4 As part of the Rampion 2 design process, a number of embedded environmental measures have been adopted to reduce the potential for impacts arising from MA&Ds. These embedded environmental measures have evolved as the EIA has progressed and in response to consultation.
- 27.7.5 These embedded environmental measures include those that have been identified as good or standard practice and include actions that would be undertaken to meet existing legislation requirements. As there is a commitment to implementing these embedded environmental measures, and also to various standard sectoral practices and procedures, they are considered inherently part of the design of Rampion 2 and are set out in this ES.
- 27.7.6 **Table 27-9** sets out the relevant embedded environmental measures within the design and how these affect the potential effects of MA&Ds.

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Table 27-9 Relevant major accidents and disasters embedded environmental measures

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
C-6	Where practical, sensitive sites will be avoided by the temporary and permanent onshore project footprint including SSSIs, Local Nature Reserves, Local Wildlife Sites, ancient woodland, areas of consented development, areas of historic and authorised landfills and other known areas of potential contamination, National Trust Land, Listed Buildings, Scheduled monuments, and mineral resources (including existing mineral sites, minerals sites allocated in development plans and mineral safeguarding areas).	Scoping - updated at PEIR	Draft Development Consent order (DCO), Schedule 1, Part 1 The Authorised Development DCO works plans and order limits.	This measure will ensure separation between sources of major accidents and receptors to minimise the potential for harm.
C-8	During both construction and operation, vehicle maintenance and refuelling of machinery will be undertaken within designated areas where spillages can be easily contained, and machinery will be routinely checked to ensure it is in good working condition. These areas at risk of spillage or containing hazardous materials, such as vehicle maintenance areas and hazardous substance stores (including fuel, oils and chemicals) will comply with industry good practice, be bunded, have appropriate containment and segregation and will be risk assessed and carefully sited to minimise the risk of hazardous substances entering the drainage system, or the local watercourses or sensitive land	Scoping - updated at PEIR	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP (4) (j) Draft DCO-Development Consent Order, Schedule 1, Part 3, Requirement 27 Operation phase Maintenance (2) (a) Outline Code of Construction Practice (CoCP) (Document Reference 7.2) and DCO requirement.	This measure will minimise the potential for spillages to impact the water environment.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
	<p><u>-based receptors. Such areas will be sited at least 10m from a watercourse and away from areas at risk of flooding. Additionally, the bunded areas will have impermeable bases to limit the potential for migration of contaminants into groundwater following any leakage/spillage.</u></p>			
C-25	<p>All aspects of the construction work will be in accordance with the Construction (Design and Management) Regulations 2015.</p>	Scoping	<p><u>Construction (Design and Management) Regulations 2015</u></p> <p><u>Draft DCO, Schedule 1, Part 3, Requirement 22</u> CoCP Outline CoCP (Document Reference 7.2) and DCO requirement.</p>	<p>This measure will ensure that any effects arising during the construction (including commissioning) and decommissioning phases will be risk assessed and reduced to ALARP.</p>
C-53	<p><u>An Outline Marine Pollution Contingency Plan (MPCP) has been submitted with this Application as Appendix A of the Outline Project Environmental Management Plan (Application Document Reference 7.11). This Outline MPCP provides details of procedures to protect personnel working and to safeguard the marine environment and mitigation measures in the event of an accidental pollution event arising from offshore operations relating to Rampion 2. The Final MPCP will</u></p>	Scoping	<p><u>Deemed marine licence, Schedule 11, Part 2, Condition 11 (1) (d) (i) & Schedule 12, Part 2, Condition 11 (1) (d) (i)</u> DCO requirements or Marine Licence (DML) conditions.</p>	<p>This measure will reduce the potential for offshore spills to cause harm to the marine environment.</p>

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
	<p>include relevant key emergency contact details. An Outline Marine Pollution Contingency Plan (MPCP) will be developed. This MPCP will outline procedures to protect personnel working and to safeguard the marine environment and mitigation measures in the event of an accidental pollution event arising from offshore operations relating to Rampion 2. The MPCP will also include relevant key emergency contact details.</p>			
C-56	<p>RED will apply for safety zones post consent. Safety zones of up to 500m will be sought during construction, maintenance and decommissioning phases. Where appropriate, guard vessels will also be used to ensure adherence with Safety Zones or advisory passing distances, as defined by risk assessment, to mitigate any impact which poses a risk to surface navigation during construction, maintenance and decommissioning phases. Such impacts may include partially installed structures or cables, extinguished navigation lights or other unmarked hazards.</p>	Scoping	<p>Electricity application procedures (Section 95 of Energy Act 2004) Deemed marine licence, Schedule 11, Part 2, Condition 13 & Schedule 12, Part 2, Condition 13 Electricity application procedures (Section 95 of Energy Act 2004).</p>	<p>This measure will ensure that other sea users will be kept at a safe distance from offshore construction works.</p>
C-75	<p>Construction and permanent development in flood plains will be avoided wherever possible. Where this is not possible (for example, the landfall location) environmental measures will be developed to ensure the works are National Policy Statement</p>	Scoping - updated at PEIR	<p>Draft DCO, Schedule 1, Part 3, Requirement 22 Code of Construction Practice (CoCP) Outline CoCP (Document</p>	<p>This will minimise the risk flooding impacting the Proposed Development.</p>

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
	compliant, including a sequential approach to siting of infrastructure and passing the Exception Test where appropriate.		Reference 7.2) and DCO requirement	
C-76	In line with good practice Pollution Prevention Plans (PPPs) will be developed to detail how ground and surface waters will be protected in construction and operation. These will include information on the use and storage of any fuels, oils and other chemicals (in line with commitments C-8 and C-167) measures for protecting licenced and private groundwater abstractions (in line with commitment C-147) and pollution incidence response planning and pollution incidence response planning. These will include measures for the protection of licenced and private abstractions. This could include a monitoring regime associated with critical or very near receptors.	Scoping - updated at PEIR	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP (4) (i) Draft DCO, Schedule 1, Part 3, Requirement 27 and 28 Operations Phase Maintenance (2) (a) Outline CoCP (Document Reference 7.2) and DCO requirement	This measure will minimise the risk of spillages affecting the environment.
C-84	RED will exhibit lights, marks, sounds, signals and other aids to navigation as required by Trinity House, MCA and Civil Aviation Authority (CAA). This will include a buoyed construction area around the Rampion 2 array.	Scoping	Deemed marine licence, Schedule 11, Part 2, Condition 6, 7 & 8 & Schedule 12, Part 2, Condition 6, 7 & 8 DML conditions.	This measure will minimise the potential for collisions involving the offshore elements of the Proposed Development.

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
C-85	<p>RED will ensure that the local notice to mariners (NtM) is updated and reissued at weekly intervals during construction activities and at least five days before any planned operations and maintenance works and supplemented with VHF (very high frequency) radio broadcasts agreed with the Maritime & Coastguard Agency (MCA) in accordance with the construction and monitoring programme approved under DML conditions. RED will ensure that the local NtM (notices to mariners) is updated and reissued at weekly intervals during construction activities and at least five days before any planned operations and maintenance works and supplemented with VHF (very high frequency) radio broadcasts agreed with the MCA in accordance with the construction and monitoring programme approved under DML conditions.</p>	Scoping	<p>Deemed marine licence, Schedule 11, Part 2, Condition 5 (9) & Schedule 12, Part 2, Condition 5 (9) DML conditions.</p>	<p>This measure will minimise the potential for collisions involving the offshore elements of the Proposed Development.</p>
C-108	<p>An Emergency Response and Cooperation Plan (ERCOP) will be developed.</p>	Scoping - updated at PEIR	<p>Deemed marine licence, Schedule 11, Part 2, Condition 14 & Schedule 12, Part 2, Condition 14 DCO requirements or DML conditions.</p>	<p>This measure will ensure that appropriate emergency response actions can be taken in the event of an accident to minimise the potential harm.</p>

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
C-117	Works on areas identified as floodplain (Flood Zones 2 and 3) will be programmed to avoid the period between October and February inclusive to avoid disturbance of waterbirds, and where possible, will be programmed to occur in late summer / early autumn, to avoid interaction with known flooding periods to minimise the potential for displacement of floodwater.	PEIR – Updated at ES	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP (4) (f) Outline CoCP (Document Reference 7.2) and DCO requirement	This will minimise the risk flooding impacting the Proposed Development.
C-118	Emergency Response Plans (ERPs) for flood events will be prepared for all construction activities, working areas, access and egress routes in floodplain areas (tidal and fluvial). These plans will be provided for both construction and operation / maintenance phases.	PEIR	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP (4) (i) Outline CoCP (Document Reference 7.2) and DCO requirement	This will minimise the risk flooding impacting the construction workforce.
C-170	A Health, Safety, Security and Environment (HSSE) Strategy will be developed. The HSSE Strategy will describe the way in which the Proposed Development will be delivered. It will include detail of compliance with relevant policies, Management Systems and regulatory requirements, throughout the lifecycle of the Proposed Development.	PEIR	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP Code of construction practice (4) Outline CoCP (Document Reference 7.2)	This measure will provide the overall framework through which the risk of potential major accidents and disasters are reduced to ALARP. It will also provide a securing

ID	Environmental measure proposed	Project phase measure introduced	How the environmental measures will be secured	Relevance to MA&Ds assessment
C-171	A suitable and sufficient risk assessment of the potential impacts of major accidents and disasters has been undertaken, and this will be kept under review throughout the Proposed Development lifecycle (design, construction, operation and decommissioning stages).	PEIR	Outline CoCP (Document Reference 7.2) Draft DCO, Schedule 1, Part 3, Operation phase maintenance Requirement 27 (2) (c), Requirement 28 (2) (c)	mechanism for other measures. This will ensure that all potential major accidents and disasters are identified, assessed and their risk is reduced to ALARP.
C-172	The risk resulting from Major Accidents and/or Disasters will be eliminated So Far As Is Reasonably Practicable (SFAIRP) and any risk which cannot be designed out will be examined to ensure the risk is reduced As Low As Reasonably Practicable (ALARP). This applies to both Safety and Environmental Major Accidents and the impacts on the Proposed Development from disasters.	PEIR	Draft DCO, Schedule 1, Part 3, Operation phase maintenance Requirement 27 (2) (c), Requirement 28 (2) (c) Outline CoCP (Document Reference 7.2)	This will ensure that the risk of harm arising from major accidents and disasters to any receptors is reduced to ALARP.
C-173	The design and layout of the Proposed Development will account for Health and Safety Executive's (HSE) approach to Land Use Planning, and the Proposed Development will be designed to ensure that a response of 'Do Not Advise Against' is received from the HSE.	PEIR	Draft DCO, Schedule 1, Part 3, Requirement 22 CoCP Embedded into design.	This will minimise the potential for external major accidents to impact the Proposed Development.

27.7.7 Further detail on the environmental measures in **Table 27-9** is provided in the **Commitments Register** (Document Reference 7.22) which sets out how and where particular environmental measures will be implemented and secured.

RED's approach to managing MA&Ds

Introduction

- 27.7.8 This section is intended to provide summary detail of the processes which will be enacted to ensure that the risk of MA&Ds is minimised.
- 27.7.9 RED is a joint venture between RWE Renewables UK Limited (RWE), and a joint consortium consisting of Macquarie and Enbridge. These joint venture partners are also shareholders in the Rampion 1 project, with RWE being the majority shareholder and Development Service Provider for the joint venture. RWE is an experienced and established renewables operator with multiple existing offshore wind developments in operation and at various stages of the design, construction and operation phases including Rampion 1, Sofia, Galloper, Triton Knoll, and others. Lessons learned and industry good practice learned from these projects have been and will be applied to the design and operation of the Proposed Development.
- 27.7.10 RED will ensure that MA&Ds are managed by implementing the requirements of the We Care Management System of RWE Renewables. The system covers the topics of health, safety and environmental protection and is oriented in particular to the requirements of ISO standards 45001 and 14001.
- 27.7.11 The approach of RED has three main objectives:
- no lost time incidents;
 - no harm to personnel; and
 - minimise environmental impacts.
- 27.7.12 The strategic approach taken by Rampion 2 is to ensure the Proposed Development complies with the following principles:
- risks are minimised 'So Far As Is Reasonably Practicable' (SFAIRP);
 - risks are ALARP; and
 - the Best Available Techniques (BAT) for avoiding or minimising pollution are applied.
- 27.7.13 The HSSE management system will be implemented proportionately at each stage of the Proposed Development to ensure that the risks of major accidents and disasters will be reduced ALARP and thereby ensuring there will be no significant effects. This will be implemented through C-170. However, this means that not all assessments are available at this stage, as there will be iterative assessment throughout the design, construction, and operation of the Proposed Development. This commitment to risk assessment and reduction is captured in C-171 and C-172 in **Table 27-9**.
- 27.7.14 The following sections are examples of actions, processes and measures which will be driven by the implementation of the HSSE management system. The measures detailed in **paragraphs 27.7.18 to 27.7.48** will be secured through the Health Safety Security and Environment (HSSE) Strategy to be developed and

implemented pursuant to embedded environmental measure C-170, save where otherwise stated.

HSE and Public Health England (PHE)

- 27.7.15 PHE states that the interaction of the Proposed Development with the COMAH Regulations (HSE, 2015) or similar sites should be considered. For clarity, the Proposed Development is not within scope of the COMAH Regulations or any other Major Accident Hazard regulatory regime (such as the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations (2009), as the Proposed Development does not involve significant quantities of dangerous substances. The potential for external Major Accident Hazard sites and pipelines to impact upon the Proposed Development is limited due to the small workforce population involved in the Proposed Development, however is considered in the description of External Major Accidents in **Section 27.10**.
- 27.7.16 Annex G of the Planning Inspectorate Planning Advice Note 11 (2017b) states that:
- “If the Proposed Development is not within scope of the COMAH Regulations, the safety concerns related to any work activity would be addressed under the Health and Safety at Work, etc Act 1974 and its relevant statutory provisions”* but that *“Under Great Britain’s health and safety legislation, HSE does not have a role in examining risk or hazard assessments unless the circumstances are covered by specific regulations”*.
- 27.7.17 This ES chapter (in the following sections) presents how the framework that RED has in place will ensure that the HSWA (1974) and other statutory provisions will be met.

Risk assessment and the hierarchy of controls

- 27.7.18 Good practice in risk management relies on a number of key principles, which are supported by the UK legislative framework for Health and Safety, and Environmental Major Accidents.
- 27.7.19 Firstly, a suitable and sufficient risk assessment which considers both the likelihood and ‘credible worst case’ consequences of potential major accident and disaster scenarios should be undertaken. Any risk assessments should consider ‘what more can be done?’ and seek to apply the ‘hierarchy of controls’.
- 27.7.20 The hierarchy of controls prioritises risk reduction measures so that the inherently safe option which eliminates the risk entirely is considered first, then any measures which prevent the risk, then measures which control the risk and so on. The outcome of this approach is that the most effective risk reduction measures are selected, and the residual risk is minimised.
- 27.7.21 An example of this is given in embedded environmental measure C-6 which seeks to ensure that environmental receptors are avoided whenever practical to do so. This physical separation will reduce the potential for any adverse impact by removing the pathway for harm. Other measures can be specified to prevent harm at design stage, for example, the temporary construction compounds have to be

designed to site fuel storage so as to minimise the potential for spills of fuel in embedded environmental measure C-8. These embedded environmental measures are listed in **Table 27-9**.

Designing risk out of the Proposed Development

- 27.7.22 The most effective stage to reduce risk is during the design process of the Proposed Development. RED has ensured that HSSE considerations are an integral component of the engineering design process and has set a number of design safety expectations for the design team to comply with. These expectations include minimising risk where possible, considering alternatives and designing out risk across the whole Proposed Development lifecycle. Building resilience into the design will be key to ensuring robust risk management throughout the lifecycle, which will include factors like ensuring the design promotes sustainability and accounts for the anticipated effects of climate change. The Proposed Development has also built-in appropriate methods and review mechanisms to ensure that these expectations are met.
- 27.7.23 The Proposed Development will have a defined Hazard Identification and Risk Assessment system, which will include Hazard Identification, Environmental Hazard Identification and Hazard & Operability (HAZOP) studies at appropriate stages throughout the design.
- 27.7.24 All designers working on the project are required to assess foreseeable risks during the design process and this will be undertaken at various stages of the project by a team of designers, discipline experts and managers. It will evaluate the design and the risks included in the proposed approach.
- 27.7.25 RED (as Client under the CDM Regulations 2015) will appoint a Principal Designer who will be responsible for the design choices and ensuring that the design complies with all requirements including the CDM Regulations 2015, contractual specifications, and the RED expectations for Design Safety.
- 27.7.26 Key design decisions which affect potential MA&Ds will be recorded by designers with the justification for the options selected. This will include items such as material of construction, sizing of components and approaches for managing integrity. Some of these will come after development consent is granted.
- 27.7.27 The key risks will be identified by Hazard Identification (HAZID) or Hazard and Operability (HAZOP) studies and included in the Design Risk Assessment (C-171). This will include the Design Risk Register developed by the Principal Designer throughout the design and construction process, which is handed over at the end of construction, in compliance with the CDM Regulations 2015 (C-25). During the design and construction phases, the Principal Designer, Principal Contractor (once appointed) and the Client (RED), all have a role to ensure that HSSE risk is managed. These risk assessments will be kept under review to ensure that any new hazards or potential risk reduction measures can be identified and incorporated.
- 27.7.28 The risk assessments undertaken through the design process will consider the ability to construct, operate and maintain the system. They will also evaluate whether there is more that could be done to reduce or eliminate risk i.e., 'is the risk ALARP?'

Managing risk during the construction phase

- 27.7.29 The construction phase is the first phase of the Proposed Development where there is the risk of a major accident or disaster occurring. It also coincides with the largest workforce population associated with the Proposed Development. The construction workforce is a new population which could be affected by a major accident or disaster and may additionally be unfamiliar with the area.
- 27.7.30 The CDM Regulations 2015 require specific processes to address issues which are unique to construction projects. RED will fully implement the CDM process through a dedicated procedure (this is secured in embedded environmental measure C-25 in **Table 27-9**) and will ensure that the risk assessments through this process will adequately assess the impacts of MA&Ds in addition to workplace/occupational injury potential associated with the construction phase activities.
- 27.7.31 RED will appoint a Principal Designer and a Principal Contractor, who will be responsible for the management of risk (including of MA&Ds) during the design and construction phases.
- 27.7.32 RED will ensure that the risk of catastrophic events occurring during construction will be adequately considered within the design risk assessment process which is used to comply with the Construction (Design and Management) Regulations 2015 and the Management of Health and Safety at Work Regulations 1996. The OIS 02/2019 (HSE and MCA, 2019) will be used as the basis of risk assessment and emergency preparedness during construction for the Offshore elements in line with the expectations of the MCA and HSE. The principles of the OIS will also be incorporated into assessment of onshore infrastructure.

Operating safely

- 27.7.33 As described in **paragraphs 27.7.8 to 27.7.14** and **paragraphs 27.7.18 to 27.7.27**, the risk of MA&Ds will be reduced through processes designed to either eliminate or reduce the residual risk of any events to ALARP. The RED HSSE Strategy will be to ensure that the RWE HSSE management system is applied throughout the operational phase of Rampion 2 (C-170).
- 27.7.34 The risk assessments undertaken throughout the design and construction of the Proposed Development will be kept under review to ensure that any changes to hazards or risk reduction measures can be identified and adequately mitigated.
- 27.7.35 Dependent on the nature of the potential harm, there will be appropriate systems in place to manage the risk. MA&Ds are high consequence events which need significantly more robust control measures than low consequence events like slips and trips. It is anticipated that all accident scenarios will have safe ways of working, procedures and permits to ensure that risk is managed. There will also be processes in place (wherever possible) to forewarn and protect against the impacts of disasters such as flood warnings and wind forecasting.
- 27.7.36 The HSSE management system will require RED to monitor the effectiveness of the HSSE policies utilising a number of measures including proactive and reactive indicators and to intervene to ensure that an appropriate level of protection is maintained (C-170).

Responding to incidents

- 27.7.37 Suitable plans for what to do if a major accident or disaster occurs, are one of the final barriers in good risk management. Emergency response plans will be produced where there is a residual risk of major accidents or disasters occurring, although many of these events will not be potential major accidents or disasters. Where there is a residual risk of a major accident or disaster identified, these will be covered by a plan for the emergency response actions to be taken. There will be different arrangements covering the construction and operation phases of the Proposed Development to allow the correct response arrangements to be implemented.
- 27.7.38 RED has committed to producing an Emergency Response and Cooperation Plan (C-108), and a Marine Pollution Contingency Plan (C-53) as described in **Table 27-9**. These plans will form the foundation of ensuring an appropriate emergency response capacity for the offshore elements of Rampion 2.
- 27.7.39 The Proposed Development has also committed to developing an onshore pollution prevention plan for preventing and dealing with spills (C-76). During construction, the Principal Contractor will be responsible for ensuring that suitable emergency response arrangements are in place, in line with CDM and the appropriate risk assessment.

Lessons learned

- 27.7.40 RWE operates a central Lessons Learned database which allows the transfer of learning across the organisation from previous projects or industry incidents. As RWE are a key part of the RED joint venture undertaking the Proposed Development, RED will have direct access to this experience. There is also direct transfer of lessons learned reports at the end of any project, such that Rampion 2 will benefit from any lessons learned on the Rampion 1, Sofia, Triton Knoll and Galloper projects.
- 27.7.41 The HSSE management system also requires that any lessons learned after significant incidents are also distributed to all RWE projects (including Rampion 2) so that the lessons can be incorporated. It covers the communication of information including incidents and findings from incident investigations as well as product recalls and alerts from manufacturers.

Contractors and supply chain

- 27.7.42 Various parts of the Proposed Development during each phase will be undertaken by contractors on behalf of RED. RED will review the management system of every contractor to ensure that they comply with the requirements of RED in respect of HSSE.
- 27.7.43 Every contractor and any sub-contractors will be expected to comply with RWE and RED requirements for delivering the Proposed Development safely in line with any plans, requirements or risk assessment produced.
- 27.7.44 All contractors will be evaluated on HSSE criteria as part of the tender phase for contractor selection. Any contractor who cannot achieve the standards required will not be selected to work on the Proposed Development.

- 27.7.45 During the construction phase, RED will take the role of Client under the CDM Regulations 2015. RED will appoint a suitable Principal Contractor in line with the requirements of the CDM Regulations 2015. The Principal Contractor will devise a HSSE plan for Rampion 2 in line with RED, and the Principal Contractor shall be responsible for managing the performance of all sub-contractors against the HSSE plan.
- 27.7.46 RED, in conjunction with the Principal Designer and Principal Contractor during the construction phase, will be responsible for ensuring that suitable information related to MA&Ds are provided to contractors to minimise the risk.
- 27.7.47 During the O&M phase, RED will oversee the appointment and monitor the delivery and HSSE performance of contractors undertaking works on the Proposed Development.

Summary

- 27.7.48 RED's approach to managing the risks of MA&Ds is contained in the framework described in this section. The approach is intended to manage all issues related to HSSE. This includes the potential MA&Ds and allows a comprehensive risk-based approach to be taken. This section is not intended to be a comprehensive description but rather a high-level summary of how RED will ensure that all risk is reduced to ALARP, which will ensure there will be no significant effects arising from MA&Ds.

27.8 Approach for ES

Introduction

- 27.8.1 No assessment methodology has been provided as MA&Ds have been scoped out from assessment, however a description of effects is provided. **Section 27.1** provides definitions for 'major accident' and 'disaster', and **Section 27.4** provides the receptors and level of harm which are considered to meet these definitions.
- 27.8.2 The potential MA&Ds have been captured in three categories:
- major accidents originating from within the Proposed Development (major accidents – internal) are described in **Section 27.9**;
 - major accidents from the surrounding environment which could affect the Proposed Development (major accidents – external) are described in **Section 27.10**; and
 - disasters which could affect the Proposed Development are described in **Section 27.11**.
- 27.8.3 Each of the categories described above include potential events for both the offshore and onshore elements of the Proposed Development.

27.9 Description of effects: major accidents – internal

Introduction

27.9.1 This section provides a description of the potential major accidents originating from the Proposed Development which could occur through the Proposed Development lifecycle. It describes their type, foreseeable consequences and how the embedded environmental measures described in **Section 27.7** will manage the risk to ensure that there are no significant effects.

Offshore major accidents

Overview

- 27.9.2 The potential offshore major accidents identified that could lead to fatalities amongst the offshore workforce associated with the Proposed Development, either during construction, operation and maintenance or decommissioning are described in the following sections. With the exception of marine vessels, it is not considered that any third parties could be impacted. The risk of any potential accidents occurring and affecting third parties is not considered to be significant due to the presence of Safety Zones (embedded environmental measure C-56 in **Table 27-9**) during construction and a Notice to Mariners (NtM) at other times. There is also potential for spillages of hazardous substances including chemicals and fuels, which could affect the sea and wider marine environment.
- 27.9.3 The potential for divers to be present and impacted by underwater noise is considered in **Chapter 7: Other marine users, Volume 2** of the ES (Document Reference 6.2.7).
- 27.9.4 The types of potential major accident offshore include transport accidents (vessel collision / helicopter accident), spillages of chemicals or fuels, construction hazards, fires, electrical hazards or physical hazards such as ice or blade throw.
- 27.9.5 The offshore location of these incidents increases the importance of rigorous emergency planning, as there can be hazards associated with attempted escape, evacuation and rescue when offshore following an emergency event. RED will ensure that the emergency plans (embedded environmental measure C-108 in **Table 27-9**) cover foreseeable major accident and disaster scenarios in line with regulatory expectation, and appropriate escape, evacuation and rescue (HSE & MCA, 2019).

Physical hazards

- 27.9.6 There are various potential major accidents associated with the construction, operation and maintenance, and decommissioning phases of the Proposed Development. During the operation and maintenance phase, there will normally be no offshore workforce present, as the Proposed Development will only be manned for routine and reactive maintenance. During the construction and decommissioning phases, Safety Zones will be sought to exclude other vessels from a 500m area around the construction / decommissioning works.

- 27.9.7 There is the potential for major accidents caused by physical impacts such as dropped loads from a crane, structural collapses or failure of a jack-up vessel in the field. These large hazards could lead to multiple fatalities but are managed through strong control measures implemented through the HSSE management system (C-170) and good design. For the lifting hazards, there will be safe systems of work, exclusion zones, lift planning and permits required for significant crane lifts implemented through the HSSE management system (C-170).
- 27.9.8 There are operation and maintenance phase physical hazards, particularly around ice thrown from the wind turbine generator (WTG) blades or the potential WTG blades to become detached in excessive wind speeds. The Proposed Development will define appropriate conditions within the design basis and management systems (C-170), for when the WTGs can operate to minimise the risk of damage to the turbine and when it is not considered safe to approach the WTGs (e.g. during adverse weather). Physical hazards may also include structural collapse and dropped / swung loads including at the offshore substations.
- 27.9.9 Details of all hazards will not be fully known until the design, location, and construction methods are finalised, but the framework outlined in **Section 27.7** is designed to adapt to any design and ensure that the risk is reduced to ALARP for all potential major accidents.

Electrical

- 27.9.10 During construction, commissioning, operation and maintenance of the Proposed Development, there is the potential for electrocution of workers due to accidents involving live equipment. These hazards are mitigated through the design of the systems and appropriate safe systems of work being employed for commissioning, operation and maintenance.
- 27.9.11 Electrocution hazards are primarily protected by good design of the electrical systems and safe systems of work, which will be considered by the framework described in **Section 27.7** (C-170). However, this process will also ensure that appropriate escape routes are available in the event of an emergency.

Fire and explosions

- 27.9.12 The risk of fire and explosion will be managed through good design and the inclusion of appropriate fire protection systems. However, if a fire or explosion were to occur onboard one of the construction or operation and maintenance support vessels, in one of the WTG turbines, or in the offshore substation (once constructed), this could lead to a small number of fatalities amongst the offshore workforce.
- 27.9.13 Details of hazards will not be fully known until the design, location, and construction methods are finalised but the framework outlined in **Section 27.7** is designed to adapt to any design and ensure that the risk is reduced to ALARP for all potential major accidents.

Leaks and Spills

- 27.9.14 The potential inventories of material used offshore during all phases of the Proposed Development are likely to be extremely small in most cases. The marine vessels will have fuel tanks which could fail leading to a spill, but these systems will be designed to the appropriate standard for offshore commercial marine vessels and would only be released in the event of a marine vessel sinking. There will be inventories of gases, chemicals and oils used for the WTGs and offshore substations, these will be designed with adequate containment and the minimum inventory required for safe and efficient operation.
- 27.9.15 If a fire were to occur while offshore or a leak from the fire protection systems, then there could be a release of extinguishing media to sea. The marine receptor is the most credible receptor, although there are nearby designated sites (national and internationally important sites). The most likely consequence is a short-term contamination (pollution event) affecting the sea surface around the Proposed Development.
- 27.9.16 The use and potential release of any substances used will be risk assessed through the framework described in **Section 27.7**, with leak/spill response procedures put in place. A key objective of this plan is to ensure that the BAT is used to prevent any pollution. The Proposed Development has also committed to developing a MPCP for dealing with offshore spills, which will be agreed with the Marine Management Organisation (MMO) (C-53).

Transport accidents

- 27.9.17 The transport of personnel and equipment to and from the Proposed Development is unavoidable during the construction, operation and maintenance, and decommissioning phases. As with any mode of transport, there is a risk associated with it, which could lead to fatalities in the offshore workforce or third parties.
- 27.9.18 Potential major accidents of this type include ship collisions and helicopter accidents. The Proposed Development will utilise boat (including ship) and potentially helicopter transport.
- 27.9.19 The safe transport of all personnel will be considered by risk assessment through the Proposed Development risk management framework described in **Section 27.7** (C-170). The potential for vessels to impact upon the Proposed Development also forms part of the design risk assessment (C-171), ensuring that the Proposed Development can withstand minor vessel impacts from RED and third-party vessels.

Onshore major accidents

Overview

- 27.9.20 For the onshore elements of the Proposed Development, there were four types of potential major accidents identified. No potential for major accidents associated with the onshore cable have been identified once it has been constructed and buried.

- 27.9.21 Note: the impacts of onshore related Transport related accidents are covered in [Chapter 23: Transport, Volume 2](#) of the ES (Document Reference 6.2.23) [and within Chapter 32: ES Addendum, Volume 2 \(Document Reference 6.2.32 \[REP5-038\]\)](#).

Physical accident

- 27.9.22 The installation of the onshore cable and construction of the onshore substation carries the risk of an accident occurring and leading to a low number of worker fatalities
- 27.9.23 The hazards associated with construction and decommissioning of energy projects, are known, and well understood (for example, due to crane topple or trench collapse). RED will implement, through the management system, RWE's established process for managing these projects which complies with the CDM Regulations 2015 and industry good practice. All aspects will be risk assessed, and the ability to safely undertake works will be a material consideration in the design process. A summary of this approach is described in **Section 27.7**.
- 27.9.24 There is potential for the onshore above ground structures to collapse during the operation and maintenance phase. In most cases, there will be no workers present, as the onshore substation is not normally occupied once operational, although planned site visits will occur. The primary mitigation is to ensure that the elements of the Proposed Development are designed in accordance with industry good practice, the anticipated environmental conditions, and where relevant, the Building Regulations.

Leaks and Spills

- 27.9.25 The construction, operation and maintenance, and decommissioning activities may require the use of fuels and some limited inventories of chemicals. There may also be some limited inventories of chemicals associated with transformers in the onshore substation during the operation and maintenance phase. The use and potential release of any substances used will be risk assessed through the framework described in **Section 27.7**, with leak / spillage response procedures put in place. A key objective of this framework is to ensure that the BAT is used to prevent any pollution.
- 27.9.26 The Proposed Development has also committed to developing a pollution prevention plan for preventing and dealing with onshore spills (C-76 in **Table 27-9**). Any fuel tanks used as part of the Proposed Development will be double skinned with leak detection in the bund (C-25).

Electrical accident

- 27.9.27 There may be electrical hazards associated with the commissioning and decommissioning of the onshore infrastructure, and particular consideration will be given to tie-in to the existing electrical grid and works undertaken on the National Grid substation at Bolney. The Proposed Development will be designed to allow this to be done in a safe manner utilising industry standard practices including for isolation and testing of High Voltage Alternating Current (HVAC) systems.

- 27.9.28 There is a potential major accident involving electrocution during the commissioning, and operation and maintenance phases, if there were to be a failure at the onshore substation. The onshore substation will not normally be occupied, so in the unlikely event that a failure developed, there would likely be no receptor to be harmed. If a fire occurred during operation and maintenance and workers were present, then there is the potential for one to two workers to be injured or killed.
- 27.9.29 Electrocution hazards are primarily protected by good design of the electrical systems and safe systems of work, which will be considered by the framework described in **Section 27.7**. However, this process will also ensure that appropriate escape routes are available in the event of an emergency.

Fire/explosion

- 27.9.30 There is the potential for a fire involving diesel fuel or flammable / combustible materials in the temporary construction compounds during the construction phase. These will be prevented by selecting fuel tanks of a robust design, siting them appropriately within secured compounds and providing suitable containment and ignition control. Other minor fires will be prevented through good site management practices to minimise any material build up.
- 27.9.31 A potential major accident identified onshore during the operation and maintenance phase is a fire or explosion which could occur at the onshore substation. The onshore substation will not normally be occupied, so in the unlikely event that a fire did occur, there would typically be no receptor to be harmed. If a fire occurred during operation and maintenance and workers were present, then there is the potential for one to two workers to be injured or killed.
- 27.9.32 Fires and explosions are primarily protected by good design of the electrical systems and fuel storage, which will be considered by the framework described in **Section 27.7**. However, this process will also ensure that appropriate fire protection systems and escape routes are available in the event of an emergency.
- 27.9.33 The workers who could be involved will be experienced and competent operators, who understand the risks associated with HVAC electrical and vehicle refuelling systems.

Significance of residual effects

- 27.9.34 The Rampion 2 commitments (as shown in **Table 27-9**) ensure that the effects of any major accidents which arise from the Proposed Development will be **Not Significant** in EIA terms.

27.10 Description of effects: major accidents – External

Overview

- 27.10.1 This section provides a description of the potential major accidents originating external to the Proposed Development, but which could impact upon it. It describes their type, foreseeable consequences and how the embedded

environmental measures described in **Section 27.7** will manage the risk to ensure that there are no significant effects.

Ground Hazards

- 27.10.2 There is the potential for major accidents associated with the ground on any onshore construction work, these include the potential for UXO, historic ground contamination, landfill gases and/or asbestos. **Chapter 24: Ground conditions, Volume 2** of the (Document Reference 6.2.24) provides further detail on these potential hazards. The framework described in **Section 27.7** will ensure that any issues identified are accounted for in the design.
- 27.10.3 There is also potential for a major accident associated with UXO in the offshore construction work, especially where works are required which may disturb the seabed. UXO on the seabed has the potential to cause serious harm to the Rampion 2 construction workforce if inadvertently detonated. An outline offshore UXO strategy is being developed for Rampion 2 in line with the requirements of the HSSE management system which will follow the same principles as onshore UXO risk mitigation (desk-based assessment to specify the requirements for further surveys or clearance work and provide information to ensure that all activities are suitably risk assessed with appropriate resources available to mitigate, if UXO is discovered). In general, consent for UXO removal will be sought in a future marine license application, once further offshore geophysical surveys of the seabed have been undertaken to identify and characterise potential UXO. It is noted that experience from Rampion 1 indicates a relatively low incidence of offshore UXO.

External industrial hazards

- 27.10.4 External industrial hazards are events, such as fires, explosions or releases of hazardous substances which could take place in nearby industrial sites and cause serious harm to the Proposed Development.
- 27.10.5 There are no significant industrial developments in proximity to the offshore elements of the Proposed Development. Any subsea infrastructure (including cables and pipelines) has been identified in the vicinity of the offshore wind farm area or export cable and assessed. Either crossing or proximity agreements will be reached with the operators of each of these systems, where they are required. Further details with respect to significant industrial developments and subsea infrastructure are provided in **Chapter 7: Other marine users, Volume 2** (Document Reference 6.2.7).
- 27.10.6 The area surrounding the onshore elements of the Proposed Development is predominantly rural, but there are utility systems which are in close proximity or will need to be crossed by the onshore cable corridor. For any works in close proximity to gas pipelines including crossings, the appropriate safe methods of work will be agreed with the pipeline operator and suitable risk assessment undertaken.
- 27.10.7 The HSE in their response to the second Statutory Consultation exercise in 2022 indicated three Major Accident Hazard pipelines and a licensed explosives site. Following further design evolution, the Proposed Development is located entirely

outside of the safeguarded area for the explosives site however the onshore cable corridor crosses each of the pipelines. RED has committed to ensuring that the design of the Proposed Development will not be objected to by the HSE, by ensuring that any development in the proximity of hazardous sites which cannot be sited elsewhere is of suitable type, and the number of people is reduced so far as is reasonably practicable (HSE n.d. b). HSE indicated in their response to the second Statutory Consultation that they would not advise against the Proposed Development.

Security threat

- 27.10.8 There is the potential for hostile acts against the Proposed Development and the associated workforce, which could occur at any stage of the lifecycle of Rampion 2. Few of these are likely to be severe enough to be considered a major accident, as most instances will be limited to minor theft or vandalism.
- 27.10.9 The Proposed Development is not considered to be a high-risk target for terrorism. There are no large or vulnerable receptor populations associated with the Proposed Development. Attacks on infrastructure are listed on the National Risk Register (Cabinet Office, 2020), but the Proposed Development represents only one producer for the electrical grid, and it is not anticipated that any damage would lead to widespread significant effects.
- 27.10.10 The highest risk (albeit still considered to be not significant) of serious harm is likely to be trespassers in the onshore substation compound, temporary construction compounds, or offshore foundation / substations who are unaware of (or choose to disregard) the hazards. The Proposed Development will be secured by adequate locks, gates and fencing, and signage will be posted to indicate the presence of either high voltage electrical systems or construction hazards.
- 27.10.11 If other significant security issues arise, then these will be identified and resolved through the framework described in **Section 27.7**.

External interference

- 27.10.12 There is a risk that a third party might disturb and damage the electrical cable in error, which may lead to serious harm to third-parties such as electrocution, either onshore or offshore. The cable will be installed in ducting along the full length with a minimum burial depth of 1.2m standard cover to top of duct for onshore and a minimum of 1m depth offshore, which will prevent most accidental impacts. The onshore cable will have cable protection tiles and marker tape which will be used to warn of the presence of high voltage electrical cables. The onshore cable route will be available to utility search companies, who are seeking to construct in the vicinity of the cable.
- 27.10.13 There is the potential for third party transport (marine or aviation) to impact on the Proposed Development or Rampion 2 support vessels during the whole Proposed Development lifecycle. The impacts on navigation of third-party vessels are considered in **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference 6.2.13) and **Appendix 13.1: Navigational Risk Assessment, Volume 4** of the ES (Document Reference 6.4.13.1). See also embedded environmental measures C-84 and C-85 in **Table 27-9**. The potential

impacts on aviation are described further in **Chapter 14: Civil and military aviation, Volume 2** of the ES (Document Reference 6.2.14). The approach taken in those two ES chapters is considered to represent good practice and therefore the risk of any major accident related to third party transport is not considered to be significant.

Significance of residual effects

- 27.10.14 The Rampion 2 commitments (as shown in **Table 27-9**) ensure that the effects of any major accidents which could affect the Proposed Development will be **Not Significant** in EIA terms.

27.11 Description of effects: Disasters

- 27.11.1 This section provides a description of the potential disasters which could impact upon the Proposed Development. It describes the type of potential disasters and how the embedded environmental measures described in **Section 27.7** will manage the risk to ensure that there are no significant effects.
- 27.11.2 The risk of adverse weather conditions affecting the construction of the onshore elements of the Proposed Development is limited. For example, there is the potential for flooding of excavations. The design of any temporary works will be designed to account for ground and groundwater conditions (C-75). There will be procedures developed for working in areas liable to flooding (C-117), and for cessation of construction activities in extreme adverse conditions.
- 27.11.3 The potential for disasters to impact upon the Proposed Development is limited in the operation and maintenance phase, as there is a limited workforce, especially onshore. The peak workforce population is anticipated to be during the construction and decommissioning phases.
- 27.11.4 During the operation and maintenance phase, there is no fixed or permanent workforce. The potential for a disaster to impact on workers undertaking routine maintenance or ad-hoc repairs is considered to be negligible.
- 27.11.5 Any potential impacts on the welfare of workers due to ambient temperatures or precipitation is considered to be an occupational health and safety covered by compliance with the Management of Health and Safety at Work Regulations (1999) and not relevant to this aspect.
- 27.11.6 Further detail on dewatering / groundwater and the assessment of flood risk is considered in **Chapter 26: Water environment, Volume 2** of the ES (Document Reference 6.2.26) and **Appendix 26.2: Flood Risk Assessment, Volume 4** of the ES (Document Reference 6.4.26.2).
- 27.11.7 For the offshore elements of the Proposed Development, the natural elements which will have the greatest impact on the Proposed Development are high winds and rough seas. These could be a contributing cause and increase the likelihood of a major accident described in **Section 27.9**, but are unlikely to be the sole cause. Direct injury to offshore workers could also arise in extreme weather.
- 27.11.8 The design of the Proposed Development will account for all foreseeable weather conditions and potential disasters as part of the framework described in **Section**

27.7 covering the onshore and offshore elements of the Proposed Development. Daily weather and sea state forecasts will be studied to assess the conditions before certain work activities in all phases of the Proposed Development are allowed to commence. Some activities such as heavy lifts will not be able to take place in adverse working conditions such as high wind, this will be defined in the procedures and permits which accompany these activities during the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

- 27.11.9 A geological assessment of the seabed will be undertaken as part of the design process to ensure that a suitable foundation is designed for the offshore elements of the Proposed Development which is resistant to scour and other movements in the seabed without compromising the integrity of the structure.
- 27.11.10 The effects of climate change on anticipated weather conditions are described in **Chapter 29: Climate change, Volume 2** of the ES (Document Reference 6.2.29).

27.12 Assessment of cumulative effects

Approach

- 27.12.1 A cumulative effects assessment (CEA) examines the combined impacts of Rampion 2 in combination with other developments on the same single receptor or resource and the contribution of Rampion 2 to those impacts. The overall method followed in identifying and assessing potential cumulative effects in relation to the environment is set out in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference 6.2.5) and **Appendix 5.4: Cumulative effects assessment detailed onshore search and screening criteria, Volume 4** of the ES (Document Reference 6.4.5.4).

Cumulative effects assessment

- 27.12.2 MA&Ds are by their nature extremely unlikely events, it is extremely unlikely therefore that two unrelated major accidents or disasters could occur in the same time period or affecting the same receptors. There are no anticipated significant effects arising from the Proposed Development. As the same legally binding HSE regulations apply to all workplaces, this would limit the exposure of receptors to significant (intolerable) risk from other industrial processes.
- 27.12.3 Additionally, if receptors are significantly exposed to risk from the Proposed Development such as construction workers, then their exposure to risk from other sources will be extremely limited, (because workers can only be employed at one location). Any exposure to risk from sources other than the Proposed Development is not considered likely to make their total risk exposure significant (intolerable) when considered cumulatively. Therefore, the total level of risk posed to any specific receptor is anticipated to be below the boundary of intolerability (assuming third parties comply with their legal obligations). As such, there is no anticipated potential for cumulative effects arising from MA&Ds.

- 27.12.4 Effects from external Projects on the Proposed Development receptors are not treated as cumulative, as they would be considered a direct 'external major accident' and therefore not a cumulative effect
- 27.12.5 On the basis of the above, no 'other developments' are scoped into the major accidents and disasters assessment of cumulative effects.

27.13 Transboundary effects

- 27.13.1 Transboundary effects arise when impacts from a development within one European Economic Area (EEA) states affects the environment of another EEA state(s). A screening of transboundary effects has been carried out and is presented in Appendix B of the Scoping Report (RED, 2020). There are no transboundary effects upon other EEA states relevant to the MA&D aspect, and therefore these are not considered any further as part of this chapter.

27.14 Inter-related effects

- 27.14.1 The inter-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and maintenance and decommissioning phases of Rampion 2 on the same receptor, or group of receptors.
- 27.14.2 The Scoping Report proposed to scope out MA&D on the basis that they were adequately controlled. PINS requested that a description of any likely significant effects resulting from major accidents and disasters is included in the ES. The information provided in this ES chapter is intended to demonstrate that the risk of major accidents and disasters will be managed and reduced through the application of embedded environmental measures to ensure there are no significant effects as the result of the Proposed Development.
- 27.14.3 As there are no significant effects relating to major accidents and disasters after consideration of the embedded environmental measures, no assessment of inter-related effects has been undertaken.

27.15 Summary of residual effects

- 27.15.1 **Table 27-10** presents a summary of the residual effects of MA&D considering any relevant embedded environmental measures.

Table 27-10 Summary of assessment of residual effects

Activity and impact	Embedded environmental measures	Assessment of residual effect (significance)
Effects arising from major accidents associated with the Proposed Development (i.e., internal major accidents)	C-6, C-8, C-25, C-53, C-56, C-75, C-76, C-108, C-170, C-171, C-172, and C-173	Not Significant
Effects arising from major accidents which could cause harm to receptors within the Proposed Development (i.e., external major accidents)	C-25, C-84, C-85, C-108, C-170, C-171, C-172, and C-173	Not Significant
Disasters	C-25, C-75, C-108, C-117, C-118, C-170, C-171, C-172, and C-173	Not Significant

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27.16 Glossary of terms and abbreviations

Table 27-11 Glossary of terms and abbreviations – MA&Ds

Term (acronym)	Definition
ALARP	As Low As Is Reasonably Practicable.
AONB	Area of Outstanding Natural Beauty.
BAP	Biodiversity Action Plan.
Baseline	Refers to existing conditions as represented by latest available survey and other data which is used as a benchmark for making comparisons to assess the impact of development.
Baseline conditions	The environment as it appears (or would appear) immediately prior to the implementation of the Proposed Development together with any known or foreseeable future changes that will take place before completion of the Proposed Development.
BAT	Best Available Techniques.
CBA	Cost Benefit Analysis.
CDM Regulations	Construction (Design and Management) Regulations.
CDOIF	Chemical and Downstream Oil Industries Forum.
Climate Change	A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes, to external forcing or to persistent anthropogenic changes in the composition of the atmosphere, ocean or in land use.
Code of Construction Practice	The code sets out the standards and procedures to which developers and contractors must adhere to when undertaking construction of major projects. This will assist with managing the environmental impacts and will identify the main responsibilities and requirements of developers and contractors in constructing their projects.
COMAH	Control of Major Accident Hazards (COMAH) Regulations (HSE, 2015).

Term (acronym)	Definition
Consultation Distances/Zones	<p>HSE is a statutory consultee under Section 42 of the Planning Act 2008 for planning applications around major hazard sites and major accident hazard pipelines.</p> <p>A consultation distance set by the HSE around the major hazard site or major accident hazard pipeline, within which a planning authority must consult HSE over relevant developments which are likely to lead to an increased population around the major hazard.</p>
DCO Application	<p>An application for development consent to undertake a Nationally Significant Infrastructure Project, under the Planning Act 2008, made to the Planning Inspectorate. The Planning Inspectorate will consider the application and make a recommendation to the Secretary of State for Business, Energy, and Industrial Strategy, who will decide on whether development consent should be granted for the Proposed Development.</p>
Development Consent Order (DCO)	<p>This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.</p>
DETR	<p>Department of the Environment, Transport and the Regions.</p>
Disaster	<p>A natural occurrence that leads to serious damage to receptors, either immediate or delayed.</p>
Environment Agency	<p>Environment Agency is a body operating as part of His Majesty's Government responsible for regulating major industry, waste, contaminated land, water quality and conservation.</p>
Effect resulting from a major accident and disasters	<p>The risk of the major accident or disaster occurring, considering the potential consequences and likelihood of occurrence.</p>
Embedded environmental measures	<p>Equate to '<i>primary environmental measures</i>' as defined by Institute of Environmental Management and Assessment IEMA (2016). They are measures to avoid or reduce environmental effects that are directly incorporated into the preferred masterplan for the Proposed Development.</p>

Term (acronym)	Definition
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
ESA	Environmentally Sensitive Area.
HAZID	Hazard Identification.
HAZOP	Hazard & Operability.
Habitats of Principal Importance (HPI)	Habitats designated priority under Section 41 of the Natural Environment and Rural Communities Act (2006) of Principal Importance.
Health and Safety Executive (HSE)	The Health and Safety Executive (HSE) is an agent of His Majesty's Government responsible for the regulation and enforcement of workplace health and safety. The HSE statutory consultee for planning applications around major hazard sites and major accident hazard pipelines.
HSSE	Health, Safety, Security and Environment.
HSWA	Health and Safety at Work etc. Act 1974.
IEMA	Institute of Environmental Management and Assessment is a professional body for in environment and sustainability.
Informal consultation	Informal consultation refers to the voluntary consultation that RED undertake in addition to the formal consultation requirements.
LNR	Local Nature Reserve.
LWS	Local Wildlife Site.

Term (acronym)	Definition
Major accident	An unintended event caused by a man-made activity or asset that leads to serious damage to receptors, either immediate or delayed.
MA&D	Major Accident and Disaster.
MCA	Maritime and Coastguard Agency.
MCZ	Marine Conservation Zone.
MPCP	Marine Pollution Contingency Plan.
Nationally Significant Infrastructure Project	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by development consent order. These include proposals for renewable energy projects with an installed capacity greater than 100MW.
NNR	National Nature Reserve.
NtM	Notice to Mariners.
Onshore part of the Proposed DCO Order Limits	An area that encompasses all planned onshore infrastructure.
Proposed DCO Order Limits	The Proposed DCO Order Limits combine the search areas for the offshore and onshore infrastructure associated with the Proposed Development. It is defined as the area within which the Proposed Development and associated infrastructure will be located, including the temporary and permanent construction and operational work areas.
Planning Inspectorate	The Planning Inspectorate deals with planning appeals, national infrastructure planning applications, examinations of local plans and other planning-related and specialist casework in England and Wales.
Preliminary Environmental Information Report (PEIR)	The written output of the Environmental Impact Assessment undertaken for the Proposed Development in support of statutory consultation. It was prepared to inform the first Statutory Consultation exercise held It presents the preliminary findings of the assessment to

Term (acronym)	Definition
	allow an informed view to be developed of the Proposed Development, the assessment approach that has been undertaken, and the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
Preliminary Environmental Information Report Supplementary Information Report (PEIR SIR)	<p>The PEIR SIR was prepared to inform the second Statutory Consultation exercise held between 18 October 2022 to 19 November 2022.</p> <p>The PEIR SIR provides supplementary environmental information associated with further alternatives onshore routing options and modifications as a result of design evolution from the consultation process. The PEIR SIR is to be read in conjunction with the PEIR.</p>
Proposed Development	The development that is subject to the application for development consent, as described in Chapter 4: The Proposed Development, Volume 2 of the ES (Document Reference: 6.2.4).
Rampion 1	The existing Rampion Offshore Wind Farm located in the English Channel off the south coast of England.
RED	Rampion Extension Development.
Special Area of Conservation (SAC)	A protected site under the Conservation of Habitats and Species Regulations (2017).
Scoping Opinion	A Scoping Opinion is adopted by the Secretary of State for a Proposed Development.
Scoping Report	A report that presents the findings of an initial stage in the Environmental Impact Assessment process.
Secretary of State	The Minister for Department for Energy Security and Net Zero (DESNZ).
Serious damage to human populations	Harm which would be considered substantial such as death(s), multiple serious injuries or a substantial number requiring medical attention.

Term (acronym)	Definition
Serious damage to the environment	Loss or significant detriment to populations of species or organisms, valued sites (including designated sites), valued cultural heritage sites, with lower thresholds for high-value or protected species or sites, contamination of drinking water supplies, ground or groundwater, or harm to environmental receptors.
SFAIRP	So Far As Is Reasonably Practicable
Significant effect resulting from a major accident or disaster	A significant effect resulting from a major accident or disaster is the risk of a major accident or natural disaster occurring which would be intolerable, and for which consent should not be given without further risk reduction.
SINC	Site of Importance for Nature Conservation
SNCI	Site of Nature Conservation Importance
Special Protection Area (SPA)	Areas protected under the Conservation of Habitats and Species Regulations (2017)
SPZ	Source Protection Zone
SSSI	Site of Special Scientific Interest
UK	United Kingdom
Unexploded Ordnance (UXO)	Unexploded ordnance are explosive weapons (bombs, shells, grenades, land mines, naval mines, etc.) that did not explode when they were deployed and still pose a risk of detonation, potentially many decades after they were used or discarded.
WSCC	West Sussex County Council

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