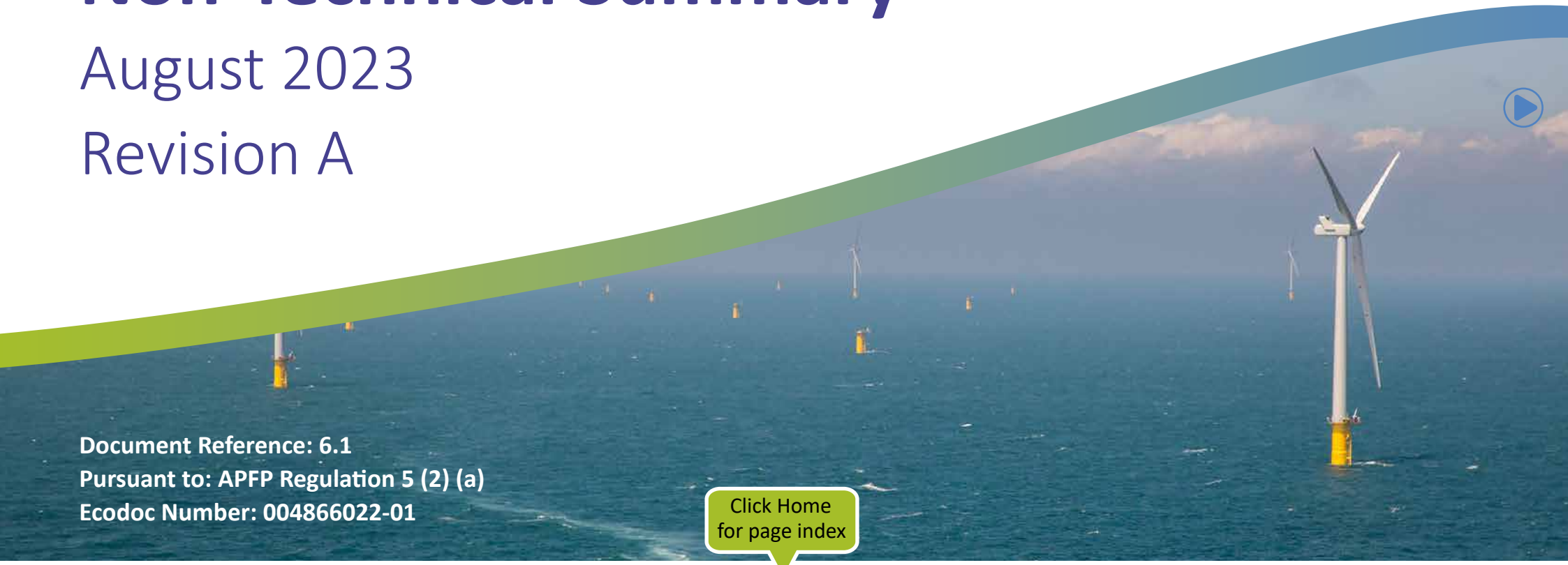
Rampion 2 WIND FARM

Volume 1:

Category 6: Environmental Statement: Non-Technical Summary

August 2023

Revision A



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Several of the photos presented in this NTS show the existing Rampion 1 project; other photos are provided for illustrative purposes only.

List of useful terms

Term	What does it refer to?
Aspect	The different parts of the environment that could be impacted by the Proposed Development, such as marine mammals, commercial fisheries and the water environment. A Chapter in the ES is provided for each relevant aspect.
Baseline environment	The existing environmental conditions, based on the latest available survey and other data. This is used as a benchmark for making comparisons to assess the impact of the Proposed Development.
Black, Red, Amber, Green (BRAG) ratings	For the onshore design where two or more comparable options were being considered, a BRAG appraisal approach was used. Environmental specialists reviewed the different options and defined constraints for each option using the colour coding and rating system.
Department of Energy and Climate Change (DECC)	Department of His Majesty's Government responsible for handling climate change and energy policy. DECC became part of Department for Business, Energy and Industrial Strategy in July 2016.
Department for Business, Energy and Industrial Strategy (BEIS)	BEIS had overall responsibility for leading the government's relationship with business; ensuring that the country has secure energy supplies that are reliable, affordable and clean; ensuring the UK remains at the leading edge of science, research and innovation. BEIS existed until 2023 when it was split to form the Department for Business and Trade (DBT), the Department for Energy Security and Net Zero (DESNZ) and the Department for Science, Innovation and Technology (DSIT).
Development Consent Order (DCO)	This is the means of obtaining consent for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
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.
EIA Regulations 2017	The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. The EIA regulations 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 the project.
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment (EIA). This will be included as part of our application for Development Consent.
Embedded environmental measures	Measures to avoid or reduce environmental effects that have been identified during the EIA process and included within the design of Rampion 2.
Habitats Regulation Assessment (HRA)	The Habitats Regulations (2017) (as amended). The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.
Likely significant effects	It is a requirement of the Environmental Impact Assessment Regulations to determine the likely significant effects of Rampion 2 on the environment. Effects can be positive or negative.

Term	What does it refer to?
Marine Management Organisation (MMO)	MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs. MMO license, regulate and plan marine activities in the seas around England so that they are carried out in a sustainable way.
National Policy Statements (NPSs)	NPSs comprise the Government's objectives for the development of Nationally Significant Infrastructure Projects (NSIPs) and set out national policy against which NSIP applications are assessed. There are currently 12 NPSs of which six relate to energy generation.
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects are major infrastructure developments in England and Wales which are consented by DCO. These include proposals for offshore wind farms with an installed capacity over 100MW.
Non-Technical Summary (NTS)	A Non-Technical Summary presents a summary in non-technical language of the information provided in a technical document (in this case the Environmental Statement).
Natural England	The government advisor for the natural environment in England.
Offshore Wind Farm	An offshore wind farm is a group of wind turbines in the same location (offshore) in the sea which are used to produce electricity.
Ornithology	The study and consequent knowledge of birds with all that relates to them.
Potential effect	A change or impact that could theoretically occur to a receptor as a result of development.
Receptor	The receiving environment that may be impacted by the Proposed Development. These include population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, landscape and seascape.
RED	Rampion Extension Development Ltd.
Renewable energy	Energy that is collected from renewable resources, which are naturally replenished on a human timescale which includes wind.
Significance	The predicted level of effect on a receptor, taking into account the sensitivity of the receptor and the nature and severity of the change caused by the Proposed Development.
Statements of Common Ground	Documents which set out where agreement has been reached between the project and other parties on wide ranging issues, such as the approach to the assessment including data collection and methodology used to assess impacts and the appropriateness of mitigation proposed.
The Crown Estate (TCE)	A business that manages the seabed and half the foreshore around England, Wales and Northern Ireland, and play a fundamental role in the sustainable development of this national asset, including the UK's world-leading offshore wind.
The Planning Inspectorate	The executive agency which deals with NSIPs on the Secretary of State's behalf.
Water Framework Directive	A substantial piece of EU water legislation that came into force in 2000, with the overarching objective to get all water bodies in Europe to attain Good or High Ecological Status. River Basin Management Plans have been created which set out measures and potential mitigation to ensure that water bodies in England and Wales achieve 'Good Ecological Status'.

1. Introduction

This Non-Technical Summary (NTS) presents a summary of the information and environmental assessment undertaken for the Proposed Development, as set out in the more technical detailed Environmental Statement (ES).

1.1 Purpose of this Non-Technical Summary

The aim of this NTS is to provide a good understanding of the environmental issues relating to Rampion 2 Offshore Wind Farm, also referred to as 'Rampion 2' in this NTS.

The focus of the ES is to enable the local community and other stakeholders, and the Secretary of State as the decision maker to understand the likely significant environmental effects of Rampion 2.

This NTS includes a description of Rampion 2, a summary of the consultation process and the Environmental Impact Assessment (EIA) work undertaken. **Table 1–1** is a summary of each of the sections to help you navigate this NTS so that you can find the information that is of most interest to you.

Table 1–1 What's included?

Section	What it is about
1. Introduction	The remainder of this Introduction section introduces what Rampion 2 is, where it is located and why it is needed. An introduction is also given to the Applicant, Rampion Extension Development Ltd (RED).
2. Site selection and alternatives	This section provides a summary history of the design evolution of Rampion 2 and what alternatives have been considered.
3. What is being proposed?	This section explains how Rampion 2 will be built and how long construction will take.
4. Environmental impact assessment	This section explains how the assessment has been undertaken and how it has been informed by consultation and stakeholder engagement.
5. Environmental assessment offshore	This section provides a summary of the approach to environmental assessment and the possible environmental effects experienced offshore as a result of Rampion 2. For each of the offshore environmental topics, the section provides an overview of how the environmental effects have been assessed, a description of the existing environment, overview of environmental measures to avoid, prevent, reduce or, if possible, offset any identified likely significant environmental effects as a result of Rampion 2.
6. Environmental assessment onshore	This section provides a summary of the approach to environmental assessment and the possible environmental effects experienced onshore as a result of Rampion 2. For each of the onshore environmental topics, the section provides an overview of how the environmental effects have been assessed, a description of the existing environment, overview of environmental measures to avoid, prevent, reduce, or, if possible offset any identified likely significant environmental effects as a result of Rampion 2.

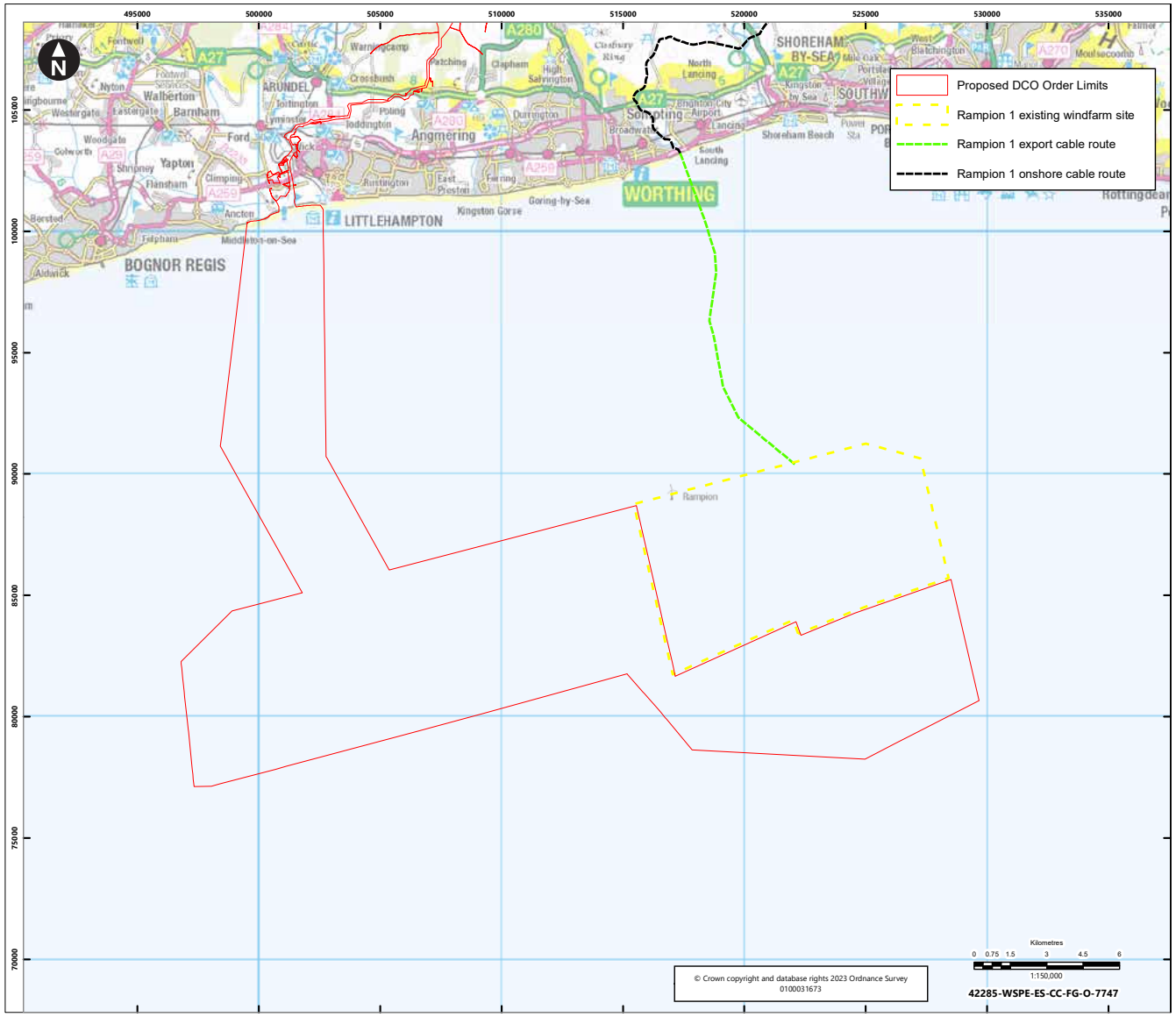
1.2 Rampion 2

Rampion 2 is a proposed expansion of the existing Rampion offshore wind farm (Rampion 1) located in the English Channel off the Sussex coast. Rampion Extension Development Limited (hereafter referred to as 'RED') is developing Rampion 2.

Figure 1–1 shows the location of Rampion 1 and Rampion 2.

Rampion 1 is located between 13km and 25km from the Sussex coast. It has 116 wind turbine generators (WTGs) with a 140m blade tip height and an installed capacity of 400 megawatts (MW). The offshore elements of Rampion 2 will be located adjacent to Rampion 1, occupying an area of approximately 160km^2. Rampion 2 will have up to 90 WTGs with a 325m blade tip height. Marine cables will connect the WTGs to up to three offshore substations, and up to four cables from these substations will transfer the electricity onshore.

Figure 1–1 Offshore part of Rampion 2



The onshore parts of Rampion 2 (shown in **Figure 1–2**) comprise cable circuits to be buried underground along a route of approximately 38.8km from a landfall at Climping in West Sussex to a new onshore substation at Oakendene, near Cowfold. This will then connect to the existing National Grid Bolney substation as the National Grid interface location in Mid Sussex.

1.3 Who is Rampion Extension Development (RED)?

RED is a joint venture between RWE Renewables UK Limited (RWE), Enbridge, and a Macquarie-led consortium. RWE and Enbridge are also legacy shareholders in the Rampion 1 project, with RWE being the majority shareholder and Development Service Provider for the joint venture.

RWE is a global energy company. With an extensive investment and growth strategy, the company will expand its powerful, green generation capacity to 50 gigawatts internationally by 2030. RWE has locations in Europe, North America, and the Asia-Pacific region.

The Macquarie consortium is an investor in many other UK renewable energy assets, includes Macquarie European Infrastructure Fund 5, Corio Generation and USS pension fund.

Enbridge, also a shareholder in Rampion 1, is a leading North American energy infrastructure company with natural gas, oil and renewable power networks and a growing European offshore wind portfolio.

Figure 1–2 Onshore part of Rampion 2

1.4 The role of renewable sources of energy

Rampion 2 will support the UK Government's target of delivering over a third of UK electricity from offshore wind by 2030, up from 10% today. National policy and legislation, influenced by the international drivers, highlight the need for renewable energy infrastructure. As a renewable energy project with a generating capacity of in excess of 100MW, Rampion 2 directly responds to these ambitions and will contribute to the UK's renewable energy and climate targets. Further details on relevant policy and legislation are provided in **Chapter 2: Policy and legislative context, Volume 2** of the ES (Document Reference: 6.2.2).

The Planning Act 2008 and associated regulations form the basis for applications for National Significant Infrastructure Projects (NSIPs) such as Rampion 2, and the policy content for their consideration and determination is set out in National Policy Statements (NPSs). The UK's commitment to renewable energy has been captured in the publication of the following NPSs which are of direct relevance for the development of Rampion 2:

- EN-1 Overarching Energy (DECC, 2011a);
- EN-3 Renewable Energy Infrastructure (DECC, 2011b); and
- EN-5 Electricity Networks (DECC, 2011c).

The UK Government in the recent Energy White Paper announced a review of the energy NPSs to ensure they accommodate the Government's 2050 net zero commitment:

- Draft EN-1 Overarching Energy (Department for Business, Energy and Industrial Strategy (BEIS), 2021a);
- Draft EN-3 Renewable Energy Infrastructure (BEIS, 2021b); and
- Draft EN-5 Electricity Networks (BEIS, 2021c).

Since the release of the Draft NPSs in 2021 (BEIS, 2021a; 2021b; 2021c) the Department for Energy Security and Net Zero (DESNZ) have released 2023 Draft NPSs in order to increase focus on energy security, speed up the planning process and protect and enhance the environment on land and sea, with offshore wind as a critical national priority. DESNZ released the following:

- Draft EN-1 Overarching Energy (DESNZ, 2023a);
- Draft EN-3 Renewable Energy Infrastructure (DESNZ, 2023b); and
- Draft EN-5 Electricity Networks (DESNZ, 2023c).

The 2011 NPSs remain in force until the draft NPSs are approved.

The National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England and how these should be applied. The NPPF helps inform decision-making on planning applications and includes policies and principles with regard to the protection and conservation of the natural and built environment as well as sustainable growth and development which are relevant to Rampion 2.

The whole of the onshore project footprint lies within the administrative boundaries of West Sussex County Council, Arun District Council, Horsham District Council, Mid-Sussex District Council and the South Downs National Park Authority. Relevant local development plans have been identified so that policy conflicts can be avoided wherever possible.

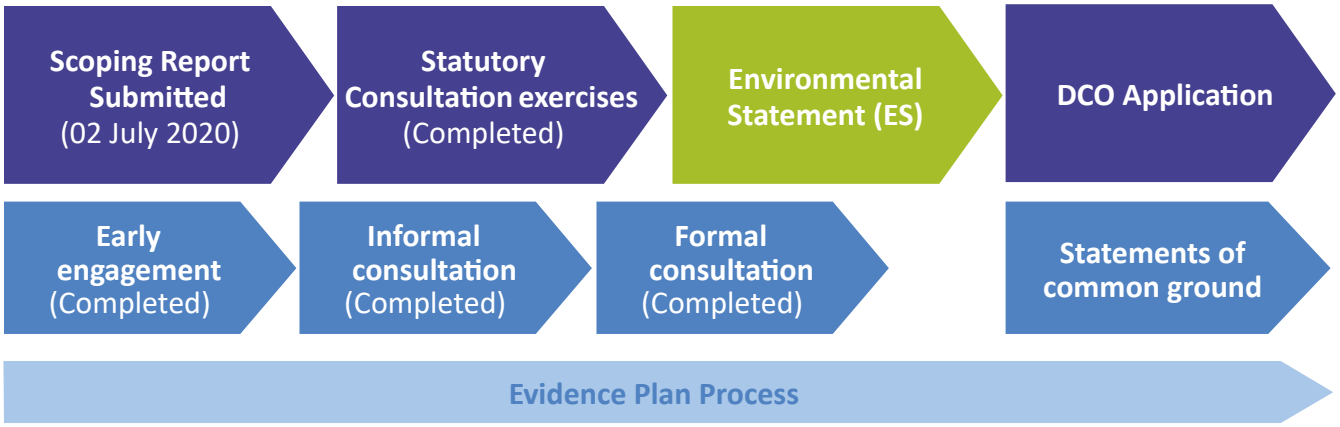
The UK Marine Policy Statement (MPS) provides the policy framework for preparing marine plans and aims to contribute to sustainable development of the UK marine area. The MPS presents offshore wind as an integral component of renewable energy in the UK with some of the best wind resources in the world. Offshore wind will also allow clear progression towards the national greenhouse gas and carbon targets. The South Inshore and South Offshore Marine Plans are of relevance to the offshore infrastructure for Rampion 2.

The ES takes full account of wider planning considerations at the national and regional level both on the land and at sea.

In addition, a range of environmental legislation at International, European and National level will apply to the EIA for Rampion 2. The EIA has been undertaken in line with this legislation and policy and specifically in accordance with the requirements of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, hereafter referred to as the 'The EIA Regulations 2017'. In addition, the EIA has taken into consideration a range of up-to-date guidance documents.

1.5 Consenting process

Graphic 1–1 Consenting process for Rampion 2



As Rampion 2 will have a capacity greater than 100MW it is defined as a Nationally Significant Infrastructure Project (NSIP) under the Planning Act 2008. An application for development consent for Rampion 2 will therefore be required to be submitted to the Planning Inspectorate, who will consider the application and make a recommendation to the Secretary of State (SoS) for DESNZ, who will decide on whether development consent should be granted. This consenting process is shown in **Graphic 1–1** and is described in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5).

The Development Consent Order (DCO) Application will be accompanied by an Environmental Statement (ES) (in accordance with The EIA Regulations 2017). The ES has been prepared to enable consultation bodies, including members of the public and other stakeholders, to develop an informed view of the likely significant effects of Rampion 2. This document is a non technical summary of the ES.

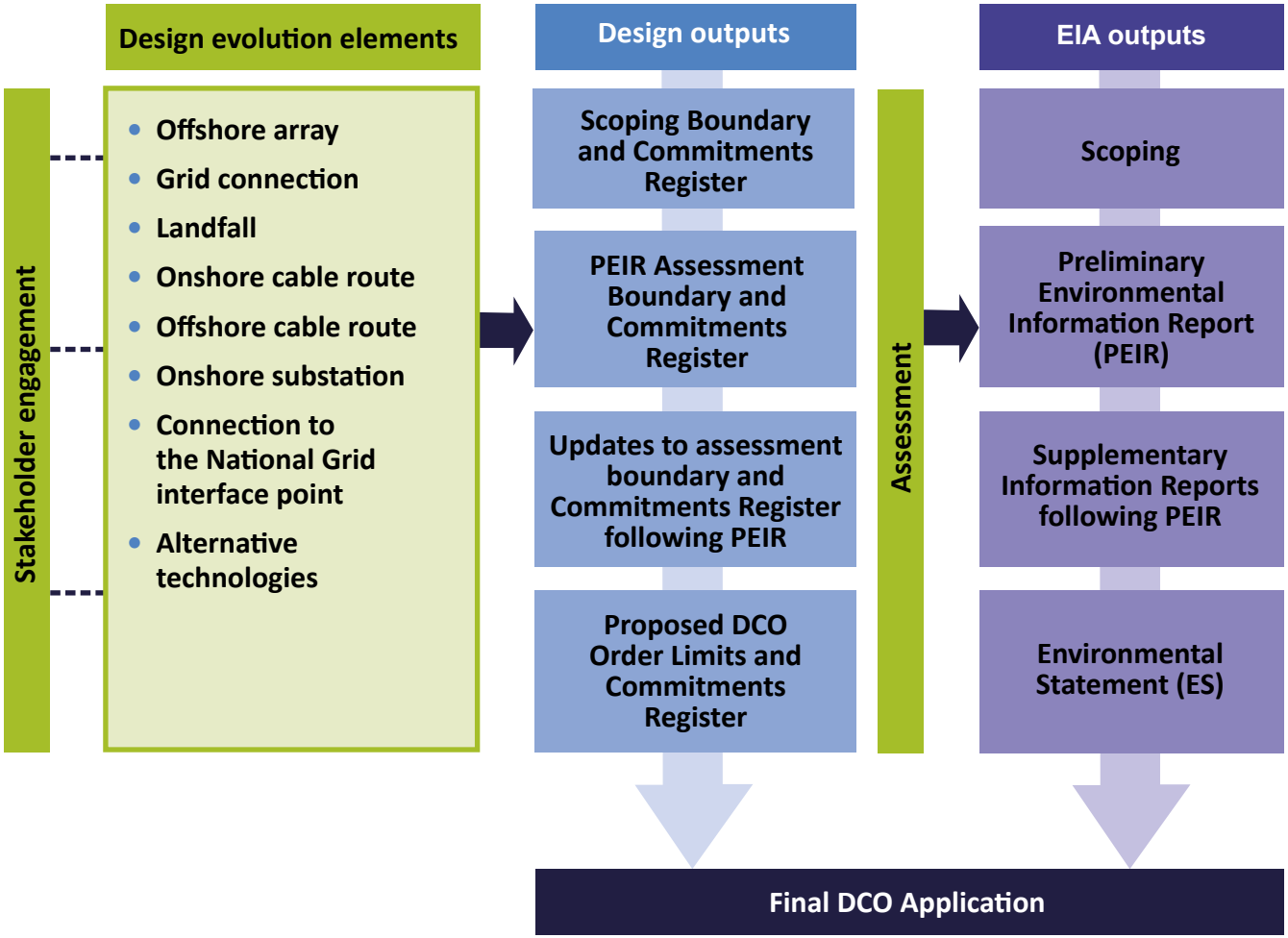
2. Site selection and alternatives

2.1 Introduction

The Rampion 2 site selection and design evolution process has been a fundamental part of the EIA. It has been an iterative process which has been guided by detailed specialist engineering, environmental assessment and engagement with local stakeholders, regulatory stakeholders and non-governmental organisations. Chapter 3: Alternatives, Volume 2 of the ES (Document Reference: 6.2.3) describes the reasonable alternatives that were considered during the EIA process.

This design process led to opportunities for the development of environmental measures which have been adopted to reduce the potential for environmental impacts and effects. These have been included directly into the design of Rampion 2 as commitments, and are referred to as 'embedded environmental measures'. A range of embedded environmental measures have been identified and are further discussed in **Section 4.6**. Examples include avoidance of sensitive receptors and best practice environmental measures which were also adopted as part of Rampion 1. **Graphic 2–1** provides a summary of the design evolution process.

Graphic 2–1 Design evolution process



The Scoping Report was based on a Scoping Boundary which at that early stage of the project combined the Areas of Search for the offshore and onshore infrastructure associated with Rampion 2. It defined the area within which Rampion 2 and associated infrastructure would be located. The project was then refined post Scoping taking account of the consultation feedback. This resulted in the project boundary which was then presented at the first Statutory Consultation exercise, at which the Preliminary Environmental Information in respect of the project was presented for consultation.

Further design evolution has occurred since the Scoping and Statutory Consultation Preliminary Environmental Information Report (PEIR) (RED, 2021) stages (including PEIR Supplementary Information Report (SIR) (RED, 2022), Further Supplementary Information Report (FSIR) (RED, 2023a) and the Preliminary Environmental Information (PEI) – Bolney Substation Extension Works (RED, 2023b). Activities have been aimed at ensuring that protecting the environment is central to the design of Rampion 2 from the outset and have included the following activities for the refinement of the project's boundaries whilst having regard to and responding to consultation responses at each stage:

- updating of constraints mapping as new environmental information became available;
- analysis of information collected from EIA surveys;
- identification of technical construction challenges;
- collaborative working with technical environmental specialists and engineers;
- detailed review of land ownership; and
- consultation and engagement with stakeholders.

This process has resulted in the refinement to the final proposed DCO Order Limits.

2.2 Offshore design evolution

RED was awarded the development rights for Rampion 2 in September 2019, and undertook assessments and evaluations to identify the best possible wind farm site. This considered areas adjacent, to the west of Rampion 1 ('the extension area'), the remainder of the area consented as part of Rampion 1 but not developed (the remaining Zone 6 area), and an additional area that had been the subject of an agreement for lease from the Crown Estate but was not ultimately included in the Order Limits for Rampion 1. An initial boundary was identified based on the combination of these areas. Within this boundary, the Scoping Boundary was identified which took account of feasibility concerns and 'hard constraints' which must be avoided. These included:

Feasibility concerns

- navigation risk;
- landscape/seascape, visual and heritage;
- the biological environment and ecology;
- socio-economics (including tourism, recreation, and commercial interests);
- ground conditions and bathymetry including water depth; and
- wind resource and engineering aspects.

'Hard constraints'

- disposal sites;
- oil and gas wells, and other surface and subsurface structures;
- International Maritime Organisation shipping routes;
- consented developments;
- wrecks; and
- active pipelines and cables.

The Scoping Boundary for the offshore wind farm covered the extension area to the west of Rampion 1, the remaining Zone 6 area to the southeast of Rampion 1, plus a small marine cable link area to join these two areas. No wind turbine generators or substations will be located in this link area.

Offshore cable export corridor

A broad offshore export cable corridor was defined between the offshore wind farm and a landfall at Climping, West Sussex. The process for selecting Climping as the landfall location is described below. The following design principles were used to initially identify the most appropriate route from the offshore windfarm to shore:

- identifying the shortest route as a preference for cable routing to minimise cost, construction timescales, and transmission losses;
- avoiding key sensitive features and existing activities where possible and where not, seeking the potential to mitigate impacts; and
- minimising potential disruption to populated areas.

The Scoping Boundary for the offshore export cable corridor was located on the northern boundary of Rampion 2, to ensure the shortest route, and to the west of Rampion 1 to avoid crossing the existing export cables. It also avoided the Kingmere Rocks Marine Conservation Zone, and an area of active aggregates extraction licence areas.

Following Rampion 2's first Statutory Consultation exercise on the PEIR in July 2021 (RED, 2021), no further changes to the export cable corridor boundary have been considered. However, a study was carried out to explore micrositing the cable within the offshore cable corridor to avoid sensitive features such as black seabream nests.

Offshore refinements since the Scoping Stage

Following Scoping, two workshops were held which brought together technical engineering and environmental specialists. These considered feedback from stakeholders and the Scoping Opinion, in order to reduce the area of the Scoping Boundary to the PEIR Assessment Boundary. As a result of concerns about shipping and navigation issues, the eastern edge of the Scoping Boundary was refined to increase the distance to the Dover Strait Traffic Separation Scheme, and the western edge was refined to provide more space between the array area and the Marine Conservation Zone containing Owers and Mixon rocks. Concerns regarding visual impact have also been considered by reducing the Zone 6 area in the east, to reduce the impact from the Sussex Heritage Coast. In addition, this eastern area was reduced in order to ensure it was fully covered by existing digital aerial ornithological surveys. Further refinements were also made to reduce the area of the offshore export cable corridor to take account of engineering requirements.

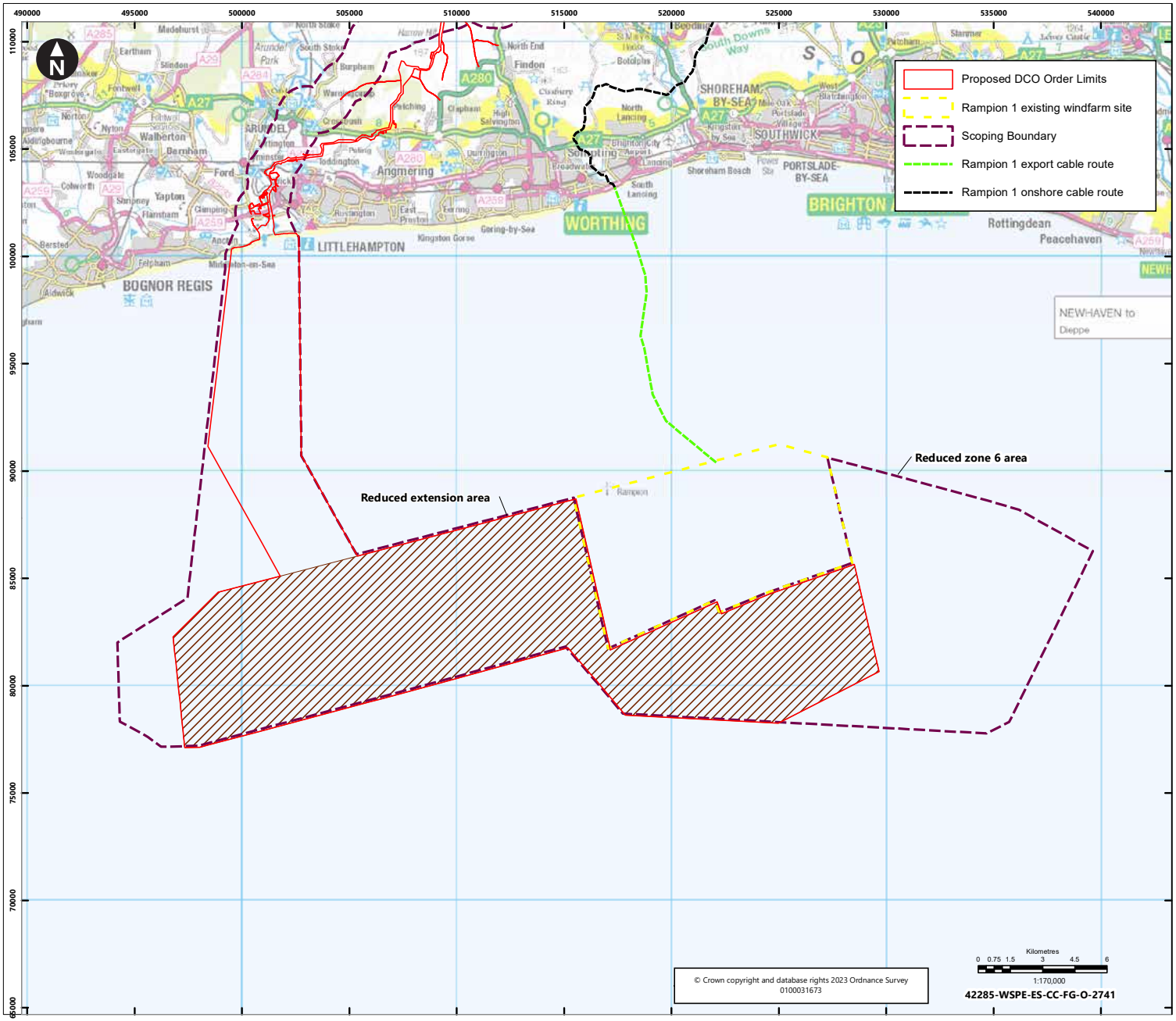
Offshore refinement since first Statutory Consultation exercise

Further design evolution has occurred since first Statutory Consultation exercise in July 2021, which has resulted in the reduction of the PEIR Assessment Boundary to the proposed DCO Order Limits (**Figure 2–1**). Reductions in the offshore array areas have been made to address consultation feedback from stakeholders, key concerns raised included:

- Shoreham Port - disruption to vessel access to the Dover Straight
- Maritime and Coastguard Agency – concerns raised on lines of sight for Search and Rescue
- UK Chamber of Shipping – navigational safety concerns, particularly at the western extent of the array area.
- UK Chamber of Shipping – deviation required to well established shipping routes.

In response to these concerns, the layout of the array area has been amended to introduce two separate areas where no WTGs will be built, and the proposed DCO Order Limits have been refined, thereby mitigating visual impacts, reducing the disruption to marine traffic, and addressing the line of sight safety concerns.

Figure 2–1 Offshore design evolution



2.3 Onshore design evolution

Introduction

A site selection exercise was undertaken to select a landfall location, an onshore cable corridor, and onshore grid connection location. All the available feasible options for onshore sites were identified and appraised environmentally, technically and commercially. These were then subsequently refined to create the proposed DCO Order Limits.

Grid connection and landfall

Large scale offshore wind farms such as Rampion 2 need to be connected into National Grid's 400kV electricity transmission system, as opposed to the local Distribution system which is generally designed to accommodate smaller generators and feed local homes and businesses. Rampion 1 feeds its 400MW output into Bolney National Grid Substation in Mid Sussex and makes landfall at Brooklands Park. It is not possible to use or readily modify the Rampion 1 onshore infrastructure since these cables and substation equipment already operate at full capacity and were only designed for the original wind farm approved in 2014.

Six potential grid connection locations were initially identified, but three (Ninfield, Chilling, and Fawley) were discounted early in the appraisal process as due to a combination of technical, environmental and higher costs associated with construction which would render the overall wind farm not economically viable.

In addition to considering the landfall used for Rampion 1 at Brooklands Park in East Worthing, seven additional landfall options were identified. A suitable landfall requires sufficient physical space onshore for the onshore cabling, construction operations including a Horizontal Directional Drilling (HDD) rig, and a large inshore area for export cable laying vessels. It is also crucial that there is a workable onwards route towards the eventual grid connection point. Two options were immediately discounted (Saltdean and Rottingdean) as steep cliffs at these locations mean there is uncertainty over the feasibility of construction. Six landfall options were therefore assessed.

This process led to a shortlist of seven potential landfall to grid connection options:

- Brooklands to Bolney;
- Climping to Bolney;
- Climping to Lovedean;
- Church Norton to Lovedean;
- Bracklesham to Lovedean;
- East Wittering to Lovedean; and
- Tide Mills to Little Horsted.

A constraints mapping approach was used to assess the environmental, consenting and technical constraints associated with each of these options. Constraints data was gathered and presented on maps, and constraints were described as 'hard' or 'soft' constraints. 'Hard' constraints are generally areas that must be avoided, such as internationally protected sites for biodiversity or historic environment and settlements. 'Soft' constraints are those which need to be considered by the site selection process but on their own will not generally mean an option is discounted, such as landscape and visual designations, public rights of way, nationally designated sites for biodiversity, and technical constraints such as motorways and railway lines.

The mapping was ground-truthed through site visits, and the seven options were compared, based on the available information including length of route, environmental issues, technical issues and risk factors. This led to the selection of the Climping to Bolney option as the most likely to minimise environmental impacts while remaining technically feasible.

Onshore cable corridor

The Scoping Boundary of the onshore cable corridor from Climping to Bolney included options for sections of the route where there was insufficient information to choose the best route (at Climping, Warningcamp, Wepham, Norfolk Clump, Washington, Windmill Quarry, Henfield, Bolney Road / Kent Street, and around the substation areas of search). Following scoping, the number of options was reduced through a process that included stakeholder engagement, non-statutory consultation, multidisciplinary workshops and additional environmental surveys.

Design refinement workshops were carried out to compare the potential alternatives at each location using a BRAG (Black, Red, Amber, Green) appraisal approach. This classified the constraints for each option using a colour coding and rating system, including the following constraints:

- biodiversity;
- historic environment;
- agricultural land;
- landscape and visual;
- traffic and transport;
- planning policy and planning applications;
- residential properties and other sensitive land uses;
- flood risk and surface water; and
- technical concerns.

The BRAG (Black, Red, Amber, Green) ratings were used to compare the potential alternatives, and as a result of this process the Scoping Boundary was reduced in size and most options were removed, to create the onshore part of the PEIR Assessment Boundary This was presented at Rampion 2's first Statutory Consultation exercise in July 2021 and the Preliminary Environmental Information was presented in the PEIR (RED, 2021). At PEIR stage two options remained including at Warningcamp and cable corridors to connect to the onshore substation options.

Following Rampion 2's first Statutory Consultation exercise on the PEIR in July 2021, alternatives and modifications were identified for the onshore part of the original PEIR Assessment Boundary, taking into account of consultation responses.

These alternatives and modifications identified for the onshore part of the original PEIR Assessment Boundary were included within Rampion 2's second and third Statutory Consultation exercises supported by the following reports:

- Preliminary Environmental Information Report - Supplementary Information Report (PEIR SIR), published in October (RED, 2022); and
- Preliminary Environmental Information Report – Further Supplementary Information Report (PEIR FSIR), published in February (RED, 2023a).

Following these Statutory Consultation exercises the Proposed Development has been refined further with the final onshore cable routes and locations being identified from the options described in the PEIR, PEIR SIR and PEIR FSIR, and the proposed DCO Order Limits have been refined.

Onshore substation

A new substation is needed to increase the cable route voltage from 275kV to 400kV before it can connect to the grid at the existing National Grid Bolney substation. Seven substation search areas were identified during Scoping, which were located within 5km of Bolney substation and avoided constraints such as residential properties and designated sites.

Following Scoping, further design work showed that an area of search of approximately 9 hectares (ha) is required to site the substation including areas for environmental measures such as landscaping, and provide room to support the temporary construction works. Therefore, three of the initial substation search areas were discounted (Snake Harbour, Frylands, and Eight Acres Shaw).

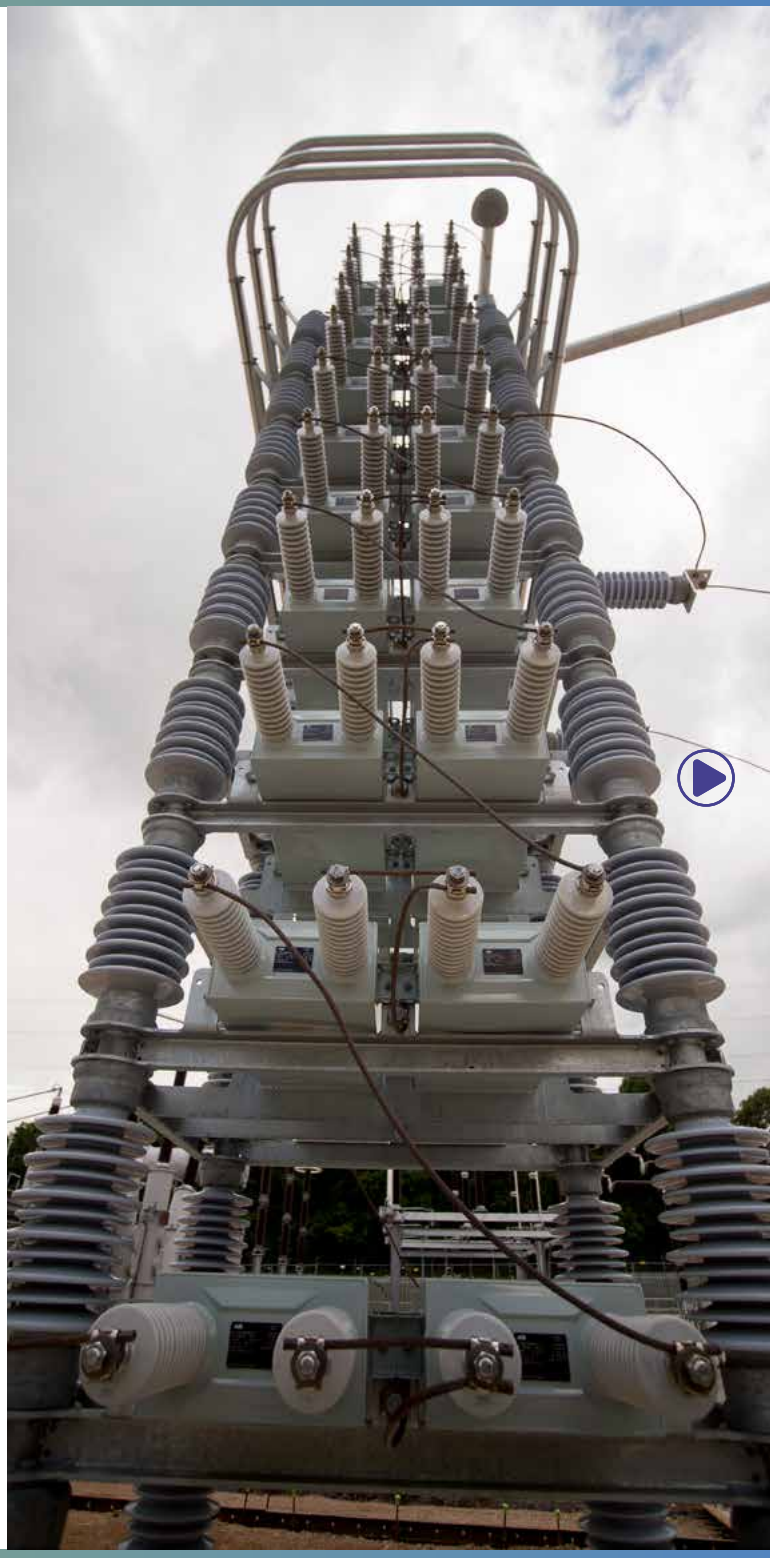
Onshore substation search area refinement workshops were carried out to consider technical, environmental, stakeholder and land ownership issues at each of the four remaining sites, and to reduce the number of options. The same BRAG appraisal approach and constraints were used as for the refinement of the onshore cable corridor. As a result of this appraisal process, the sites at Star Lane and Wineham Lane South were discounted, as they were found to have the most environmental constraints and stakeholder concerns.

Both Bolney Road / Kent Street and Wineham Lane North substation search areas and respective options for the cable route to connect to the two substation search areas were retained within the PEIR Assessment Boundary and included within Rampion 2's first Statutory Consultation exercise in July 2021 (RED, 2021).

Following Rampions 2's first Statutory Consultation exercise, a further site selection process was undertaken having regard to the responses to that consultation in addition to further environmental and engineering investigations, and the chosen onshore substation location Bolney Road/Kent Street (hereafter referred to as Oakendene) was presented at Rampion 2's second Statutory Consultation exercise in October (RED, 2022).

There were no further changes to the onshore substation location following supplementary Statutory Consultation, however a fourth and final Statutory Consultation exercise was undertaken from 28 April 2023 to 30 May (RED, 2023b).

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.



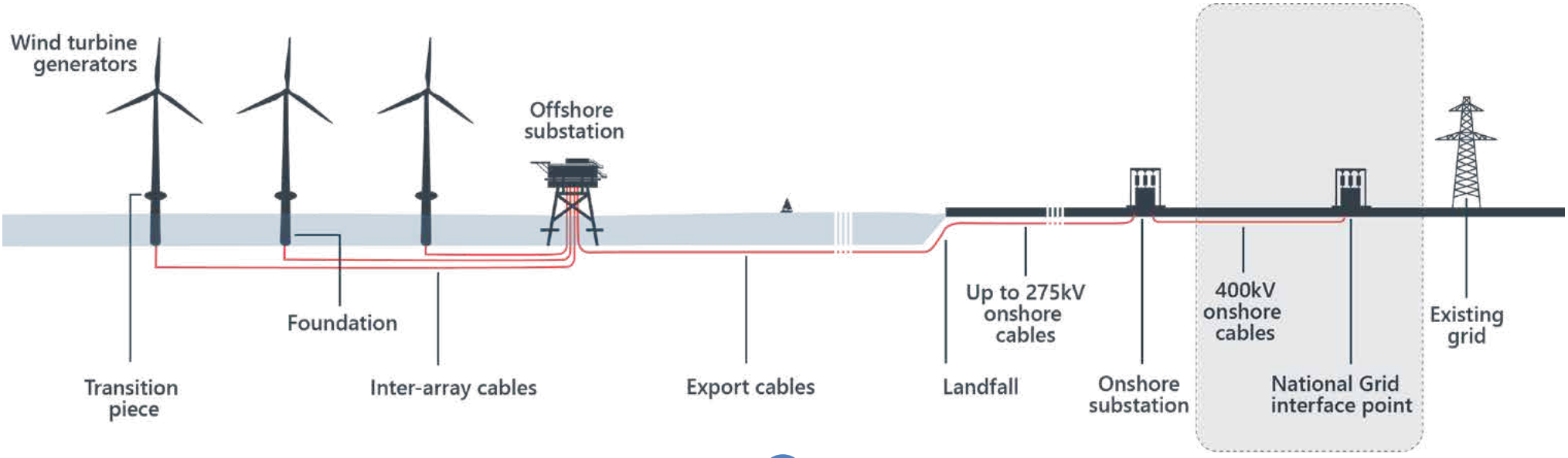
3. What is being proposed?

3.1 Key components of Rampion 2

Rampion 2 comprises both onshore and offshore infrastructure associated with the proposed offshore wind farm, as described in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4). The components of Rampion 2 are summarised in **Graphic 3–1** and include:

- Offshore wind turbine generators (WTGs), associated foundations and inter-array cables, with the wind farm not exceeding 90 WTGs;
- Up to three offshore substations;
- Up to four offshore export cables, each in its own trench;
- Up to two offshore interconnector export cables between the offshore substations;
- A single landfall site using Horizontal Directional Drilling (HDD) installation techniques;
- Buried onshore cables in a single corridor approximately 38.8km in length using trenchless crossing, and trenching and backfilling installation techniques;
- A new onshore substation, proposed near Cowfold, Horsham District, that will connect to an extension to the existing National Grid Bolney substation; and
- Extension to and additional infrastructure at the existing National Grid Bolney substation to connect Rampion 2 to the national grid electrical network.

Graphic 3–1 The key components of Rampion 2



3.2 Offshore development

Wind Turbine Generators

The WTGs will comprise three WTG blades linked to an axis and attached to a nacelle which houses a gearbox, generator, and transformer. This will be placed at the top of a tower which may be assembled in sections on top of a foundation. The nacelle will be able to rotate to face the oncoming wind direction. The transformer in the nacelle steps up generated electricity to a higher voltage to reduce losses during transmission over the longer distances to the substation. The WTGs will have a height to blade tip of up to 325m from the Lowest Astronomical Tide (LAT), with a clearance between the lowest blade and the Mean High Water Springs of no less than 22m. The WTG towers, nacelles and blades will be transported from a port to the Rampion 2 array area on the installation vessels or on separate transport vessels and assembled in location.

The offshore components of Rampion 2 refer to works seaward of Mean High Water Springs (MHWS).

WTG foundations

The type of WTG foundation to be installed will be determined from the results of geotechnical investigations, existing environmental sensitivities and final WTG selection. It is anticipated that more than one type of foundation may be used for Rampion 2. The following foundation design options are currently being considered for Rampion 2:

- monopiles;
- multi-leg foundations with pin piles; and
- multi-leg foundations with suction buckets.

The foundations will be fabricated offsite, stored at a suitable port facility and transported to site as needed. Specialist installation vessels will be needed to transport and install foundations.

Each foundation type may require some form of seabed preparation which may include seabed levelling and removing surface and subsurface debris. Scour protection material may be required around the base of some or all WTG or offshore substation foundations to protect from current and wave action ensuring structural integrity.

Offshore substations

Offshore substations collect the electricity generated by the WTGs, via electrical cables, so that it can be transmitted onshore and then to the National Grid. It is anticipated that there will be up to three offshore substations. The substations will transform generated electricity from the WTGs to a higher voltage for transmission to shore via export cables. Each substation will comprise a multiple-tier platform installed on a foundation. The foundation design options being considered for the offshore substations are monopiles and multi-leg foundations with pin piles. The substation platform will likely include components such as transformers, batteries, generators, switchgear, fire systems, and modular facilities for operational and maintenance activities. As with the WTG foundations, scour protection material may be required. The location and extent of the offshore substations will be confirmed through the detailed design process, but they will be located within the proposed DCO Order Limits.

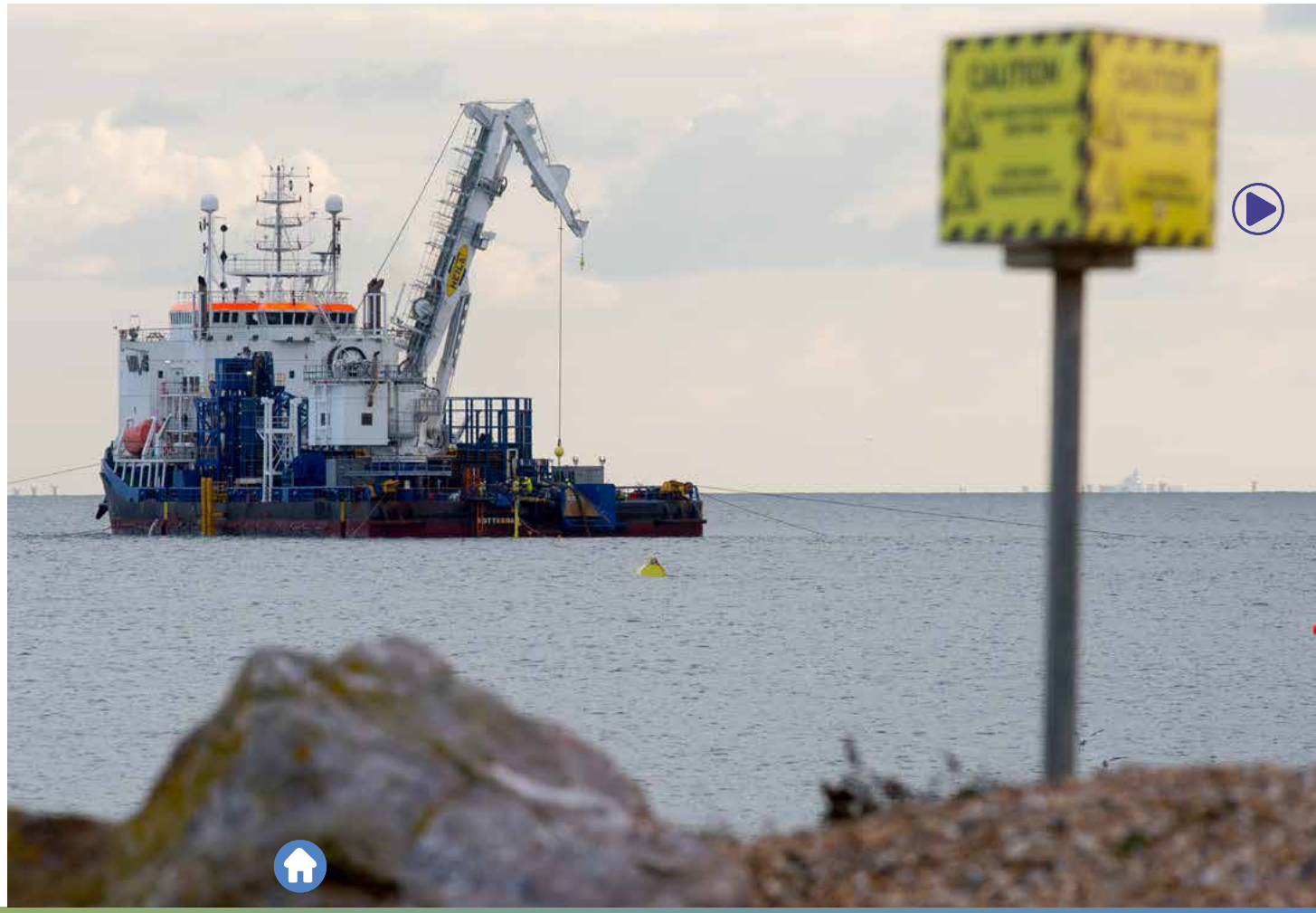
Inter-array cables

Subsea array cables will connect the WTGs to each other in strings. These array cable strings will also connect the WTGs to the offshore substations. The array cables will typically be buried below the seabed surface depending on the outcome of the cable burial risk assessment. The final depth of the cables will be dependent on the seabed geological conditions and the risks to the cable (for example from anchor drag damage). The installation of the cables is expected to require either ploughing, trenching, jetting, or a combination of these techniques. Cable installation may require some form of seabed preparation and following installation the addition of any required cable protection.

Export cables

Rampion 2 may use two offshore interconnector export cables to link together the offshore substations in the array area. This provides the transfer of generated power from the east side of the site to the west side where the export cable corridor is located. Electricity from the offshore substations will be transmitted via up to four export cables to the transition joint bays (TJBs) located at the landfall near Climping Beach. It is anticipated the cables will be laid in separate trenches at different times and installed via either ploughing, jetting, trenching, or post-lay burial techniques. The choice of technique will be dependent on ground conditions along the specific cable routes. As with the inter-array cables, the cable installation may require some form of seabed preparation and following installation the addition of any required cable protection.

The offshore export cables will come ashore between Middleton on Sea and Littlehampton at Climping. To reduce the impact of the landfall, HDD is to be used to install ducts that will house the cables under Climping beach. The offshore export cables will be pulled ashore through these pre-installed HDD ducts and will interface with the onshore cables at a TJB, where they will be joined. A temporary construction compound will be required during construction and this will be located behind Climping beach.



3.3 Onshore development

Onshore cable corridor

The onshore cable corridor is routed from the landfall at Climping through to a new substation at Oakendene, and then from the new onshore substation at Oakendene to the existing National Grid Bolney substation. This also includes extension to and additional infrastructure at the existing National Grid Bolney substation, Mid Sussex District to connect Rampion 2 to the national grid electrical network. The onshore cable corridor is approximately 38.8km in length and will include:

- the typical cable construction corridor will be 40m in width (which varies across the length of the corridor);
- where trenchless crossing compounds are required extra space has been allowed for in the Order Limits;
- temporary infrastructure including trenchless crossing areas; and
- permanent infrastructure corridor width up to 25m (or wider at trenchless crossing locations), including HVAC transmission cables and associated joint bays.

The onshore components of Rampion 2 refer to works landward of Mean High Water Springs.

During installation of the onshore cables, the topsoil and subsoil will be stripped and stored on site within the temporary working corridor and stored in separate stockpiles. The trenches will then be excavated using a mechanical excavator, and the cables will be installed into the open trench. The cables are then buried by backfilling the trench with the excavated material before the land is reinstated to its previous use. Where there are road, rail, water, footpaths, third party services, and other crossings along the cable route, each crossing will be individually reviewed/surveyed during detailed design to confirm the crossing methodology employed and location. Open cut crossing methodology will predominantly be used. Where appropriate, trenchless crossing techniques will be used to cross, for example, main watercourses, railways and roads that form part of the Strategic Highways Network. Along the cable route joint bays will be constructed to enable cable installation and cable jointing, and link boxes where there will be ground level manhole for inspection, with these locations to be determined during the detailed design phase.

During construction temporary construction compounds will be required along the cable corridor for landfall works, trenchless crossings and logistics (storage of materials and equipment, location of CBS batching plant and welfare facilities and office space). Five sites have been identified as locations for temporary construction or logistic compounds:

- Climping compound (approximately 61,300m^2);
- Washington compound (approximately 39,100m^2);
- Oakendene substation compound (approximately 25,000m^2);
- Oakendene west compound (50,000m^2); and
- Existing National Grid Bolney substation compound (approximately 3,500m^2).

Following completion of constructions works, the temporary construction compound facilities will be removed, and each compound site will be returned to its original state.

Temporary construction compounds will also be required where trenchless crossing techniques are used along the onshore cable route to cross features such as main watercourses, railways and roads that form part of the Strategic Highways Network. These trenchless crossing temporary construction compounds typically have an area of 50m x 75m.

A temporary construction HDD compound will also be required for landfall works, with the temporary construction compound being used for the HDD activities, cable pulling and construction of the TJBs. The landfall temporary construction HDD compound will be located behind Climping beach either approximately 600m or 900m north east of Atherington with an area of approximately 100m x 120m.

Temporary construction access points are required along the onshore cable corridor to allow the transportation of materials, equipment and personnel to and from the construction sites. These temporary construction access points will allow access to the construction corridor where there will be a temporary construction haul road running along the length of the onshore cable route, except for locations where there are trenchless or road crossings.

All proposed temporary construction compounds, temporary construction accesses and permanent accesses are located within the proposed DCO Order Limits.

A new onshore substation

Following assessment of a number of options, the onshore substation site at Oakendene near Cowfold was selected.

The purpose of the new onshore substation at Oakendene is to increase the onshore cable route voltage to the 400kV required to connect to the existing National Grid Bolney substation. The onshore substation will comprise electrical components and equipment necessary to connect the electricity generated by the Proposed Development to the existing National Grid network, including, for example: transformers, switch room, control building and welfare facilities. Some equipment will be placed outdoors and other equipment will be housed in buildings or enclosures. The maximum footprint for the proposed onshore substation at Oakendene will be up to 6ha within the onshore substation site boundary. The remaining site area includes a combination of land to be reinstated and handed back to the landowner and landscaping and drainage works. The site will be securely fenced.

National Grid Bolney substation extension

New infrastructure is required at the existing National Grid Bolney substation to provide a cable connection from the proposed Oakendene substation to the existing National Grid Bolney substation as the National Grid interface location.

There are two types of infrastructure being considered for installation that will require installation as part of the Bolney substation extension works: Air Insulated Switchgear (AIS)[1] ; or Gas Insulated Switchgear (GIS)[2] . Only one of the Bolney substation extension options (AIS or GIS) will be required in the final Proposed Development. The footprint for AIS infrastructure would be approximately 6,300m^2 and the footprint for GIS infrastructure would be approximately 3,500m^2. There will be vegetation screening included to minimise views of the site and the erection of secure fencing along the perimeter. The AIS option proposed would not require the construction of a building to house the equipment, alternatively the GIS option would require building constructed to house the equipment.

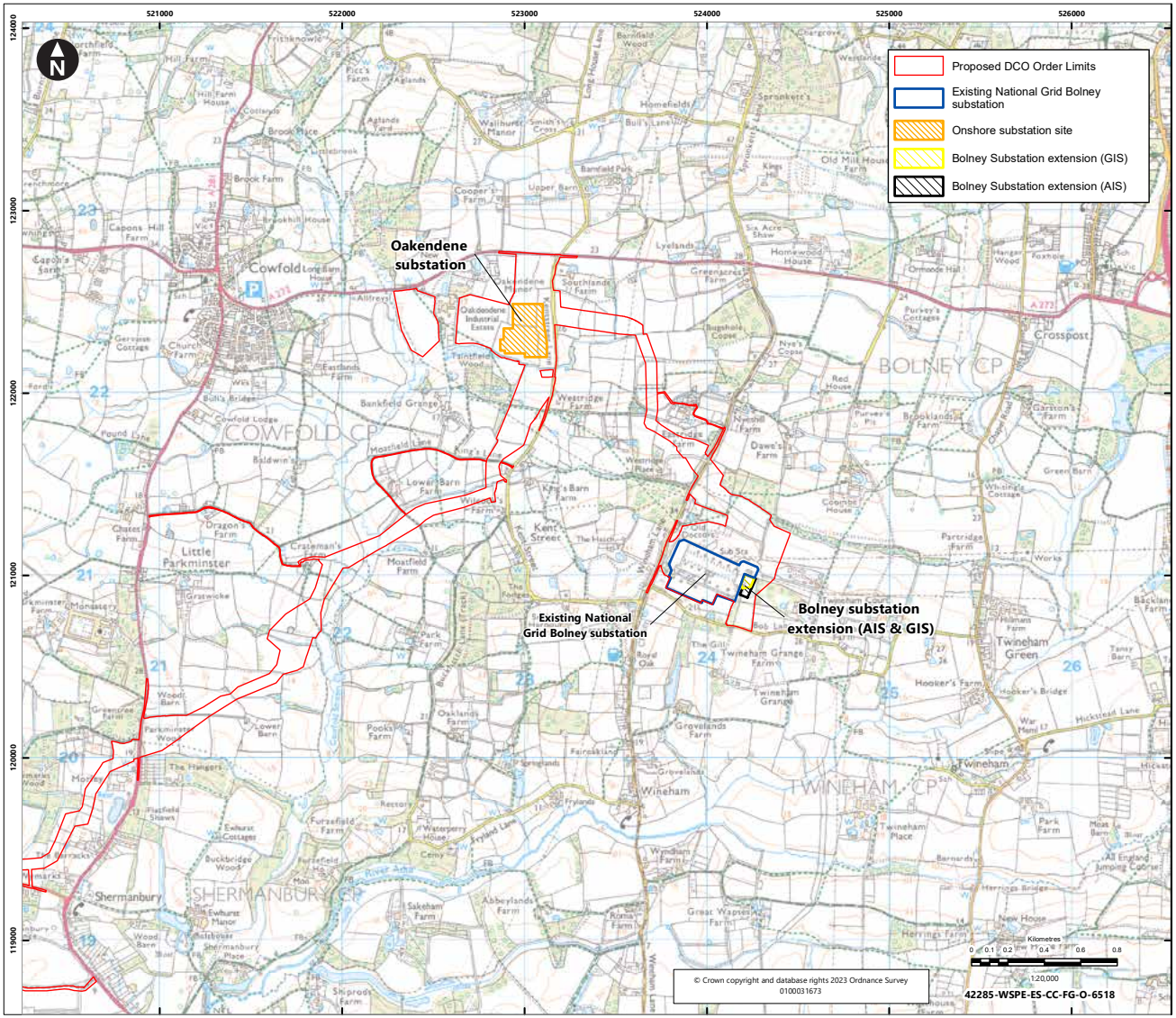
National Grid are responsible for owning and maintaining the high voltage electricity network in England and will select the most suitable option for the Bolney substation extension based on environmental conditions, feasibility, and engineering cohesion with the existing Bolney substation in discussion with RED.

[1]AIS – high voltage electrical switchgear infrastructure, whereby the majority of the equipment utilises air as the insulating medium.

[2]GIS – high voltage electrical switchgear infrastructure, whereby the majority of the equipment utilises an inert gas (with strong insulting properties) as the insulating medium.

Figure 3–1 illustrates the location of the onshore substation at Oakendene near Cowfold and the new infrastructure required at the existing National Grid Bolney substation.

Figure 3–1 Onshore substation at Oakendene



3.4 What is the timeline for construction and operation of Rampion 2?

An indicative construction programme for the Proposed Development is presented in **Graphic 3–2** illustrating the anticipated duration of the major construction / installation elements. In total construction is expected to take approximately four years.

Once construction is complete and the Rampion 2 wind farm is fully commissioned Rampion 2 will enter its operation and maintenance phase. Upkeep of the infrastructure at sea may include regular inspections, routine servicing, component replacements, repairs, remedial works, and painting and cleaning. The operational lifetime of Rampion 2 is expected to be around 30 years.

After commissioning, operation and maintenance activities can be divided into three main categories:

- scheduled maintenance;
- unscheduled maintenance; and
- special maintenance in the event of major equipment breakdown and repairs.

At the end of the operational life of the Proposed Development, it is anticipated that all offshore structures above the seabed will be completely removed. The decommissioning sequence will generally be the reverse of the construction sequence and involve similar types and numbers of vessels and equipment.

It is anticipated that onshore electrical cables will be left in-situ with ends cut, sealed and buried to minimise environmental effects associated with removal.

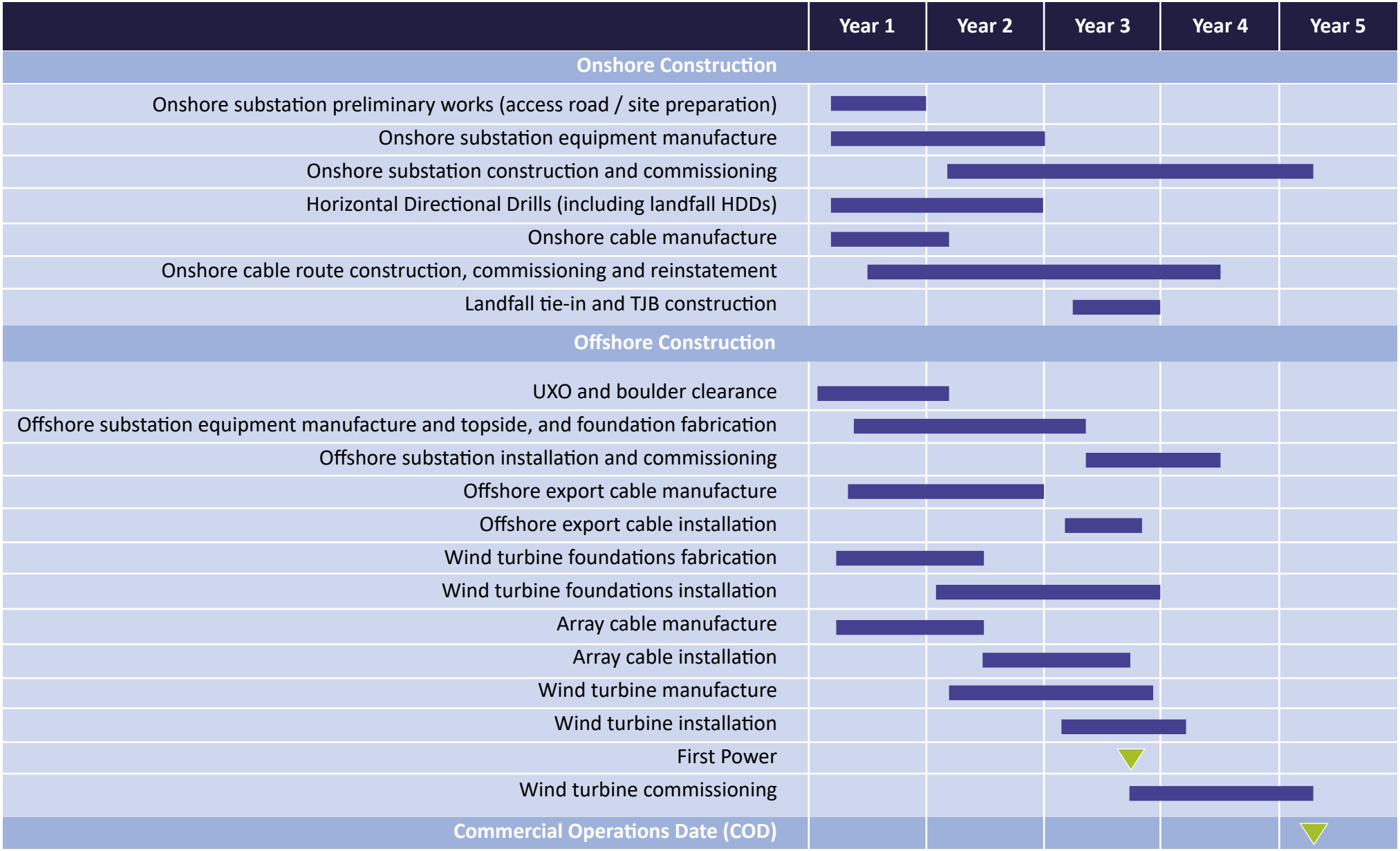
The structures of the jointing pits and link boxes will be removed only if it is feasible with minimal environmental disturbance or if their removal is required to return the land to its current agricultural use.

The onshore substation may be used as a substation site after decommissioning of the Proposed Development or it may be upgraded for use by another offshore wind project. This would be subject to a separate planning application.

Should the onshore substation need to be decommissioned fully, however, the decommissioning works are likely to be undertaken in reverse to the sequence of construction works and involve similar levels of equipment. All relevant sites will be restored to their original states or made suitable for an alternative use in accordance with an approved decommissioning plan.

The decommissioning duration of the offshore and onshore infrastructure may take the same amount of time as construction of Rampion 2, up to four years, although this indicative timing may reduce.

Graphic 3–2 Indicative construction programme



4. Environmental Statement

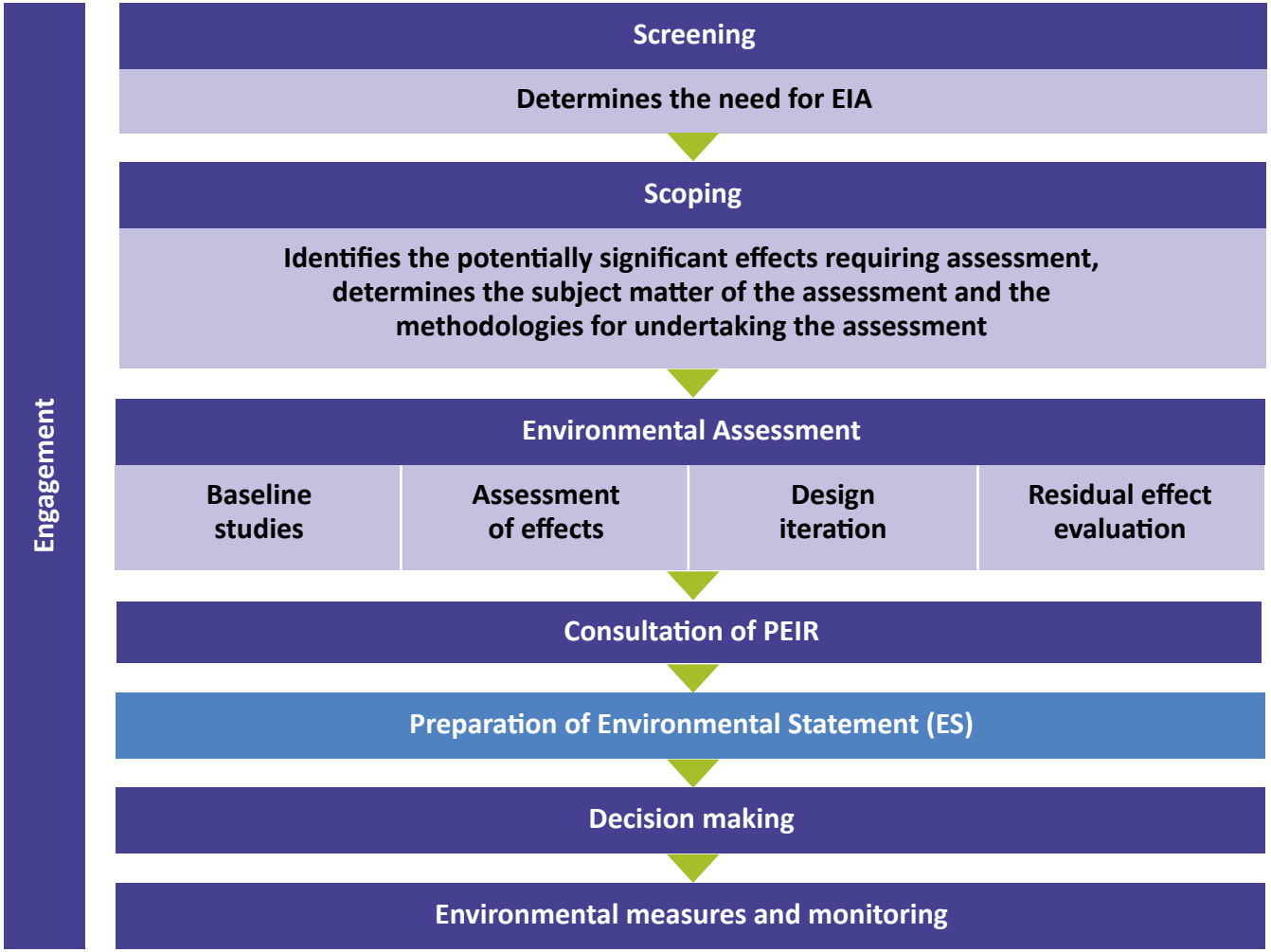
The ES presents an assessment of the likely significant environmental effects of Rampion 2 and forms part of the application for the DCO.

4.1 What is the Environmental Statement?

The ES has been prepared as an output of the EIA process. Each aspect area has been assessed to identify any likely significant environmental effects arising from the project along with the potential for environmental measures to be implemented to avoid, prevent, reduce or, if possible, offset any identified likely significant environmental effects and how these were fed back into the design.

The purpose of the environmental assessment presented in the ES is to enable members of the public, consultation bodies, and other stakeholders, to develop an informed view of the likely significant effects of Rampion 2, and comment on aspects of interest. RED has worked with stakeholders to develop additional ways in which the negative effects of Rampion 2, identified by this assessment, can be avoided or reduced.

Graphic 4–1 The EIA process



The full findings of the EIA process is presented in this ES that is submitted as part of the application for development consent. The ES provides the public and relevant organisations (such as the Environment Agency, Natural England and Marine Management Organisation) with the environmental information needed to understand and comment on a development and provides decision-makers with the environmental information to allow a decision to be made on whether to grant consent for the development.

The EIA process is summarised in **Graphic 4–1**. Further details about the EIA process are described in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5).

4.2 Consultation and engagement

Engagement has been undertaken with consultees, stakeholders and other interested organisations. Non-statutory and statutory consultation has also been undertaken.

EIA Scoping

An EIA Scoping Report was submitted to the Planning Inspectorate in July (RED, 2020). The Scoping Report identified the potentially significant effects requiring assessment, determines the subject matter of the assessment and the methodologies for undertaking the assessment. The Planning Inspectorate subsequently provided a Scoping Opinion, which included comments from a range of stakeholders, on behalf of the Secretary of State, in August 2020 on the proposed scope of the EIA (Planning Inspectorate, 2020). The Scoping Opinion and the statutory consultee responses have subsequently informed the assessment work and further design evolution undertaken to date.

The Evidence Plan Process (EPP)

The Evidence Plan Process (EPP) commenced in September 2020 to seek agreement on the evidence required to be submitted to the Planning Inspectorate as part of the DCO Application. In common with several recent Offshore Wind Farm DCO applications, the EPP for Rampion 2 has been broadened beyond solely Habitats Regulations Assessment (HRA) matters to include relevant components of the EIA process.

The EPP aims to provide a forum for discussion and a framework for recording areas of agreement / disagreement between RED and the relevant statutory authorities, advisers, and other relevant stakeholders with regard to those matters to be addressed by the EIA and Habitats Regulations Assessment (HRA) process. The HRA process is undertaken by the competent authority (for Rampion 2, this will be the Secretary of State of DESNZ) to determine the potential for impacts from a project to European sites. In order to carry out the HRA, the competent authority requires a report to be submitted alongside the Environmental Statement (ES). Information which informs the HRA is presented in the ES in the **Report to Inform Appropriate Assessment** (Document Reference: 5.9) and the **Without Prejudice HRA Derogation Case** (Document Reference: 5.10).

Non-statutory consultation exercise

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.

Statutory Consultation exercises

First Statutory Consultation exercise – July to September 2021

Rampion 2's first Statutory Consultation exercise ran from 14 July to 16 September 2021, a period of nine weeks. The PEIR (RED, 2021) was published as part of Rampion 2's first Statutory Consultation exercise which provided preliminary information and assessment findings of the EIA based on the available information at the time of publication as required by the EIA regulations, 2017.

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.

Second Statutory Consultation exercise – October to November 2022

The second Statutory Consultation exercise was undertaken from 18 October 2022 to 29 November (RED, 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.

The PEIR Supplementary Information Report (PEIR SIR) was published as part of Rampion 2's secondary Statutory Consultation exercise from which RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward to DCO application.

Third Statutory Consultation exercise – February to March 2023

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.

The PEIR Further Supplementary Information Report (PEIR FSIR) was published as part of Rampion 2's Statutory Consultation exercise from which RED sought feedback on the potential changes to the onshore cable route proposals to inform the onshore design taken forward to DCO Application.

Fourth Statutory Consultation exercise – April to May 2023

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.

The Preliminary Environmental Information (PEI) – Bolney Substation Extension Works was published as part of this fourth Statutory Consultation exercise, from which RED sought feedback on the proposed substation extension works to inform the onshore design taken forward to the DCO Application.

4.3 Assessment methodology

Environmental Impact Assessment (EIA) is a process for identifying the likely significant environmental effects (positive and negative) of a proposed development to inform the decision-making process for development consent to be granted. A full description is provided in **Chapter 5: Approach to the EIA, Volume 2** of the ES (Document Reference: 6.2.5).

The EIA considers all relevant **'aspects'** that may be impacted both onshore and offshore, such as landscape, marine mammals, commercial fisheries and historic environment etc. The aspects to be included in the EIA were agreed with the Planning Inspectorate and other stakeholders through the Scoping process, with the Planning Inspectorate providing a Scoping Opinion in July 2020.

The ES presents the EIA findings. A separate ES Chapter presents the detailed findings for each aspect that has been assessed (**Chapter 6 Coastal processes** to **Chapter 29: Climate change, Volume 2** of the ES (Document Reference: 6.2.6 to 6.2.29).

A detailed description of the existing '**baseline environment**' has been produced for the offshore and onshore development areas, through a combination of desk-based studies, consultation and site specific surveys.

All **'potential effects'** arising from the construction, operation and decommissioning Rampion 2 are identified as part of the EIA methodology, for example loss of habitat or change in noise levels. The assessment considers the level of significance of each effect on each '**receptor**' (the receiving environment such as water, air, land, and specific species). The assessment is undertaken by EIA specialists such as ecologists and marine scientists. The general approach to determining '**significance**' of an effect is to consider the sensitivity of a receptor alongside the nature and severity of the change. A detailed explanation of how different effects are deemed significant for each aspect is provided in each Chapter of the ES.

All potential effects are considered as part of the EIA process. However, '**likely significant effects**' are the key issues that are identified when considering the level and type of effect and the sensitivity of the environmental receptor.

- The ES also includes a consideration of potential cumulative, transboundary and inter-related effects:
- cumulative effects are the combined effect of Rampion 2 in combination with the effects from a number of different projects, on the same single environmental receptor/resource are considered;
- transboundary effects are where there is the potential for Rampion 2 to affect the environment of another EEA state; and
- inter-related effects are those that arise from multiple impacts and activities from the construction, operation and decommissioning of Rampion 2 on the same receptor, or group of receptors.

4.4 Maximum design scenario

In order to establish the scope of environmental assessment, the ES assessed Rampion 2 based on what is termed a 'Rochdale Envelope' or parameter-based design envelope approach. Assessing the environmental effects using a parameter-based design envelope approach is well-established for large scale infrastructure projects and means that the assessment will consider a maximum design scenario whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the DCO Application. Such design decisions for Rampion 2 may include the precise model and dimensions of WTG model which will be available at the time of placing orders for the project, or the final optimised layout taking into account detailed engineering factors and wind energy optimisation. Development permitted by the DCO will not extend beyond the clearly defined parameters assessed in the ES.

The findings presented in the ES are based on assessment of effects based on the baseline conditions and a maximum design scenario which allows for conclusions as to the likely significant environmental effect to be drawn. A precautionary approach is applied to ensure a reasonable worst-case or maximum design scenario is assessed in the ES.

4.5 Embedded environmental measures

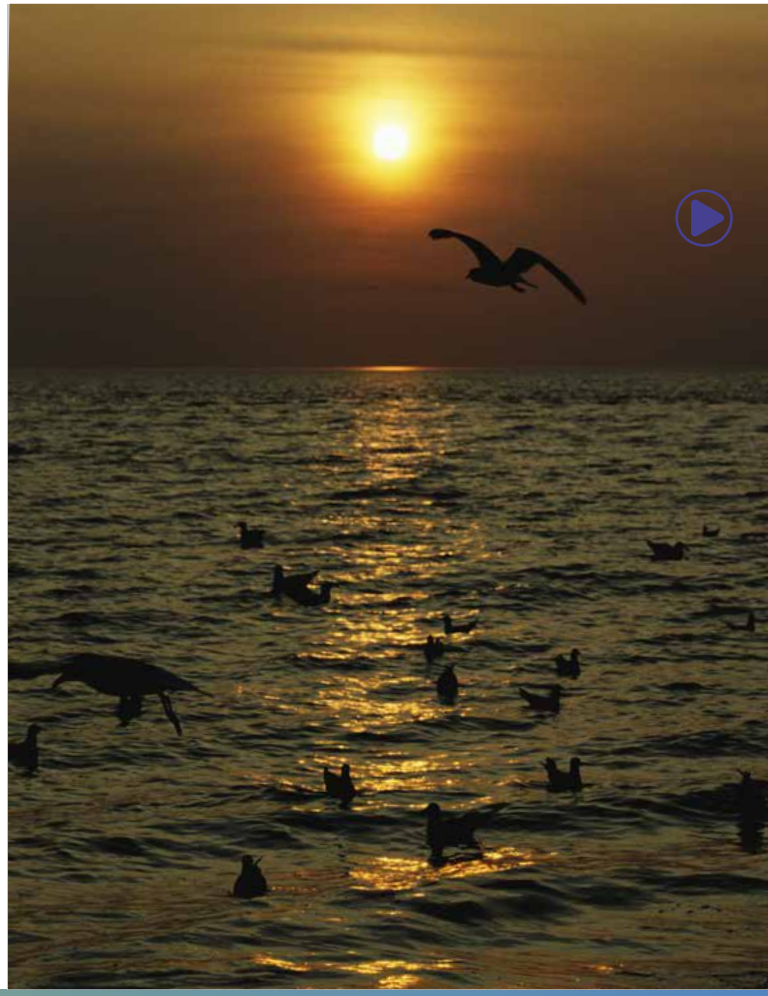
EIA is an iterative process and opportunities for environmental mitigation, referred to as '**embedded environmental measures**' have been considered throughout the design development of Rampion 2 and in the assessment undertaken for the ES where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders together with appropriate technical standards, policies and guidance. These embedded environmental measures include both avoidance, best practice and design commitments.

4.6 Reporting EIA assessment results

The Rampion 2 EIA process culminates in the provision of an ES written in accordance with the EIA Regulations 2017 which will help inform the determination of the application for a Development Consent Order (DCO). The ES provides an assessment of the likely significant effects associated with the construction, operation and maintenance, and decommissioning phases of Rampion 2 which will help to inform decision-making.

The ES is comprised of:

- Volume 1: Non-Technical Summary (this document);
- Volume 2: ES Chapters with all the full details of methodology and assessments;
- Volume 3: Figures to accompany each ES Chapter; and
- Volume 4: Appendices where further information is presented in relation to the ES Chapters.

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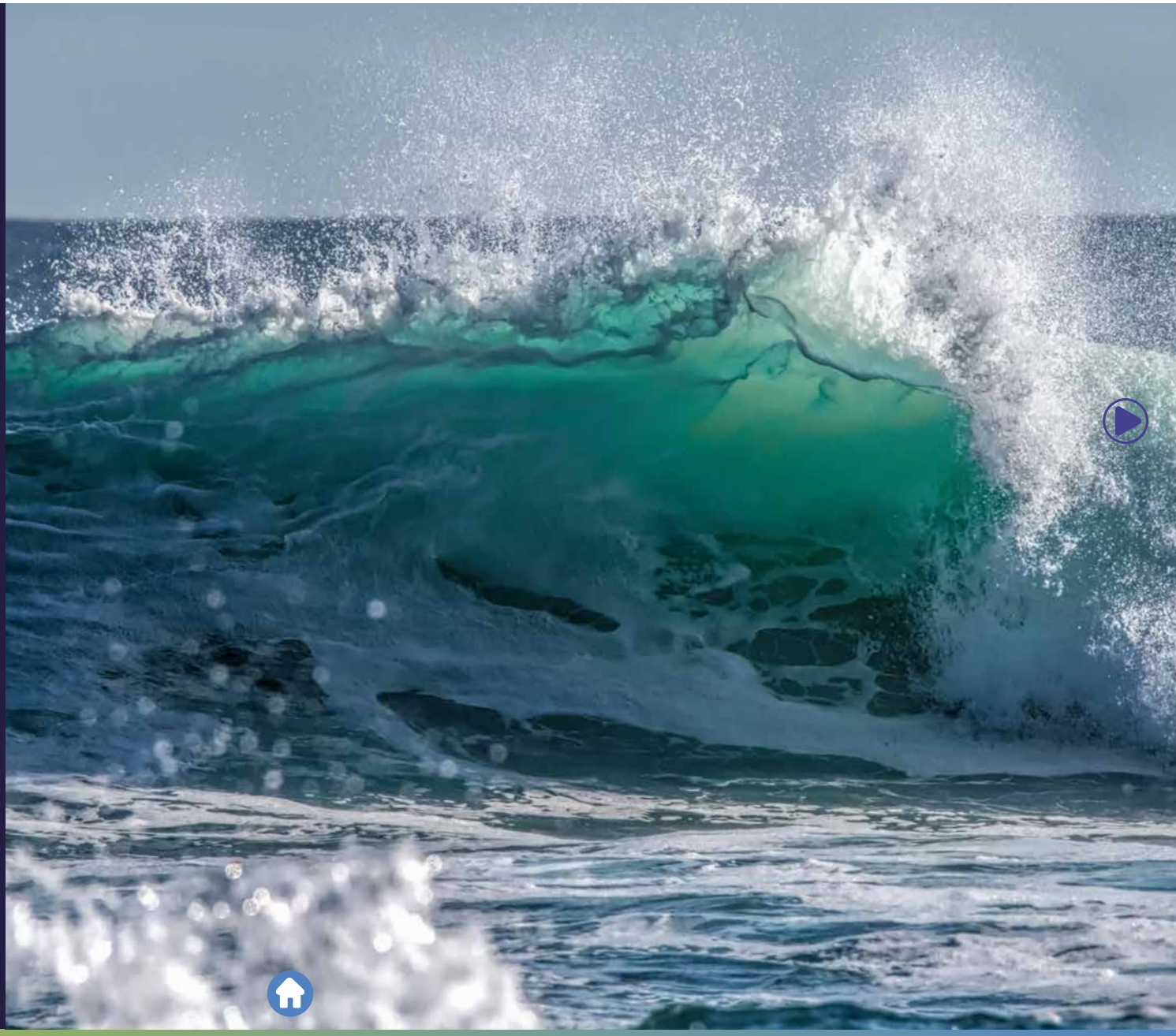
5. Offshore EIA

5.1 Introduction

This section provides a summary of the assessment of likely significant effects to offshore resources and receptors including:

- **Coastal processes;**
- **Other marine users;**
- **Fish and shellfish ecology;**
- **Benthic, subtidal and intertidal ecology;**
- **Commercial fisheries;**
- **Marine mammals;**
- **Offshore and intertidal ornithology;**
- **Shipping and navigation;**
- **Civil and military aviation;**
- **Seascape, landscape and visual impact assessment; and**
- **Marine archaeology.**

The offshore part of the proposed DCO Order Limits is shown in Figure 1–1.



5.2 Coastal processes

This section summarises the assessment findings for coastal processes, based on **Chapter 6: Coastal processes, Volume 2** of the ES (Document Reference: 6.2.6).

How effects on coastal processes have been assessed

The assessment identifies likely significant effects on coastal processes receptors resulting from the proposed construction, operation, and decommissioning of the offshore infrastructure. For the most part coastal processes are not in themselves receptors but are instead 'pathways'. However, changes to coastal processes have the potential to indirectly impact other environmental receptors. The assessment has considered impacts from:

- changes in suspended sediment concentrations (SSC) and deposition of disturbed sediments to the seabed;
- changes to the tidal, wave, sediment transport regimes and seabed scour;
- changes to landfall morphology due to installation of export cable; and
- changes to the tidal regime due to presence of windfarm infrastructure.

The spatial scope of the coastal processes assessment includes the proposed DCO Order Limits together with the Zone of Influence (ZOI). The coastal processes ZOI combines the area where there is a potential impact on waves at adjacent coastlines between Beachy Head and Selsey Bill; and the likely extent of potential sediment plume impacts.

The information used in the ES has come from a variety of sources including a review of appropriate literature, obtaining relevant historical geophysical, geotechnical, and benthic survey records, site specific surveys for Rampion 2 and survey results for Rampion 1, and meetings with groups such as The Environment Agency (EA), Marine Management Organisation (MMO), and the Centre for Environment, Fisheries and Aquaculture Science (Cefas).

Baseline environment

The assessment for coastal processes has used a desk-based approach to data collection, and site survey data from the Rampion 2 proposed DCO Order Limits collected in 2020. Water depths across the wind farm array area vary from approximately 13m below the lowest astronomical tide (LAT) (on a rocky outcrop in the northwest of the site) to 65m LAT (within a broad depression) in the southeast on the array. Sandwaves are prevalent over much of the central and eastern array area, trending northwest to southeast, with heights of up to 2m relative to the surrounding seabed.

The Rampion 2 landfall is located at Climping. The beach here consists of mixed sand and shingle sediment with a slope to the sand foreshore, with sediment transport in an easterly direction. The seabed across the array and export cable corridor is dominated by the presence of coarse-grained sediments (sands and gravels) with outcropping bedrock in places.

Embedded environmental measures

A range of environmental measures which relate to coastal processes are embedded as part of the Rampion 2 design in order to remove or minimise significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 6-12** within **Chapter 6: Coastal Processes, Volume 2** of the ES (Document Reference: 6.2.6) of the Environmental Statement:

- **The selection of the foundation type will primarily be based upon the site conditions combined with the wind turbine generator that is selected.**
- **Scour protection (typically consisting of rock aggregate or stone/ concrete mattresses) may need to be installed and a Scour Protection Management Plan will be developed.**
- **The subsea cables will typically be buried below the seabed surface.**
- **The subsea export cable ducts will be drilled underneath the beach using horizontal direction drilling (HDD) techniques.**

Likely significant effects

Overview

The assessment is based on the proposed location of the offshore infrastructure and its construction and subsequent operation, plus the incorporation of appropriate embedded environmental measures. This identifies potential pathways which could lead to effects on other environmental receptors, during construction, operation and maintenance, and decommissioning. These impacts are considered and reported in the relevant Chapter of the ES, for example **Chapter 8: Fish and Shellfish Ecology, Volume 2 and Chapter 9: Benthic subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9).

No Significant Effects have been identified to coastal processes receptors from construction, operation and maintenance and decommissioning activities.

Cumulative effects

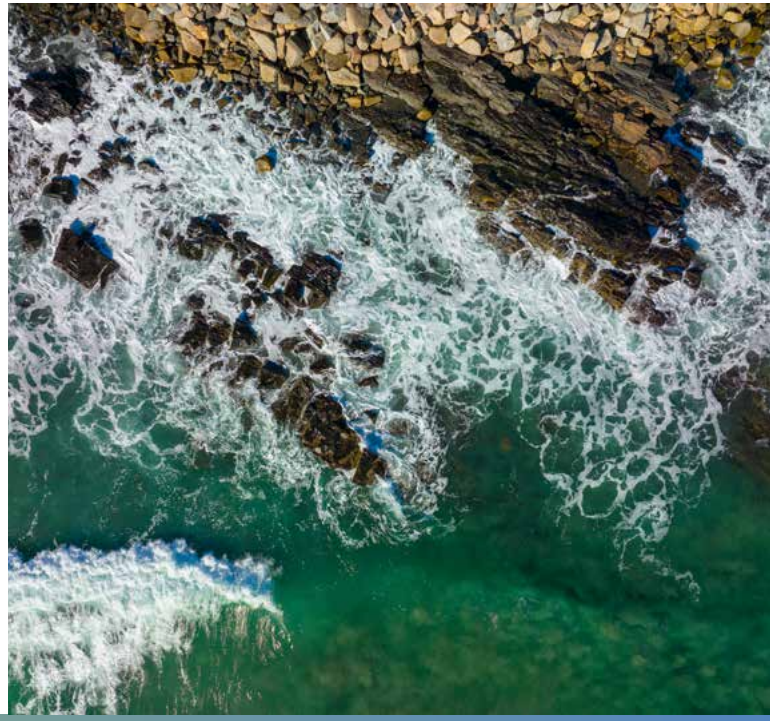
No Significant Cumulative Effects of greater significance compared to the impacts considered alone were been identified in relation to Rampion 2 on coastal processes from construction, operation and maintenance and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for coastal processes from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified. This is because the predicted changes to the key coastal process pathways (i.e. tides, waves, and sediment transport) are not anticipated to be sufficient to influence identified receptors at this distance from Rampion 2.



5.3 Other marine users

This section summarises the assessment findings for other marine users, based on **Chapter 7: Other marine users, Volume 2** of the ES (Document Reference: 6.2.7).

How effects on other marine users have been assessed

The assessment identifies any likely significant effects on other marine users resulting from the proposed construction, operation, and decommissioning of the offshore infrastructure. The assessment has considered impacts from increased vessel traffic, activity or access displacement, temporary increases in suspended sediment and subsequent deposition, and temporary increases in subsea noise throughout the construction and decommissioning phase. During the operational phase impacts that have been assessed include increased vessel traffic, the physical presence of infrastructure and alterations in wave energy direction and period.

The study area for the other marine users assessment includes the area over which suspended sediments may travel following disturbance as a result of Rampion 2 activities, extending 16km around each of the array and the offshore export cable corridor components of the proposed DCO Limits. For the purpose of the ES assessment, a wider study area across the eastern English Channel has also been assumed, to assess broader area effects on receptors such as sailing and cruising routes and dive sites.

The information used in the ES has come from a desk study of a variety of sources including information from The Crown Estate on offshore wind leasing sites, oil and gas, aggregates licence areas and other offshore renewable energy, Centre for Environment, Fisheries & Aquaculture Science data on disposal sites, offshore cable, interconnector and pipelines from the Kingfisher Information Service, Ministry of Defence practice areas, recreational diving records from SeaSearch and Royal Yachting Association data from the boating atlas.

Baseline environment

Other marine user receptors that have been considered within this assessment include marine aggregates, disposal sites, oil and gas, offshore wind, other offshore energy, military activities and munitions, subsea cables and pipelines, recreational boating and sailing, diving and water sports (including surfing) recreational fishing and aquaculture.

Embedded environmental measures

A range of environmental measures which relate to other marine users are embedded as part of the Rampion 2 design in order to remove or minimise significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 7-13** within **Chapter 7: Other marine users, Volume 2** of the ES (Document Reference: 6.2.7) of the Environmental Statement:

- **An advisory exclusion zone around all piling operations, within which no-one (including construction personnel) is recommended to enter the water.**
- **A Diver Communication Plan will be developed in agreement with regulatory authorities to notify the diving and spearfishing community of the timing and duration of the proposed works.**
- **RED will ensure that the local notice to mariners (NtM) is updated and reissued at weekly intervals during construction activities.**
- **The subsea cables will typically be buried below the seabed surface.**
- **The subsea export cable ducts will be drilled underneath the beach using horizontal direction drilling (HDD) techniques.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and the subsequent operation, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified in relation to potential impacts of Rampion 2 on other marine users from construction, operation and maintenance and decommissioning activities.

Cumulative effects

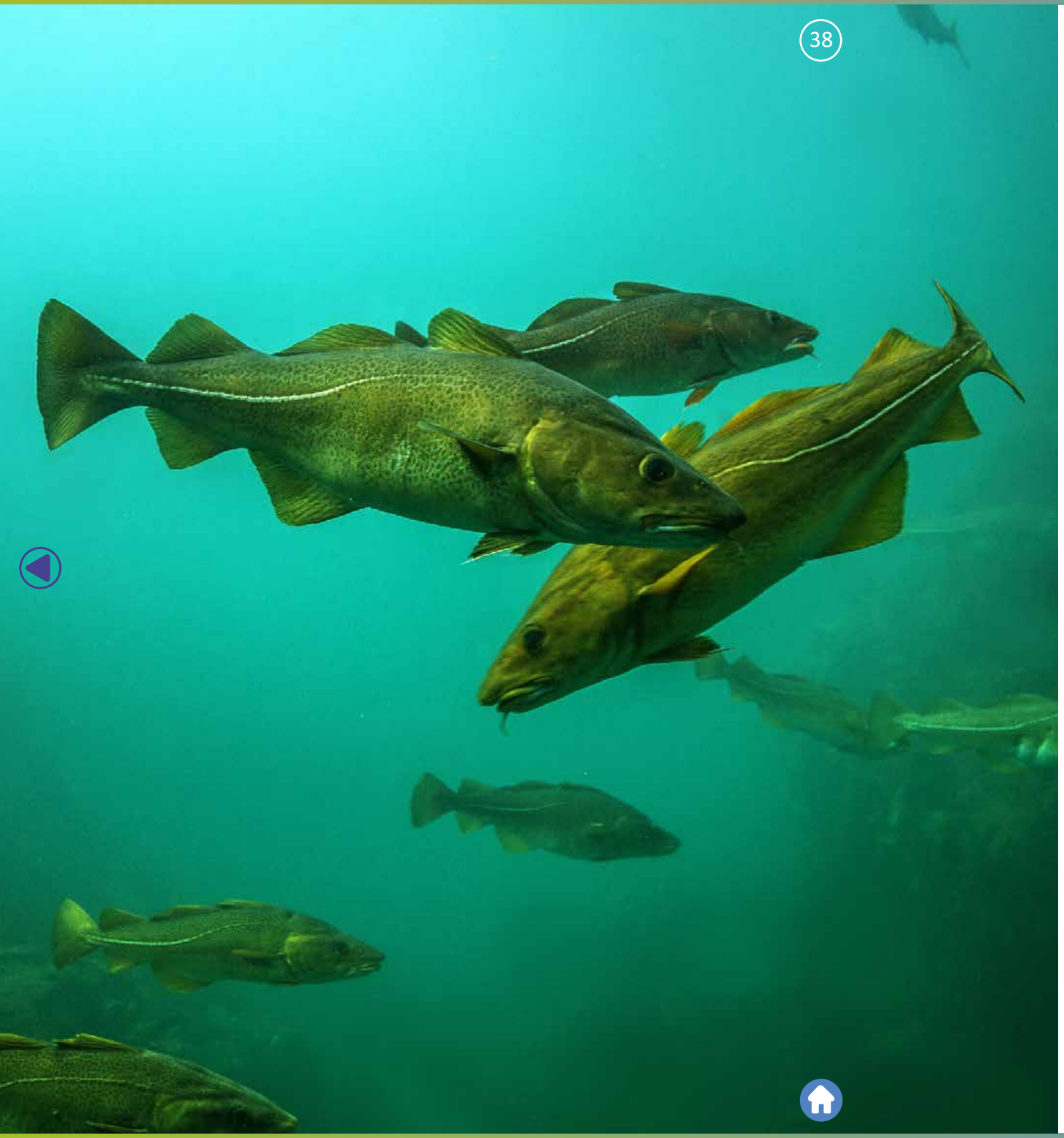
No Significant Cumulative Effects have been identified in relation to Rampion 2 on other marine users from construction, operation and maintenance and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for other marine users from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on other marine users from construction, operation and maintenance and decommissioning activities.



5.4 Fish and shellfish ecology

This section summarises the assessment findings for fish and shellfish ecology, based on **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8).

How effects on fish and shellfish ecology have been assessed

The assessment for fish and shellfish ecology has considered impacts from construction and decommissioning phase activities including: mortality, injury, behavioural changes and auditory masking arising from noise and vibration, direct disturbance resulting from the installation / removal of the export cable and from construction / decommissioning within the array, temporary localised increases in suspended sediment concentration (SSC) and smothering, direct and indirect seabed disturbances leading to the release of sediment contaminants. During the operational phase, impacts that have been assessed include long-term loss of habitat and increased hard substrate and structural complexity due to the presence of turbine foundations, scour protection and cable protection; electromagnetic field (EMF) impacts arising from cables; and direct disturbance resulting from maintenance within the array area and export cable.

The study area for the fish and shellfish ecology assessment includes the area over which suspended sediments may travel following disturbance as a result of Rampion 2 activities, extending 16km around the array and offshore export cable corridor of the proposed DCO Order Limits. This buffer was increased from the case assessed at PEIR following Section 42 consultation to capture the full potential maximum sediment plume excursion distance during spring tides.

The information used in the ES has come from a variety of sources including a review of appropriate literature, obtaining relevant historical geophysical, geotechnical and fish and shellfish survey records, including survey results for Rampion 1, and meetings with groups such as Natural England, MMO, The Seahorse Trust, Cefas, EA, The Wildlife Trust, Sussex Wildlife Trust and Sussex Inshore Fisheries and Conservation Authorities.

Baseline environment

It was agreed with stakeholders through the EIA EPP that further fish and shellfish surveys are not required, as sufficient information exists to enable a robust characterisation of the receiving environment and identification of relevant valued ecological receptors for the purposes of assessment.

The assessment for fish and shellfish ecology has used a desk-based approach to data collection, and site-specific geophysical survey data from the Rampion 2 proposed DCO Order Limits collected in 2020, have also been considered. The geophysical survey data, combined with the information provided by the seabed ecological surveys, have provided important additional ground discrimination information and have been used to supplement several existing regional datasets on likely black bream nesting locations in areas relevant to Rampion 2, the composite of data available has been agreed with EPP stakeholders as adequate for the purpose of characterising the receiving environment and informing the EIA.

Many species of fish and shellfish are known to either spawn or have nursery areas in relatively close proximity to, or potentially overlapping with the proposed DCO Order Limits. Various data sources and further details are provided in the main chapter of the ES.

Fish and shellfish ecology receptors that have been considered within the assessment include the following:

- mobile fish species;
- elasmobranch species;
- migratory species; and
- shellfish.

Embedded environmental measures

A range of environmental measures which relate to fish and shellfish ecology are embedded as part of the Rampion 2 design in order to remove or reduce significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 8-13** within **Chapter 8: Fish and shellfish ecology, Volume 2** of the ES (Document Reference: 6.2.8):

- **A Scour Protection Management Plan will be developed. It will include details of the need, type, quantity and installation methods for scour protection.**
- **A Marine Pollution Contingency Plan will be developed and will outline procedures to protect personnel working and to safeguard the marine environment.**
- **Mitigation and control of invasive species measures will be incorporated into a Project Environmental Management Plan**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and the subsequent operation, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified in relation to potential impacts of Rampion 2 on the fish and shellfish ecology receptors from construction, operation and maintenance and decommissioning activities.

Cumulative effects

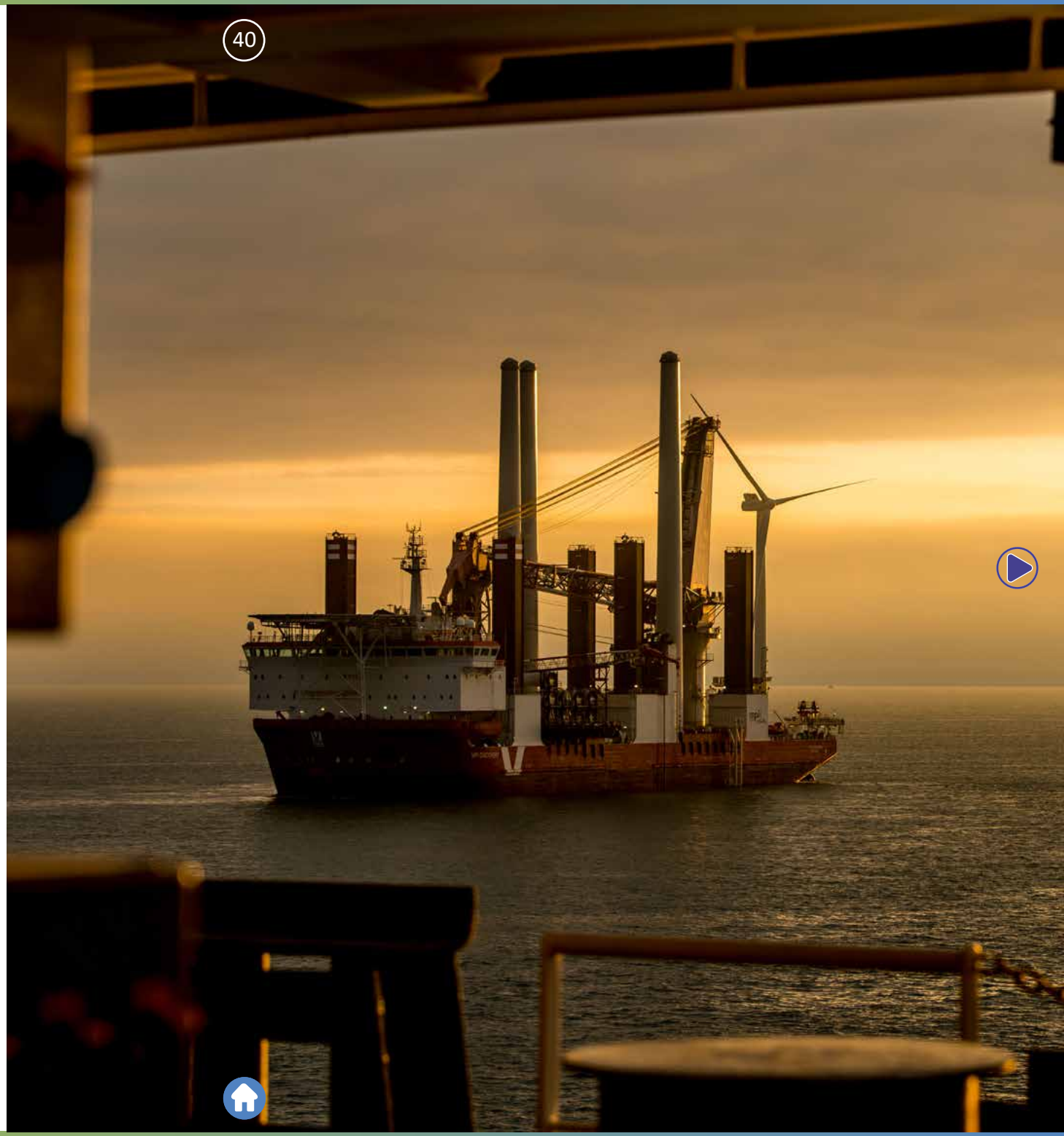
No Significant Cumulative Effects have been identified in relation to Rampion 2 on fish and shellfish ecology from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for fish and shellfish receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on fish and shellfish ecology from construction, operation and maintenance, and decommissioning activities.



5.5 Benthic, subtidal and intertidal ecology

This section summarises the assessment findings for benthic, subtidal and intertidal ecology, based on **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9).

How effects on benthic, subtidal and intertidal ecology have been assessed

The assessment identifies likely significant effects on benthic, subtidal and intertidal ecology receptors resulting from the proposed construction, operation and decommissioning of the offshore infrastructure.

The assessment has considered impacts from construction and decommissioning phase activities including: temporary and permanent habitat disturbance from construction / decommissioning activities; temporary increase in Suspended Sediment Concentrations (SSC) and sediment deposition; direct and indirect seabed disturbances leading to the release of sediment contaminants; increased risk of introduction or spread of Marine Invasive Non-Native Species (INNS); indirect disturbance arising from the accidental release of pollutants; and indirect disturbance from increased noise and vibration from construction activities.

During the operational phase, impacts that have been assessed include; temporary and permanent habitat loss/disturbance; changes to seabed habitats arising from effects on physical processes; colonisation of the WTG and scour/ cable protection; increased risk of introduction or spread of Marine INNS; indirect disturbance arising from the accidental release of pollutants; and indirect disturbance arising from EMF generated by the current flowing through the cables.

The study area for the benthic, subtidal and intertidal ecology assessment includes the area over which suspended sediments may travel following disturbance as a result of Rampion 2 activities, extending 16km around the array and offshore export cable corridor of the proposed DCO Order Limits. This buffer was increased from the case assessed at PEIR following Section 42 consultation to capture the full potential maximum sediment plume excursion distance during spring tides.

The information used in the ES has come from a variety of sources including a review of appropriate literature, obtaining relevant historical geophysical, geotechnical, including survey results for Rampion 1, site-specific Rampion 2 geophysical, intertidal and subtidal surveys, and meetings with groups such as Natural England, MMO, Cefas, SWT and East Sussex County Council (ESCC).

Baseline environment

The assessment for benthic, subtidal and intertidal ecology has used existing data, such as the Rampion 1 benthic ecology data, Regional Seabed Monitoring Plan baseline datasets, and monitoring reports for marine aggregate extraction areas. Site specific sampling has also been undertaken, as agreed with ETG stakeholders.

Existing data shows that the sediments within the western section of the proposed DCO Order Limits and offshore export cable corridor are predominantly characterised by coarse and mixed sediments, with the eastern area identified as having a greater proportion of sand and muddy sand sediments.

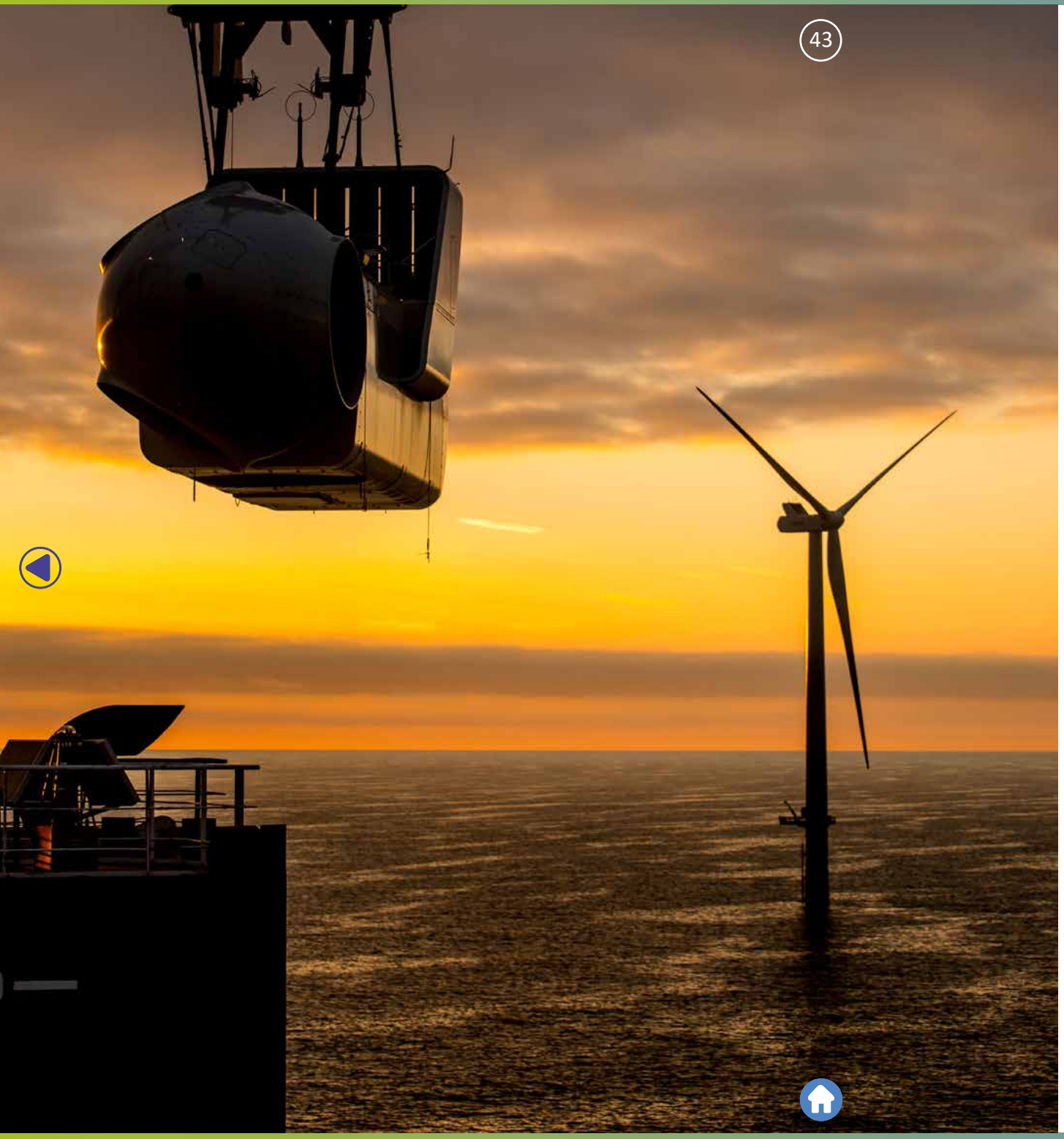
The results from the site specific monitoring and habitat modelling revealed that 15 biotopes (regions of uniform biological environment) were identified as occurring throughout the proposed DCO Order Limits.

Benthic, subtidal and intertidal ecology receptors that have been considered within the assessment include broadscale habitat features, features of Marine Conservation Zones (MCZs) and broadscale features of MCZ.

Embedded environmental measures

A range of environmental measures which relate to benthic, subtidal and intertidal ecology are embedded as part of the Rampion 2 design in order to remove or reduce significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 9-16** within **Chapter 9: Benthic, subtidal and intertidal ecology, Volume 2** of the ES (Document Reference: 6.2.9) of the Environmental Statement:

- **A Scour Protection Management Plan will be developed. It will include details of the need, type, quantity, and installation methods for scour protection.**
- **The subsea cables will typically be buried below the seabed surface.**
- **The subsea export cable ducts will be drilled underneath the beach using horizontal directional drilling (HDD) techniques.**
- **The proposed offshore export cable corridor and cable landfall (below mean high water springs [MHWS]) will avoid all statutory marine designated areas.**
- **A Marine Pollution Contingency Plan will be developed and will outline procedures to protect personnel working and to safegaurd the marine environment.**
- **Mitigation and control of invasive species measures will be incorporated into a Project Environmental Management Plan.**



Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on benthic, subtidal and intertidal ecology from the construction, operation and maintenance, and decommissioning of Rampion 2.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on benthic, subtidal and intertidal ecology from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for benthic, subtidal and intertidal ecology receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on benthic, subtidal and intertidal ecology from construction, operation and maintenance, and decommissioning activities.

5.6 Commercial fisheries

This section summarises the assessment findings for commercial fisheries, based on **Chapter 10: Commercial fisheries, Volume 2** of the ES (Document Reference: 6.2.10).

How effects on commercial fisheries have been assessed

The assessment of commercial fisheries has considered impacts from construction, operation and decommissioning phase activities including; reduction in access to, or exclusion from established fishing grounds; displacement leading to gear conflict and increased fishing pressure on adjacent grounds; disturbance of commercially important fish and shellfish resources leading to displacement or disruption of fishing activity; increased vessel traffic associated with Rampion 2 within fishing grounds leading to interference with fishing activity; and additional movements to alternative fishing grounds for vessels that would otherwise fish within the Rampion 2 area, and physical presence of infrastructure leading to gear snagging.

The study area for the commercial fisheries assessment is International Council for the Exploration of the Sea (ICES) rectangle 30E9, located within the northern portion of the ICES Division 7d (eastern English Channel) statistical area. ICES standardise the division of sea areas into rectangles to enable data analysis. The proposed DCO Order Limits occupies only approximately 11% of the ICES rectangle.

The information used in the ES has come from a variety of sources including: UK and EU fish and vessel data sets and directly from the fishing industry and its representative organisations and informal engagement with groups such as the National Federation of Fishermen's Organisations (NFFO), Sussex IFCA, Brighton and Newhaven Fish Sales & Leach Fishing, and FROM Nord (French Producer Organisation).

Baseline environment

The assessment for commercial fisheries has used a desk-based approach to data collection, using the most recent datasets available at the time of writing. This includes landings from the Rampion 2 commercial fisheries study area, analysis on a fishery-by-fishery basis, where details on the nationality of vessels, species caught, and location of fishing activity has been provided.

Commercial fisheries receptors that have been considered within the assessment include the following:

- potting fleet (i.e. vessels fishing with pots and traps);
- dredging fleet (i.e. vessels fishing with dredges);
- netting fleet (i.e. vessels fishing with nets);
- beam trawl fleet (i.e. vessels fishing with beam trawls);
- demersal otter trawl fleet (i.e. vessels fishing with demersal trawls); and
- pelagic trawl fleet (i.e. vessels fishing with pelagic trawls).

Embedded environmental measures

A range of environmental measures which relate to commercial fisheries are embedded as part of the Rampion 2 design in order to remove or reduce significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 10-11** within **Chapter 10: Commercial fisheries, Volume 2** of the ES (Document Reference: 6.2.10) of the Environmental Statement:

- **Where possible, cable burial will be the preferred option for cable protection.**
- **RED will comply with legal requirements with regards to shipping, navigation and aviation marking and lighting.**
- **Advance warning and accurate location details of construction, maintenance and decommissioning operations, associated Safety Zones and advisory passing distances will be given via Notices to Mariners (NtM) and Kingfisher Bulletins.**
- **Ongoing liaison with fishing fleets will be maintained during all stages of the Proposed Development.**
- **RED will develop a Fisheries Liaison and Coexistence Plan which will facilitate the relationship between the local fishing fleets and the Proposed Development.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on commercial fisheries from the construction, operation and maintenance, and decommissioning of Rampion 2.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on commercial fisheries from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for commercial fisheries receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on commercial fisheries from construction, operation and maintenance, and decommissioning activities.

5.7 Marine mammals

This section summarises the assessment findings for marine mammals, based on **Chapter 11: Marine mammals, Volume 2** of the ES (Document Reference: 6.2.11).

How effects on marine mammals has been assessed

The assessment of marine mammals has considered impacts from construction and decommissioning phase activities including: construction / decommissioning noise impacts; vessel collision risk; vessel disturbance; changes in prey availability; and disturbance to seals. During the operational phase, impacts that have been assessed include, operational noise impacts; vessel collision risk; vessel disturbance and changes to prey availability.

The marine mammal study area varies depending on the species, considering individual species' ecology and behaviour. For all species, the study area covers the Rampion 2 array area and offshore Export Cable Corridor (ECC) and is extended over an appropriate area considering the scale of movement and population structure for each species. For each species, the area considered in the assessment is largely defined by the appropriate species Management Unit. Management Units are defined by statutory nature conservation bodies and refer to a geographical area in which the animals of a particular species are found.

The information used in the ES has come from a variety of sources including a review of appropriate literature, obtaining relevant historical data records, including survey results for Rampion 1, site-specific Rampion 2 surveys conducted from April 2019 to March 2021, and meetings with groups such as Natural England, MMO, Cefas, SWT, TWT and Whale and Dolphin Conservation (WDC).

Baseline environment

The assessment for marine mammal species present was informed through a combination of literature reviews and data obtained from site-specific surveys to determine marine mammal density estimates and to obtain reference population information. The Rampion 2 site-specific surveys resulted in sightings of harbour porpoise and common dolphin, alongside a number of unidentified cetaceans and seals.

Marine mammal receptors that have been considered within the assessment include any marine mammals present within the study area, such as: harbour porpoise, common dolphin, bottlenose dolphin, minke whale, harbour seal and grey seal.

Embedded environmental measures

A range of environmental measures which relate to marine mammals are embedded as part of the Rampion 2 design in order to remove or reduce significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 11-14** within **Chapter 11: Marine mammals, Volume 2** of the ES (Document Reference: 6.2.11):

- **A Vessel Management Plan will be developed pre-construction.**
- **A piling Marine Mammal Mitigation Protocol will be implemented during construction and will include details of soft starts to be used during piling operations.**
- **A Decommissioning Marine Mammal Mitigation Protocol will be implemented in line with the latest relevant available guidance.**
- **A Marine Pollution Contingency Plan will be developed and will outline procedures to protect personnel working and to safeguard the marine environment.**
- **Mitigation and control of invasive species measures will be incorporated into a Project Environmental Managmement Plan.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on marine mammals from the construction, operation and maintenance, and decommissioning of Rampion 2.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on marine mammals from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for marine mammal receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on marine mammals from construction, operation and maintenance, and decommissioning activities.

5.8 Offshore and intertidal ornithology

This section summarises the assessment findings for offshore and intertidal ornithology, based on **Chapter 12: Offshore and intertidal ornithology, Volume 2** of the ES (Document Reference: 6.2.12).

How effects on offshore and intertidal ornithology have been assessed

The assessment identifies likely significant effects on bird species resulting from the proposed construction, operation and decommissioning of the offshore infrastructure. The assessment has considered impacts from disturbance and displacement of birds, and indirect impacts on bird species due to impacts on prey species habitat loss. During the operational phase impacts that have been assessed include collision risk with rotating WTG blades and barrier effects (i.e. blocking of flight paths) by the WTGs.
The study area for the offshore and intertidal ornithology assessment includes the area in which the WTGs will be located with a 4km buffer, the export cable corridor and the cable landfall area.

The information used in the ES has come from a variety of sources including: a review of appropriate literature, relevant bird survey records, bird survey results for Rampion 1, intertidal and offshore bird surveys (carried out between 2019 and 2021), and meetings with groups such as Natural England, the Sussex Ornithological Society, the Wildfowl & Wetlands Trust and the Royal Society for the Protection of Birds (RSPB).

Baseline environment

The assessment for the intertidal environment has been informed by a desk-study and site-specific aerial digital surveys in order to determine the type and numbers of birds present in and around the wind farm. The data provides evidence that waterbird occurrence is generally very low on a regional and national scale within the intertidal environment at the proposed landfall area, with only sanderling and Mediterranean gull being found in sufficient numbers to warrant further consideration.

For the offshore environment, a programme of 24 months of aerial digital surveys has been completed in order to determine the type and numbers of birds present in and around the wind farm. Other species identified include: gannet, kittiwake, little gull, common gull, herring gull, great black-backed gull, lesser black-backed gull guillemot, and razorbill.

Embedded environmental measures

A range of environmental measures which relate to offshore and intertidal ornithology are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 12-20** within C**hapter 12: Offshore and intertidal ornithology, Volume 2** of the ES (Document Reference: 6.2.12):

- **The proposed offshore cable corridor and cable landfall (below mean high water springs) will avoid all statutory marine designated areas.**
- **The subsea export cable ducts will be drilled underneath the beach using horizontal direction drilling (HDD) techniques.**
- **There will be a minimum blade tip clearance of at least 22m above MHWS, which will reduce collision risk to birds.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on offshore and intertidal ornithology from the construction, operation and maintenance, and decommissioning of Rampion 2.

Cumulative effects

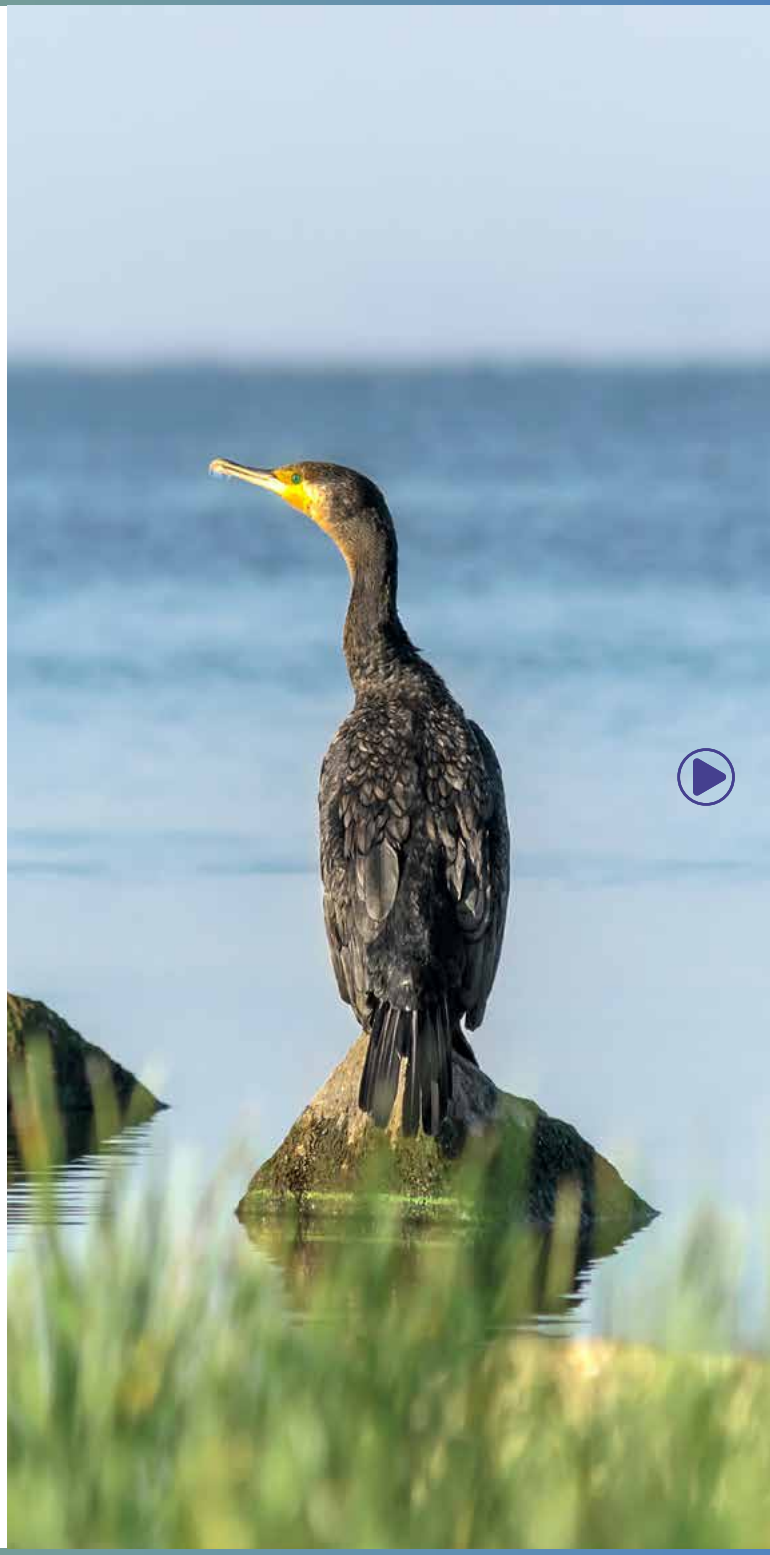
No Significant Cumulative Effects have been identified in relation to Rampion 2 on offshore and intertidal ornithology from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for offshore and intertidal ornithological receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on offshore and intertidal ornithology from construction, operation and maintenance, and decommissioning activities.



5.9 Shipping and navigation

This section summarises the assessment findings for shipping and navigation, based on **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference: 6.2.13).

How effects on shipping and navigation has been assessed

The assessment has considered impacts from construction and decommissioning phase activities on shipping and navigation, including: construction / decommissioning activities which may cause displacement of vessels, increased encounters and collision risk with other vessels; and construction/decommissioning activities which may displace existing shipping routes/ activity and/or restrict access to ports.

During the operational phase, impacts that have been assessed include: displacement of vessels, increased encounters and collision risk with other third-party vessels; creation of collision vessel to structure allision; reduced access to ports; creation of under keel clearance—caused by presence of cable protection; increased anchor interaction with subsea cables; and, reduction of emergency response provision including search and rescue capability.

The study area for the shipping and navigation assessment defined as a minimum 10 nautical mile buffer of the proposed DCO Order Limits, which is considered standard and has been used within the majority of shipping and navigation assessments for UK offshore wind farms.

The assessment for shipping and navigation was informed through a combination of reviewing data records and data obtained from site-specific surveys to determine main navigational features, vessel traffic, main commercial routes and maritime incidents within the proposed DCO Order Limits.

Baseline environment

The preliminary assessment for shipping and navigation was informed through a combination of reviewing data records and data obtained from site-specific surveys to determine main navigational features, vessel traffic, main commercial routes and maritime incidents within the PEIR Assessment Boundary.

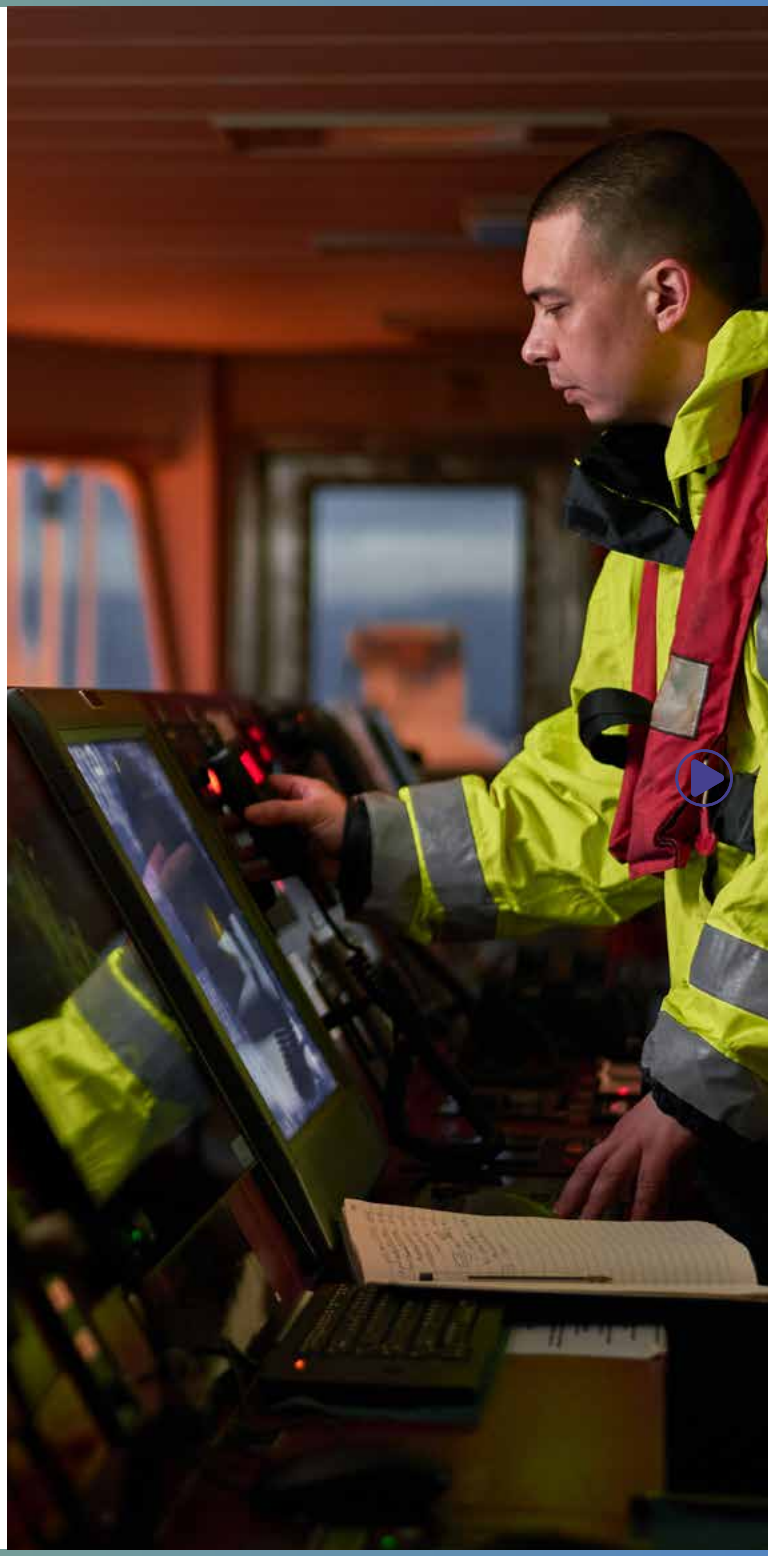
Shipping and navigation receptors that have been considered within the assessment include the following:

- commercial vessels;
- recreational vessels (2.4 to 24m length);
- commercial fishing vessels;
- military vessels; and
- UK emergency responders.

Embedded environmental measures

A range of environmental measures which relate to shipping and navigation are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 13-14** within **Chapter 13: Shipping and navigation, Volume 2** of the ES (Document Reference: 6.2.13).

- **The subsea cables will typically be buried below the seabed surface.**
- **Advance warning and accurate location details of construction, maintenance and decommissioning operations, associated Safety Zones and advisory passing distances will be given via Notice to Mariners and Kingfisher Bulletins.**
- **Monitoring of vessel traffic will be undertaken for the duration of the construction.**
- **Ongoing liaison with fishing fleets will be maintained during all stages of the Proposed Development via an appointed Fisheries Liaison Officer and Fishing Industry Representative.**
- **A Marine Pollution Contingency Plan will be developed and will outline procedures to protect personnel working and to safeguard the marine environment.**
- **RED will exhibit lights, marks, sounds, signals and other aids to navigation as required by Trinity House, Maritime & Coastguard Agency (MCA) and Civil Aviation Authority (CAA).**
- **There will be a minimum blade tip clearance of at least 22m above MHWS.**



Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on shipping and navigation from the construction, operation and maintenance, and decommissioning of Rampion 2.

Cumulative effects

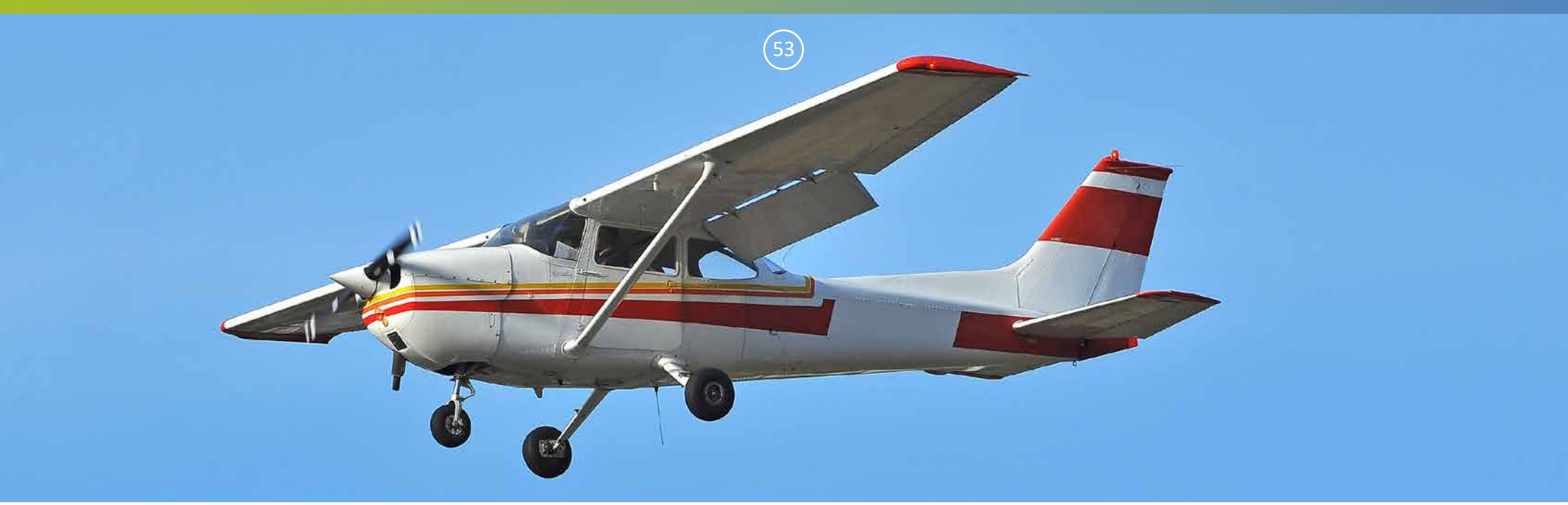
No Significant Cumulative Effects have been identified in relation to Rampion 2 on shipping and navigation from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for shipping and navigation receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on shipping and navigation from construction, operation and maintenance, and decommissioning activities.



5.10 Civil and military aviation

This section summarises the assessment findings for civil and military aviation, based on **Chapter 14: Civil and military aviation, Volume 2** of the ES (Document Reference: 6.2.14).

How effects on civil and military aviation have been assessed

The assessment has considered the likely significant effects on aviation activities with respect to impacts on radar and UK airspace predicted due to the physical presence of the offshore windfarm during the construction, operation and maintenance, and decommissioning phases with respect to civil and military aviation. The assessment also takes into consideration the CAA, Ministry of Defence (MoD), regional airports, local aerodromes, National Air Traffic Services (NATS), and other UK aviation stakeholders. Potential impacts include: physical obstruction to aircraft, increased air traffic in the area related to wind farm activities, operation of aerodromes, interference to civilian and military radars the risk of a collision.

Information to inform the civil and military aviation assessment has come from a desk study, which determined the aviation bodies that were likely to be affected by Rampion 2, including all radar systems within operational range. Comments made by PINS, the MoD and NATS in response to the Scoping Report have also been considered.

Baseline environment

Military and aviation receptors that have been considered in the assessment include civil aerodromes (Farnborough Airport, Gatwick Airport, Shoreham Airport and Southampton Airport), MoD facilities, National Air Traffic Services (NATS) facilities, and other aviation facilities such as offshore fixed-wing and helicopter operations, military low flying and search and rescue operations.

Embedded environmental measures

A range of environmental measures which relate to civil and military aviation are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 14-10** within **Chapter 14: Civil and military aviation, Volume 2** of the ES (Document Reference: 6.2.14):

- **An Emergency Response and Corporation Plan (ERCOP) will be developed.**
- **Aviation stakeholders will be notified of the location and height of all WTG, offshore substations and associated construction activities (all structures over 150ft).**
- **RED will agree a lighting scheme for the aviation lighting of structures (turbines and offshore support platforms) above 60m in height with the relevant authorities.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on civil and military aviation from construction, operation and maintenance, and decommissioning.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on civil and military aviation from construction, operation and maintenance, and decommissioning activities.

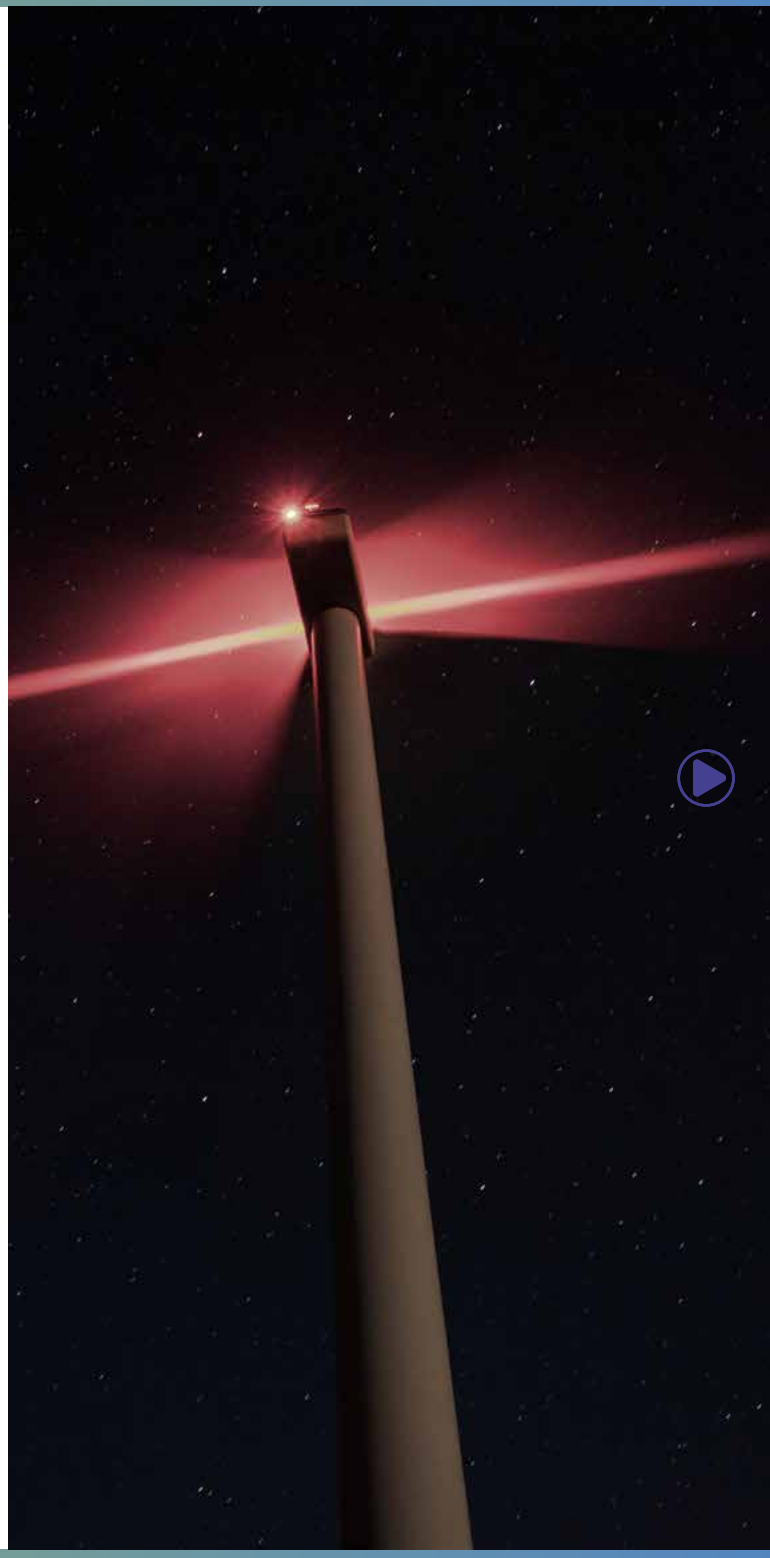
Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for civil and military aviation receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

However, aviation lighting fitted to offshore WTGs could cause confusion to the maritime community due to conflicting warning lighting representing a collision risk to maritime surface vessels. Work has been undertaken to develop an aviation warning lighting standard for the Proposed Development where it will be apparent to mariners that the aviation lighting is clearly distinguishable from maritime lighting.

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on civil and military aviation from construction, operation and maintenance, and decommissioning activities.



5.11 Seascape, landscape and visual impact assessment

This section summarises the assessment findings for seascape, landscape and visual impact assessment, based on **Chapter 15: Seascape, landscape and visual impact assessment, Volume 2** of the ES (Document Reference: 6.2.15).

How effects on seascape, landscape and visual has been assessed

The assessment for seascape, landscape and visual impact have considered impacts on seascape character, landscape character and visual impacts from construction and decommissioning phase activities. During the operation and maintenance phase, daytime impacts have been assessed on seascape, landscape, and visual receptors. Night-time effects of the operation and maintenance of Rampion 2 lighting (required for aviation and shipping) have been assessed on visual receptors and the dark night skies quality of the South Downs National Park (SDNP).

The study area for the seascape, landscape and visual impact assessment is defined as 50km from Rampion 2 the wind farm array area (for the purposes of the SLVIA assessment, this comprising the maximum extent of the proposed array area within which the WTGs will be installed). It is broadly defined by a northern terrestrial area, including the counties of East Sussex, West Sussex, Isle of Wight, Hampshire, Surrey, and Kent; as well as the City of Brighton and Hove; and a southern offshore area defined by waters of the English Channel.

The information used in the ES has come from a variety of sources including: a review of appropriate literature, obtaining relevant data and landscape assessments from local councils and statutory bodies, records from Rampion 1, site-specific field-survey work and meetings with groups including: Historic England, National Trust, Natural England, East Sussex County Council, West Sussex County Council, Adur and Worthing District Councils, Arun District Council, Brighton and Hove City Council, Horsham District Council, Mid-Sussex District Council, Chichester Harbour AONB, High Weald AONB Partnership, Isle of Wight AONB Partnership and the SDNPA.

Baseline environment

The assessment for seascape, landscape and visual impact has been informed by desk-based studies and field survey work undertaken within the study area. The landscape, seascape and visual impact assessment baseline has been informed by a desk-based review of landscape and seascape character assessments, and the Zone of Theoretical Visibility (ZTV).

This has been used to identify receptors that may be affected by the offshore elements of Rampion 2 and produce written descriptions of their key characteristics and value.

Field-survey work for viewpoint photography, visual assessment and landscape assessment surveys were undertaken during August, September, November 2020 and August 2021.

Seascape, landscape and visual receptors that have been considered within the assessment include the following:

- seascape character;
- landscape character and designations/ defined areas;
- South Downs National Park Special Qualities;
- visual receptors which includes settlements, key visitor locations and destinations, transport and recreational routes and viewpoints.

Views to the sea and the offshore elements of Rampion 2 from the West Sussex coastal plain (the area of West Sussex between the urban coastline and boundary of the South Downs National Park) are limited by existing vegetation, woodland and buildings within urban areas. This coastal plain is separated from the sea by large urban areas. The main areas where Rampion 2 may be theoretically visible are coastal areas between Selsey Bill and Beachy Head. The higher ground of the South Downs largely screens the area to the north from the sea.

Embedded environmental measures

A range of environmental measures which relate to seascape, landscape and visual impact assessment are embedded as part of the Rampion 2 design in order to remove or reduce significant environmental effects as far as reasonably possible. Examples of these measures include the following with all information present in **Table 15-26** within **Chapter 15: Seascape, landscape and and visual impact assessment, Volume 2** of the ES (Document Reference: 6.2.15):

- **Maximum blade tip height is 325m from LAT and maximum rotor diameter is 295m.**
- **Due regard will be given to design principles held in Rampion 1 Design Plan and design principles to be developed for Rampion 2, with consideration of the seascape, landscape and visual impacts on the South Downs National Park and Sussex Heritage Coast.**
- **Marking and lighting the Proposed Development offshore will be undertaken in accordance with relevant industry guidance and as advised by relevant stakeholders.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on seascape landscape and visual receptors from construction, operation and decommissioning activities within the geographic areas of Hampshire and the Solent, and the Isle of Wight. **No Significant Effects** on the landscape character or views from the High Weald and Low Weald have been identified.

Significant seascape, landscape and visual effects of the offshore elements of Rampion 2 are contained within the areas of the SDNP including Sussex Heritage Coast, West Sussex, East Sussex and the City of Brighton.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on seascape, landscape and visual from construction, operation and maintenance, and decommissioning activities.

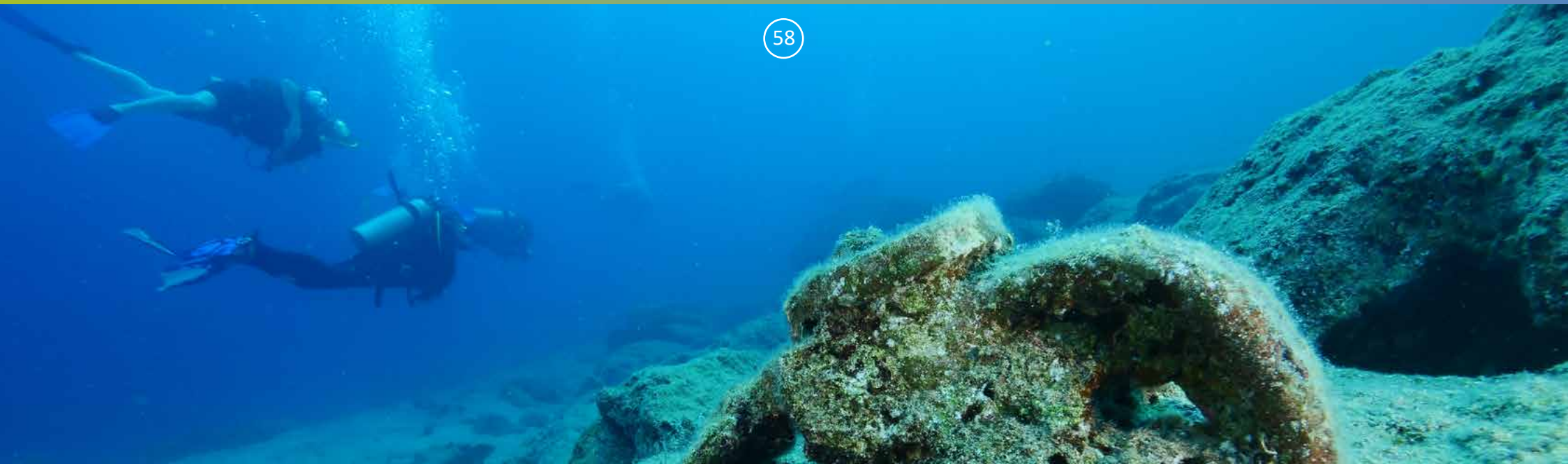
Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on seascape, landscape and visual from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Seascape, Landscape or Visual Effects of greater significance compared to the impacts considered alone were identified for seascape, landscape, and visual receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Example photomontage of what Rampion 2 could look like from Beachy Head. See **Figure 15.26e** of the ES (Document Reference: 6.3.15).



5.12 Marine archaeology

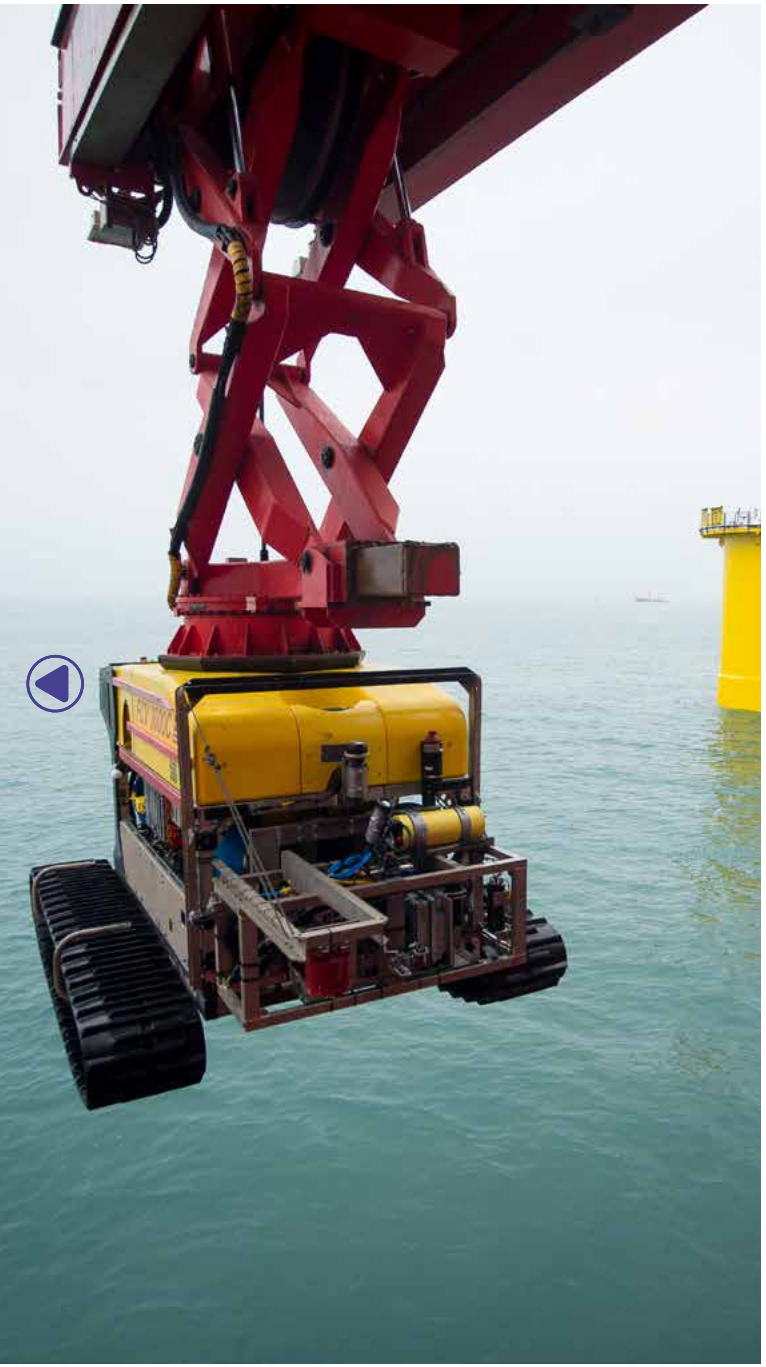
This section summarises the assessment findings for marine archaeology, based on **Chapter 16: Marine archaeology, Volume 2** of the ES (Document Reference: 6.2.16).

How effects on marine archaeology have been assessed

The assessment has considered the likely significant effects on marine heritage from the construction, operation, and decommissioning of Rampion 2. This includes physical resources such as shipwrecks, aviation remains, archaeological sites, archaeological finds and material including pre-historic deposits as well as archival documents and oral accounts recognised as of historical/archaeological or cultural significance. Potential direct effects on marine heritage include those such as the loss or disturbance of marine archaeology and indirect effects include those such as changes to the character of the sea surface and the perception of the historic seascape.

Information on the existing marine heritage has been gathered primarily from geophysical surveys which detect any natural or manmade submerged structure on the seabed and therefore assist in characterising the marine archaeology present. A desk study was also undertaken, which involved a literature review and the collation of data from a range of sources including Historic England's National Record of the Historic Environment (NRHE), West Sussex and East Sussex's Historic Environment Records (HER), UK Hydrographic Office (UKHO), and a number of Antiquities and archaeological discoveries' databases.

In addition, in order to understand the existing marine heritage environment and associated potential issues, engagement has taken place with Historic England, East Sussex County Council, West Sussex County Council, South Downs National Park Authority and the Marine Management Organisation.



Baseline environment

The marine archaeological resource can be characterised within the following four main categories of sites and features.

- Landscape: submerged prehistoric landscapes related to fluctuations in past sea-level. Such landscapes may contain significant evidence of prehistoric human occupation and/or environmental change.
- Vessel: Archaeological remains of vessels deposited after a wrecking event at sea or abandoned in an intertidal context.
- Aircraft: Remains of aircraft crash sites, typically the result of Second World War military conflict, but also numerous passenger casualties. This category includes aircraft and airships dating to the First World War.
- Structures: Structural remains including defensive structures, lighthouses, jetties, harbours, fish traps or sites lost to the sea as a result of coastal erosion may be found within the intertidal zone (between Mean Low Water Springs (MLWS) and Mean High Water Springs (MHWS).

Within the marine archaeology study area there are a total of 38 live wrecks, 22 dead wrecks, four unknown or unconfirmed, and two lifted wrecks. There are also 17 reported losses of aircraft, all but one, which is unidentified, date to the Second World War, as well as a number of targets identified during seabed surveys which may have further archaeological interest.

Embedded environmental measures

A range of environmental measures which relate to marine archaeology are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 16-16** within **Chapter 16: Marine archaeology, Volume 2** of the ES (Document Reference: 6.2.16):

- **A Marine Written Scheme of Archaeological Investigation (WSI) will outline the Archaeological Exclusion Zones (AEZ), the implementation of a Protocol for Archaeological Discoveries in accordance with 'Protocol for Archaeological Discoveries: Offshore Renewables Projects' and future monitoring and assessment requirements.**
- **Offshore geophysical surveys (including UXO surveys) undertaken during the life of the project will be subject to full archaeological review where relevant in consultation with Historic England.**
- **Offshore geotechnical surveys prior to construction will be undertaken following early discussions with Historic England.**

Likely significant effects

Overview

Based on the proposed location of the offshore infrastructure and its subsequent operation, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on marine archaeology from construction, operation and maintenance, and decommissioning activities.

Cumulative effects

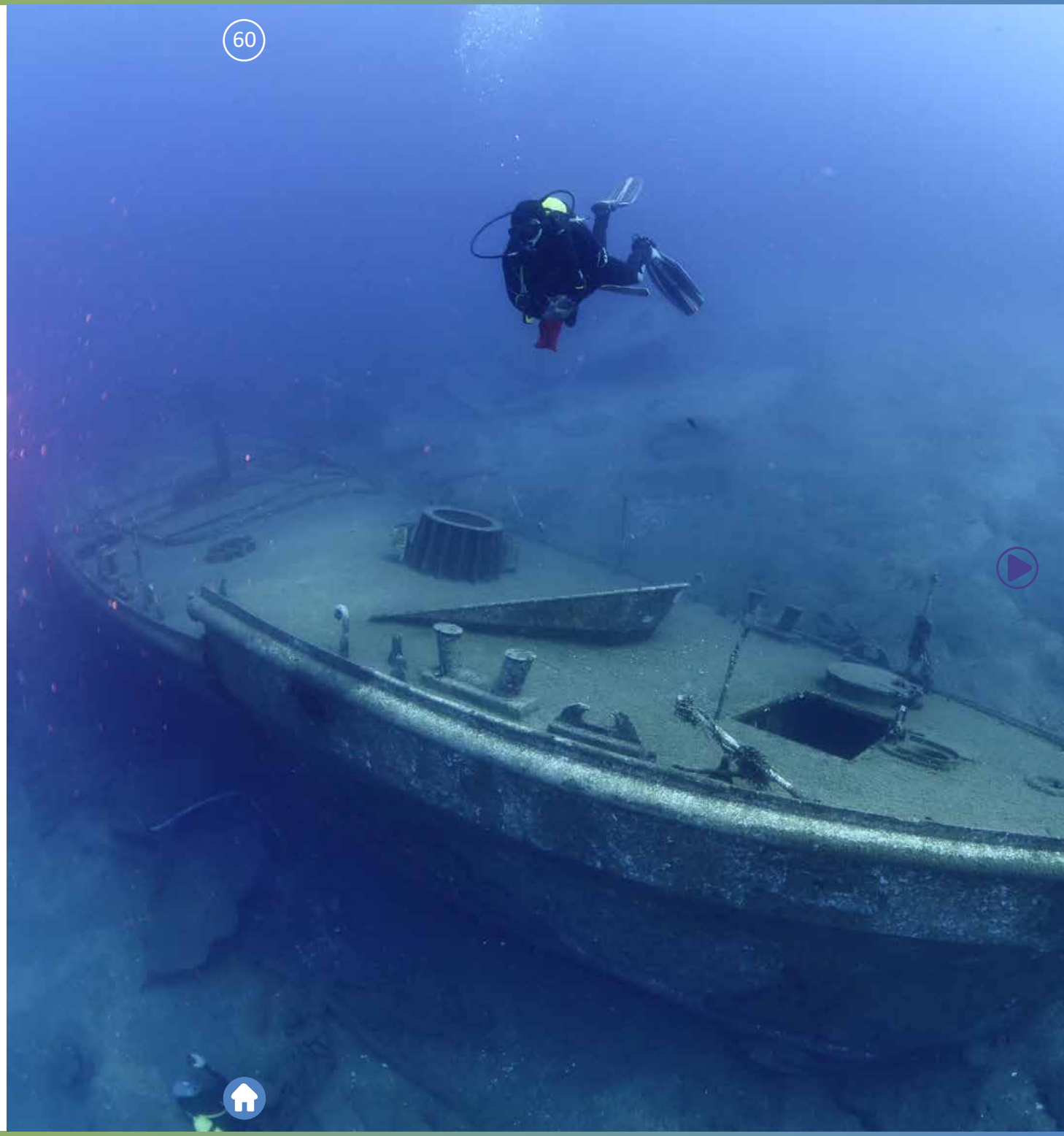
No Significant Cumulative Effects have been identified in relation to Rampion 2 on marine archaeology from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for marine archaeological receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on marine archaeology from construction, operation and maintenance and decommissioning activities.



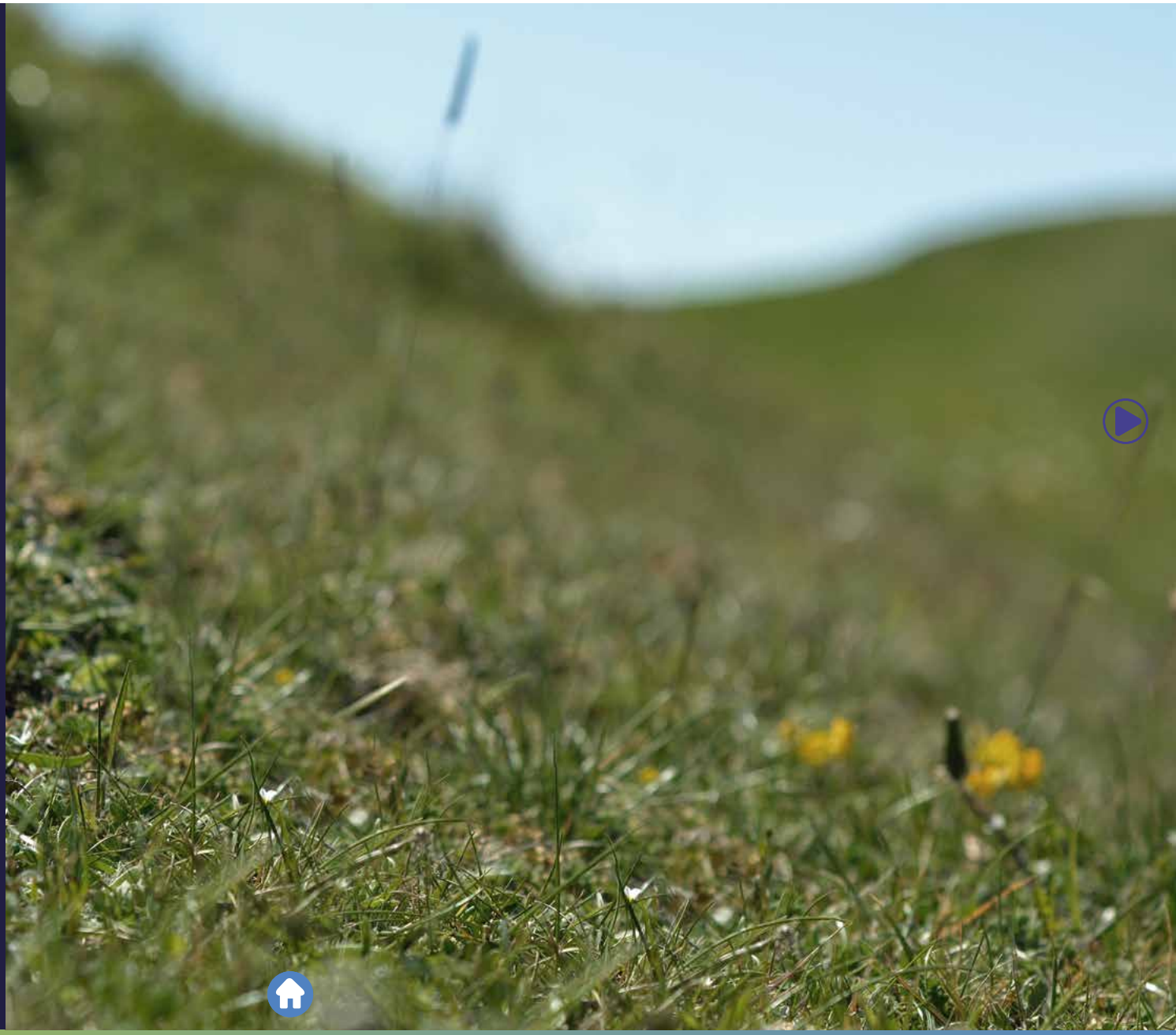
6. Onshore EIA

6.1 Introduction

This section provides a summary of the assessment of likely significant effects to onshore resources and receptors including:

- **Socio-economics;**
- **Landscape and visual impact assessment;**
- **Air quality;**
- **Soils and agriculture;**
- **Noise and vibration;**
- **Terrestrial ecology and nature conservation;**
- **Transport;**
- **Ground conditions;**
- **Historic environment;**
- **Water environment;**
- **Major accidents and disasters;**
- **Population and human health; and**
- **Climate change.**

The onshore part of the proposed DCO Order Limits is shown in Figure 1–2.



6.2 Socio-economics

This section summarises the assessment findings for socio-economics, based on **Chapter 17: Socio-economics, Volume 2** of the ES (Document Reference: 6.2.17).

How socio-economic effects have been assessed

The assessment considers the likely significant effects at a national, regional (Sussex) and local level on jobs, economic output, the visitor economy, in addition to both onshore and offshore recreation during the construction, operation and decommissioning phases of Rampion 2.

Information on the existing socio-economic baseline situation has been gathered from a site walkover and from data requested from a number of sources. This has included government and local authority records such as the Office of National Statistics (ONS), and consultation with West Sussex County Council (WSCC), South Downs National Park Authority (SDNPA), National Trail Officer for the South Downs Way, Brighton and Hove City Council, Visit Brighton, Natural England, Sustrans, BEKS Kitesurfing School, West Sussex Local Access Forum and the South Downs Local Access Forum.

Baseline environment

The socio-economic baseline assessment found that Sussex has a total population of around 1.71 million people, of whom 60% are of core working age (i.e. aged 16-64). Data from the Office for National Statistics (ONS) indicates that Sussex contributed over £40 billion gross value added (GVA) to the UK economy per annum. In relation to GVA per head of population, data shows a significant gap between Sussex and the UK. The employment rate in Sussex is approximately 79% when compared with the national average of 76%; while the average unemployment rate is 3.9%, slightly higher than the average for the UK as a whole (3.7%).

Recreational activities and attractions in the area include bathing, scuba diving, recreational angling, sailing, wind surfing and kite surfing, Climping Beach, Rivers Arun and Adur, plus numerous cycle routes, public rights of way and promoted routes (England Coast Path, Monarch's Way, the Downs Link and the South Downs Way National Trail).

Embedded environmental measures

A range of environmental measures which relate to socio-economic impacts are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 17-19** within **Chapter 17: Socio-economics, Volume 2** of the ES (Document Reference: 6.2.17):

- **RED will work with local partners and seek to maximise the ability of local people to access employment opportunities associated with the construction and operation of Rampion 2.**
- **An outline Code of Construction Practice (COCP) will be adopted to minimise temporary disturbance to residential properties, recreational users and existing land users. It will provide details of measures to protect environmental receptors.**
- **Preparation and implementation of a Public Rights of Way Management Plan that includes measures to manage and mitigate effects on the Public Rights of Way network.**

Likely significant effects

Overview

Rampion 2 is predicted to have a number of likely **Significant Effects** on a number of onshore and offshore recreational activities (event attendees, users of Public Rights of Way including 2092, 2693, 2208, 3514, 2211, wind/kite surfers, recreational angling and village green users) and scuba diving activities during the operation and decommissioning phases. No direct **Significant Impacts** were identified for volume and value of the Sussex tourism economy.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on socio-economics from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for socio-economic receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on socio-economic receptors from construction, operation and maintenance, and decommissioning activities.

6.3 Landscape and visual impact assessment

This section summarises the assessment findings for landscape and visual impact assessment, based on **Chapter 18: Landscape and Visual Impact assessment, Volume 2** of the ES (Document Reference: 6.2.18).

How effects on landscape and visual impact receptors have been assessed

The assessment has considered the likely significant effects of Rampion 2 on landscape and visual impact receptors. The assessment methodology used is based on the current guidance produced by the Landscape Institute and the Institute of Environmental Management & Assessment (IEMA).

- Landscape effects deal with the effects of change and development on landscape as a resource. The concern here is with how the proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character.
- Visual effects deal with the effects on specific views and on the general visual amenity experienced by people. Visual amenity considers the overall views and surroundings, which provide a visual setting or backdrop to the activities of people living, working, recreating, visiting or travelling through an area.

Effects in relation to landscape have been considered through analysis of local landscape character areas/types. Visual effects have been considered through analysis of the Zone of Theoretical Visibility (ZTV) relating to Rampion 2. The ZTV is the theoretical area, based on computer modelling, in which part or all of Rampion 2 will be visible. Visual effects are also considered using viewpoints, which are specific locations which have been agreed with stakeholders.

The information used in the assessment has been gathered from a combination of desk-based study, including published landscape character assessments, and a field survey programme. The survey programme has gathered information regarding existing landscape character and views (aided by photography) within the study area. Consultation in relation to the study area and viewpoint selection has been undertaken with the South Downs National Park Authority (SDNPA), Natural England (NE), National Trust, West Sussex County Council (WSCC), Horsham District Council, Arun District Council, Mid-Sussex District Council and High Weald AONB Partnership.

Baseline environment

The landscape along the onshore cable corridor and the substation search areas can broadly be divided into three areas. Between the landfall and the edge of the SDNP is a coastal plain which rises gently towards the National Park. The relatively flat, lower coastal plain is heavily urbanised with regional road and rail corridors. In between development and transport links is a farmed landscape of large open fields with few trees and hedgerows. Further north towards the SDNP, the landscape is varied, incorporating open arable farmland, smaller settlements, and more wooded areas.

The onshore cable corridor crosses a part of the SDNP which has a broad elevated east–west ridge, and a series of hills east and west beyond the study area. The area to the east of the River Arun has an open, exposed 'South Downs' landscape, however, the area to the west of the River Arun features large woodlands. Roads and villages are mainly concentrated in the river valleys.

Public rights of way including the South Downs Way National Trail cross this landscape with some panoramic views across the downs and beyond.

Between the SDNP and the northeast of the study area, the landscape drops sharply into the broad, low-lying vales of the Low Weald, before rising again towards the High Weald AONB beyond. This landscape is predominantly agricultural and largely pastoral with either grassland or meadows. A number of smaller towns and villages are scattered among areas of woodland, while larger villages have grown around major transport routes. Numerous woodland blocks are scattered throughout this landscape along with many small rivers, streams and water features such as ponds and brooks.

Visual receptors are people who may have a view of Rampion 2, including residents and people using transport routes and Public Rights of Way. Existing views include those of the semi-rural and urban components of the landscape within the study area, summarised above.

Views tend to be open in the south of the study area, with panoramic views out to sea from areas of the coastal plain. Where vegetation does not restrict views, there are also longer distance views of the surrounding landscape from more elevated parts of the SDNP and High Weald AONB (which is beyond the study area). Moving further inland to the northeast of the study area, variations in topography and a greater concentration of woodlands and hedgerows mean that views tend to be less open.

Embedded environmental measures

A range of environmental measures which relate to landscape and visual impacts are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Environmental measures have been incorporated into the final design, including examples as outlined below. Examples of these measures include the following with all information present in **Table 18-25** within **Chapter 18: Landscape and visual impact assessment, Volume 2** of the ES (Document Reference: 6.2.18):

- **The entire onshore cable corridor will be completely buried underground for its entire length where practicable.**
- **Landscape elements such as trees, woodland and hedgerows that are removed during the construction process will be reinstated as far as possible.**
- **The onshore cable route will avoid the brows of hills as far as is reasonably practical and is likely to follow the established pattern of the landscape.**
- **Minimising diversions and temporary closures on public rights of way including the South Downs Way and Downs Link.**
- **Where construction lighting is required, this will be limited to directional task lighting to minimise impacts to residents and walkers within the South Downs National Park.**

Likely significant effects

Overview

The ES concludes that Significant Effects are likely to occur to landscape and visual amenity receptors at some assessed locations as a result of construction, operation and maintenance, and/or decommissioning of Rampion 2. Construction and decommissioning effects will typically be short term and temporary. The summary of landscape residual effects **Tables 18-40** to **18-45** in **Chapter 18: Landscape and visual impact assessment, Volume 2** of the ES (Document Reference: 6.2.18).

Cumulative effects

Due to the length of the onshore cable route numerous other developments have been assessed to understand the likelihood that cumulative effects could occur with the Proposed Development. The full table of assessment impacts within **Table 18-39, Chapter 18: Landscape and visual impact, Volume 2** of the ES (Document Reference: 6.2.18). Cumulative effects (additional and combined) resulting from the onshore elements of the Proposed Development with other developments during the construction phase would range from Negligible to Major effects to landscape and visual amenity receptors and this would result in a temporary significant cumulative effect. Cumulative effects resulting from the onshore elements of the Proposed Development during its operation would be Negligible to Minor and this would not result in a significant cumulative effect.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for landscape and visual receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on landscape and visual receptors from construction, operation and maintenance, and decommissioning activities.

6.4 Air quality

This section summarises the assessment findings for air quality effects, based on **Chapter 19: Air quality, Volume 2** of the ES (Document Reference: 6.2.19).

How effects on air quality have been assessed

Likely significant effects on air quality may be caused due to emissions of dust and odour, and any significant increases of pollutants in the air.

The main pollutants of concern in the UK in relation to health effects are nitrogen dioxide (NO_2) and particles (Particulate Matter - PM). The particles in the air which were considered in the assessment were PM_{10} (particulate matter up to 10 micrometres in diameter) and $PM_{2.5}$ (particulate matter up to 2.5 micrometres in diameter). Nitrogen oxides (NOx) has also been considered in relation to ecological receptors.

Increased emissions that could arise because of changes in activity due to Rampion 2 have been assessed. These changes include activities that could generate dust and odour during construction, additional road vehicle movements during construction, and changes in road vehicle movements as Rampion 2 becomes operational.

The assessment has considered the potential effects of construction dust on people within 350m of work sites, and within 50m of the route(s) used by vehicles on the public highway, up to 500m from the temporary construction site. For sensitive ecological sites the distance considered is 200m of the boundary of the temporary construction site or of the route(s) used by construction vehicles on the public highway, up to 500m from the temporary construction site entrance.

For emissions of air pollutants from construction and operational traffic and construction equipment on site the assessment has considered ecological receptors, residential properties, and other locations where people may be exposed within 200m of affected roads and temporary construction sites and especially in Air Quality Management Areas (AQMAs).

Information on existing air quality is based on data requests from a number of sources, including government and local authority records, and consultation with Natural England, Arun District Council (ADC), Horsham District Council (HDC) and Mid Sussex District Council (MSDC), as these are the local authorities with responsibility for onshore air quality.

Baseline environment

Local planning authorities are required to assess air quality within their administrative area. They are required to declare an Air Quality Management Area (AQMA) where pollution levels may exceed Air Quality Objectives (AQOs) established for the protection of health.

The onshore landfall, cable corridor and substation areas lie within the administrative areas of three District Councils: Arun, Horsham, and Mid Sussex. Each district council produces an Annual Status Report which describes air quality in its administrative area.

Two AQMAs have been declared within 5km of Rampion 2, both for NO_2: Storrington AQMA and, Cowfold AQMA. In addition, road traffic will pass through the administrative areas of other local authorities.

In particular, traffic during the construction phase will pass through Worthing Borough Council AQMA No. 2. In each AQMA there are currently localised exceedances of the AQO, however where this occurs it is generally close to busy roads and not everywhere in each AQMA.

Air quality is generally expected to improve with time, and pollutant concentrations are predicted to be lower in future than at present. This is because of factors such as newer road vehicles meeting tighter emission standards and an increase in electric vehicles on the road.

Embedded environmental measures

A range of environmental measures which relate to air quality are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Environmental measures have been incorporated into the final design, including examples as outlined below. Examples of these measures include the following with all information present in **Table 19-29** within **Chapter 19: Air quality, Volume 2** of the ES (Document Reference: 6.2.19):

- **Avoiding sensitive sites by the project footprint where practical.**
- **Implementation of best practice air quality management measures which will be included within the Code of Construction Practice (COCP) and will be requirements of the DCO.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore temporary cable corridor, plus the incorporation of appropriate embedded environmental measures such as the **Outline CoCP** (Document Reference: 7.2), **No Significant Effects** have been identified in relation to potential impact of Rampion 2 on air quality from construction, operation and maintenance, and decommissioning.

Cumulative effects

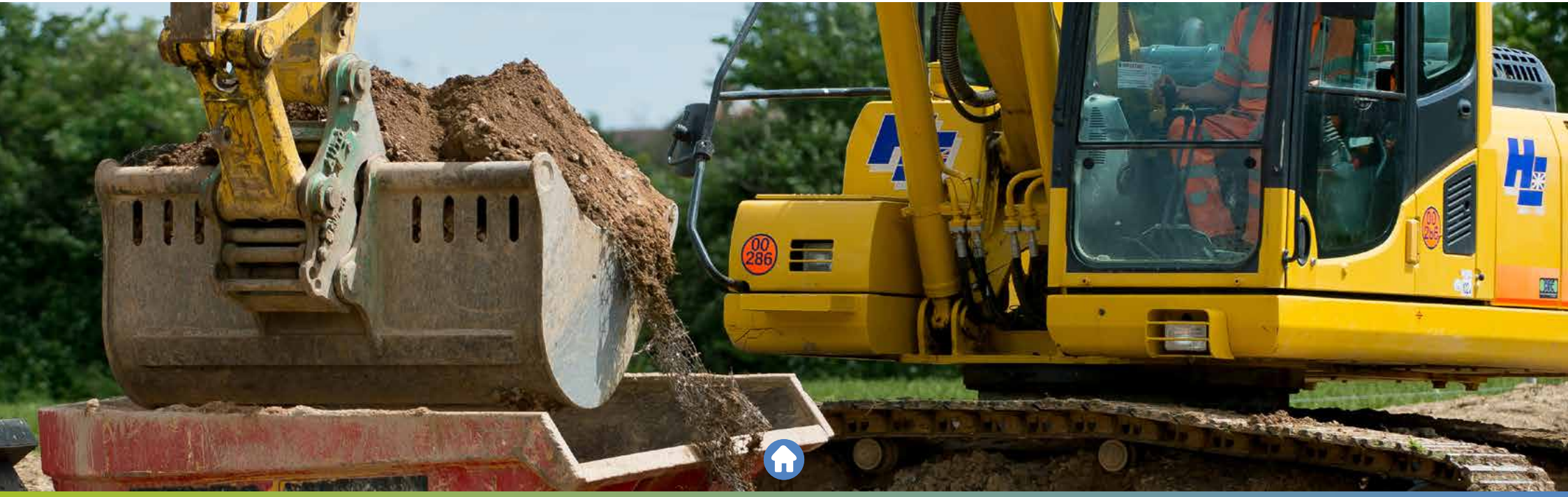
No Significant Cumulative Effects have been identified in relation to Rampion 2 on air quality from construction, operation and maintenance, and decommissioning activities.

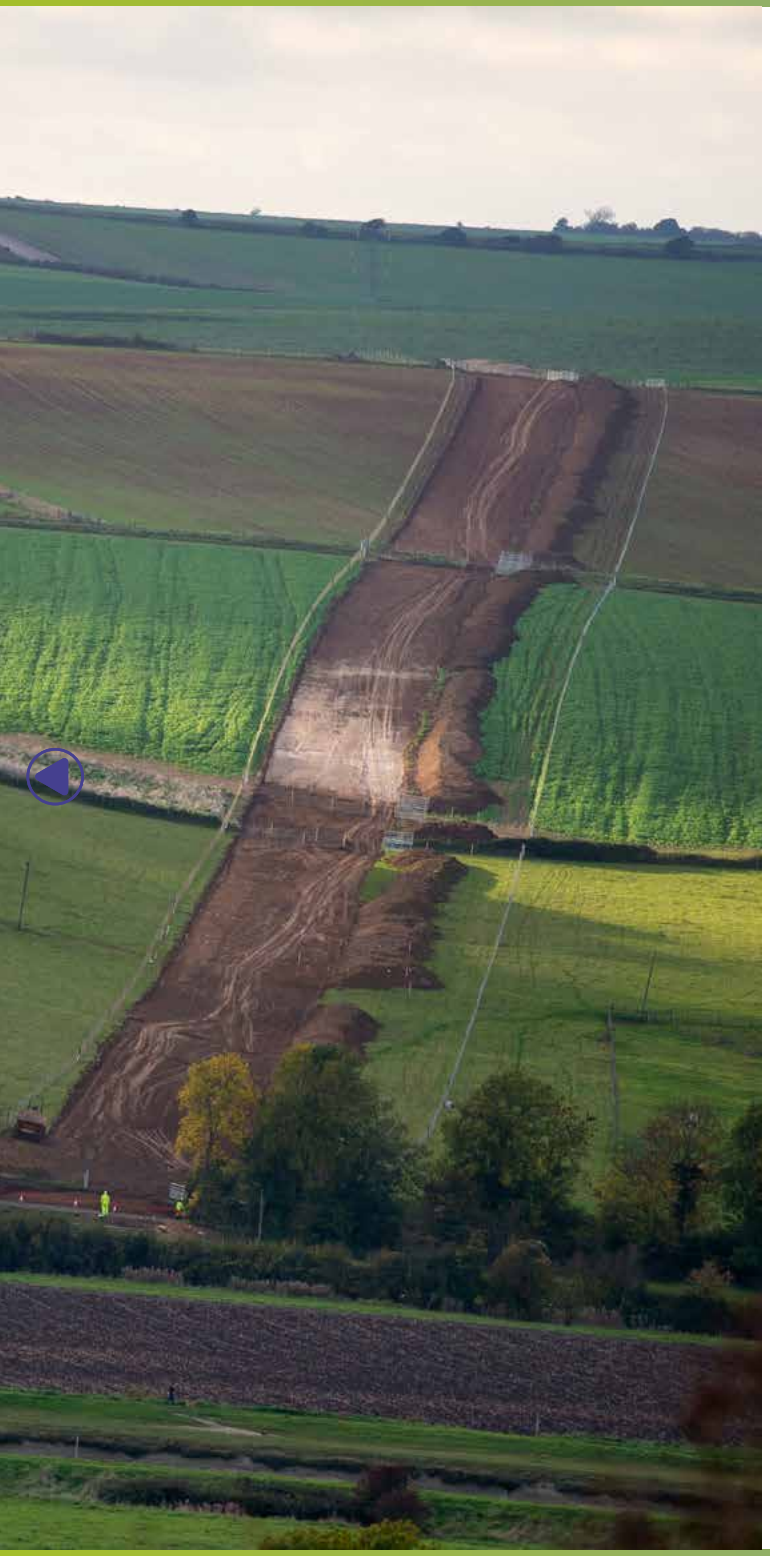
Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for air quality receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on air quality receptors from construction, operation and maintenance, and decommissioning activities.





6.5 Soils and agriculture

This section summarises the assessment findings for soils and agriculture, based on **Chapter 20: Soils and agriculture, Volume 2** of the ES (Document Reference: 6.2.20).

How effects on soils and agriculture effects have been assessed

The assessment on soils and agriculture examines the likely significant effects that maybe experienced as a result of Rampion 2 on soil resources and agricultural land resources.

Soil is a finite resource that provides important ecosystem services, including a growing medium for food, timber and other crops; a store for carbon and water; and as a reservoir of biodiversity; and as a buffer against pollution. Agricultural land is graded in England and Wales (from 1 to 5) in order that its quality can be assessed and compared. A combination of climate, topography and soil characteristics and their unique interaction determines the limitation and grade of the land. Best and Most Versatile (BMV) agricultural land is graded 1 to 3a (MAFF, 1988) and this is the land which is most flexible, productive and efficient in response to changes.

The assessment focuses on the construction phase of Rampion 2, as at the Scoping stage of the EIA it was agreed that there are unlikely to be any significant effects on soils and agriculture during the operational and decommissioning phases of Rampion 2. During the construction phase, temporary construction areas will be required for the landfall, cable corridor, and onshore substation. Some agricultural land will therefore be taken out of active management for these periods. Permanent loss of any agricultural land will be restricted to the onshore substation site (6ha).

A desk-based review of literature and existing datasets has been undertaken to gather data and information on soil resources and agricultural land within the study area alongside soils and agricultural land classification (ALC) surveys. Data was collated from a number of sources, including the National Soils Research Institute data, Ordnance Survey, British Geological Society (BGS), Gov.uk open data/ Multi-Agency Geographic Information for the Countryside (MAGIC) website and Open-access Google Earth aerial imagery.

Baseline environment

The land near the coast is a mixture of silty soils and fine loamy soils over gravel. These soils give mainly high-quality agricultural land dominated by arable farming. On the South Downs, the soils are mainly shallow over chalk, with deeper soils in dry valleys. The South Downs has a mixture of arable and livestock farms with woodland plantation. On the Weald, heavier soils over clays are recorded which are typically wet and of moderate agricultural quality. The Weald is under grassland with variable proportions of cereal rotation.

Embedded environmental measures

A range of environmental measures which relate to soils and agriculture are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 20-17** within **Chapter 20: Soils and agriculture, Volume 2** of the ES (Document Reference: 6.2.20):

- **Burying the onshore cable underground for its entire length where practicable.**
- **Avoiding sensitive sites by the project footprint where practical.**
- **Reinstating land to pre-existing condition as far as reasonably practical in line with Defra 2009 guidelines.**
- **Storing soil in line with Defra 2009 guidelines; and using appropriate machinery with low ground pressure to minimise soil compaction.**
- **Soil management measures will be included in a Soil Management Plan which will form part of the COCP and will be implemented during the construction phase.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore cable corridor, plus the implementation of embedded environmental measures such as the **Outline SMP** (Document Reference 7.4), no significant effects have been identified on soil and agricultural land receptors during the construction, operation and maintenance, and decommissioning phases.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on soils and agriculture from construction, operation and maintenance and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for soils and agricultural receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on soils and agriculture receptors from construction, operation and maintenance, and decommissioning activities.

6.6 Noise and vibration

This section summarises the assessment findings at this point in the EIA process for noise and vibration effects, based on **Chapter 21: Noise and Vibration, Volume 2** of the ES (Document Reference: 6.2.21).

How noise and vibration effects have been assessed

The assessment considers likely significant noise and vibration effects during construction and decommissioning of Rampion 2 from the following sources: construction of the onshore infrastructure (landfall, cable corridor and substation) and associated construction traffic, and during the decommissioning phase the removal of equipment and reinstating sites, including associated traffic. The assessment considers:

- residential receptors (people in their homes including their gardens and shared community open spaces such as parks); and
- non-residential receptors (including schools, hospitals, places of worship, commercial buildings, and leisure areas).

Once further design details are available, an assessment will be made of construction of offshore wind turbines (WTGs) and offshore substations, and operation and maintenance of the onshore substation and WTGs. This will consider both residential and non-residential receptors and will be reported at the ES stage.

Baseline environment

The coastline is interspersed with villages largely backed by agricultural land with the A259 running east / west. Sound levels in the area are likely to be influenced by road and rail traffic and additional sources such as gardening activities, conversation, and music closer to areas of habitation, as well as the sea on approaching the coast.

The largest settlement in the study area is Littlehampton. Sound levels here are principally likely to be influenced by local road traffic and rail traffic, as well as other sources of human activity.

Inland from the coast, the study area is predominantly rural, comprising a mosaic of arable and livestock farming land with blocks of commercial forestry. There are various isolated dwellings and some small villages throughout. Baseline sound levels are generally expected to be low and typical of a rural environment, being influenced by road traffic with additional sources of noise from human activity closer to areas of habitation.

Baseline vibration levels are likely to vary widely with localised temporary events, such as construction works. Levels of elevated vibration might be measurable adjacent to railways or poorly maintained roads. Otherwise, vibration levels are likely to be negligible for most of the study area.

Embedded environmental measures

A range of environmental measures which relate to noise and vibration are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 21-20** within **Chapter 21: noise and vibration, Volume 2** of the ES (Document Reference: 6.2.21):

- **Avoiding sensitive sites by the project footprint where practical.**
- **Implementation of measures to minimise disturbance as part of a Code of Construction Practice.**
- **Where noisy activities are planned and may cause disturbance, the use of mufflers, acoustic barriers and other suitable solutions will be applied.**
- **Rating Level limits for the operational substation based on identified receptors locations representing the nearest residential premises.**

Likely significant effects

Overview

Significant effects were identified without mitigation from the operation of the substation and the potential for significant effects of vibration from heavy vehicular traffic associated with the construction. Mitigation has been identified reducing the level of effect such that no significant residual effects have been identified in relation to noise and vibration from construction, operation and maintenance and decommissioning of Rampion 2.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on noise and vibration from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for noise and vibration receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on noise and vibration receptors from construction, operation and maintenance, and decommissioning activities.

6.7 Terrestrial ecology and nature conservation

This section summarises the assessment findings for terrestrial ecology and nature conservation, based on **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22).

How effects on terrestrial ecology and nature conservation have been assessed

The assessment has considered all ecological features (protected wildlife sites, referred to as designated sites, habitats and species) within the area that Rampion 2 could affect above mean high water springs (MHWS). This area, known as the Zone of Influence (ZOI), differs depending on the type of ecological feature considered and the nature of the potential environmental change that may arise from Rampion 2.

The assessment methodology used for biodiversity has been aligned with the standard industry guidance provided by the Chartered Institute of Ecology and Environmental Management.

The information used in the ES has come from a variety of sources. These include historical records of flora and fauna and descriptions of wildlife sites gained through desk study, remote sensing data collection exercise, ongoing field surveys, and meetings with groups such as Natural England (the government's advisory body on the natural environment) and other organisations which are interested in conserving wildlife including the Environment Agency, East Sussex County Council (ESCC), West Sussex County Council (WSCC), South Downs National Park Authority (SDNPA)Sussex Wildlife Trust (SWT), the Royal Society for the Protection of Birds (RSPB), Sussex Ornithological Society, Adur and Worthing District Councils, Ouse and Adur Rivers Trust, Sussex Local Nature Partnership (SLNP) and the Wildlife Trust.

Baseline environment

Surveys to establish habitat type and potential importance for nature conservation, known as 'Phase 1 habitat surveys', have been undertaken. Habitats identified within the study area include farmland, semi-natural habitats (woodland, semi-improved grassland, scrub, hedgerows and trees), ponds, rivers (River Arun and River Adur), streams and ditches, quarries and built development (roads, residential and commercial premises).

One Ramsar sites, two Special Protection Areas (SPAs) and three Special Areas of Conservation (SACs) were identified through the desk study, none of which fall within the onshore part of the proposed DCO Order Limits. In addition, a total of thirteen Sites of Special Scientific Interest (SSSIs) and one Local Nature Reserve (LNR) were identified within 5km of Rampion 2. Of the designated sites identified, Amberley Mount to Sullington Hill SSSI is located adjacent to the proposed DCO Order Limits. There are also a number of sites of importance in a county/ borough context, four are located fully or partially within the proposed DCO Order Limits.

A number of surveys have been undertaken including surveys for habitats, bats, badgers, birds and many other species.

Embedded environmental measures

A range of environmental measures which relate to terrestrial ecology and nature conservation are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 22-20** within **Chapter 22: Terrestrial ecology and nature conservation, Volume 2** of the ES (Document Reference: 6.2.22):

- **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 amongst others.**
- **Areas of temporary habitat loss will be reinstated, wherever practicable, following the completion of construction in each area.**
- **Enhancements to terrestrial ecology will be achieved through the delivery of new or improved habitats or measures to boost populations of certain species.**
- **Timing the removal of vegetation to avoid the bird breeding season.**
- **The adoption of pollution prevention and dust control techniques.**
- **Measures to avoid the spread of invasive species such as Japanese knotweed.**

Likely significant effects

Overview

No Significant Effects have been identified in relation to potential impacts of Rampion 2 on terrestrial ecology and nature conservation from onshore construction, and decommissioning.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on terrestrial ecology features during the construction, operation and maintenance and decommissioning phases.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for terrestrial ecology and nature conservation receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on terrestrial ecology and nature conservation receptors from construction, operation and maintenance, and decommissioning activities.

6.8 Transport

This section summarises the assessment findings for transport, based on **Chapter 23: Transport, Volume 2** of the ES (Document Reference: 6.2.23).

How transport effects have been assessed

The assessment for transport has been undertaken in line with current guidance for assessing potentially significant environmental effects is the Institute of Environmental Assessment (IEA) (1993) publication 'Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic' (hereafter referred to as 'GEART' The assessment for transport has considered the likely significant effects of Rampion 2 during construction, operation, and decommissioning on transport network users such as pedestrians, cyclists, public transport users and vehicle drivers and passengers.

GEART (IEA, 1993) provides two rules that are used to establish whether an environmental assessment of traffic effects should be carried out on receptors:

- Rule 1: Include roads where traffic flows are predicted to increase by more than 30% (or where the number of HGVs is predicted to increase by more than 30%); and
- Rule 2: Include any specifically 'sensitive' areas where traffic flows are predicted to increase by 10% or more.

The sensitivity of each highway link included in the assessment has been assigned a sensitivity in accordance with GEART (IEA, 1993). This is based on professional judgement and related to the proximity, volume and type of receptors along the highway link.

Based on the Rule 1 and Rule 2 and the sensitivity of the receptors shows the magnitude of change applied to the environmental effects to help identify levels of significance. The indicators to assess the magnitude of change are based on advice included within GEART (IEA, 1993) and professional judgement.

Baseline environment

The public highway network comprises the strategic road network, which is managed and maintained by Highways England and the local road network, which is managed and maintained by the relevant local authorities. Roads within the strategic road network that are proposed to be used for access include the A23 and A27. For the local road network this includes the A24, A26, A259, A272, A280, A281, A283, B2109, B2116, B2117 and B2118 and connecting roads. Information obtained from the Department for Transport has identified a number of accidents that have occurred on the highway network surrounding Rampion 2, however it is not considered there is a significant accident record on the local highways network.

Bus services are in operation between major settlements in the area, in addition there are two principal railway lines, one line running along the south coast between Brighton and Portsmouth and one line between Horsham and Portsmouth. The onshore temporary cable corridor, onshore substation and landfall, as well as temporary and permanent accesses potentially affect a number of Public Rights of Way (PRoWs), one of which is the South Downs Way, a National Trail. The onshore temporary cable corridor will cross two parts of the Sustrans national cycle network (NCN): NCN 2 and 223. At Newhaven Port the nearest element of the NCN is NCN 2 which runs along the B2109 across the junction with Railway Road.

The onshore temporary cable corridor has numerous crossings of roads including the A289, A27, A24, A283, B2135, B2116 and A281. There is also one crossing of the River Arun and two crossings of the National Rail network west of Littlehampton and Wick.

Embedded environmental measures

A range of environmental measures relating to transport network users are embedded as part of Rampion 2. Examples of these measures include the following with all information present in **Table 23-28** within **Chapter 23: Transport, Volume 2** of the ES (Document Reference: 6.2.23)

- **Routeing of heavy goods vehicles (HGV) during the construction period to avoid Air Quality Management Areas, the A24 through Findon and major settlements, such as Storrington, Cowfold, Steyning, Wineham, Henfield, Woodmancote and other smaller settlements, where possible.**
- **Main rivers, watercourses, railways and roads that form part of the Strategic Highways Network will be crossed by HDD or other trenchless technology where this represents the best environment solution and is financially and technically feasible .**
- **An Outline Construction Traffic Management Plan (CTMP) will be developed in consultation with West Sussex County Council which will set out the approach to managing and minimising the impact of the construction traffic on the transport network.**
- **An Outline Public Rights of Way Management Plan (PRoWMP) will be developed in consultation with West Sussex County Council which will set out the approach to managing the use of PRoWs during construction.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore cable corridor, plus the incorporation of appropriate embedded environmental measures (such as the Outline CTMP and Outline PRoWMP), **No Significant Effects** have been identified in relation to transport receptors from Rampion 2 construction, operation and maintenance, and decommissioning.

Cumulative effects

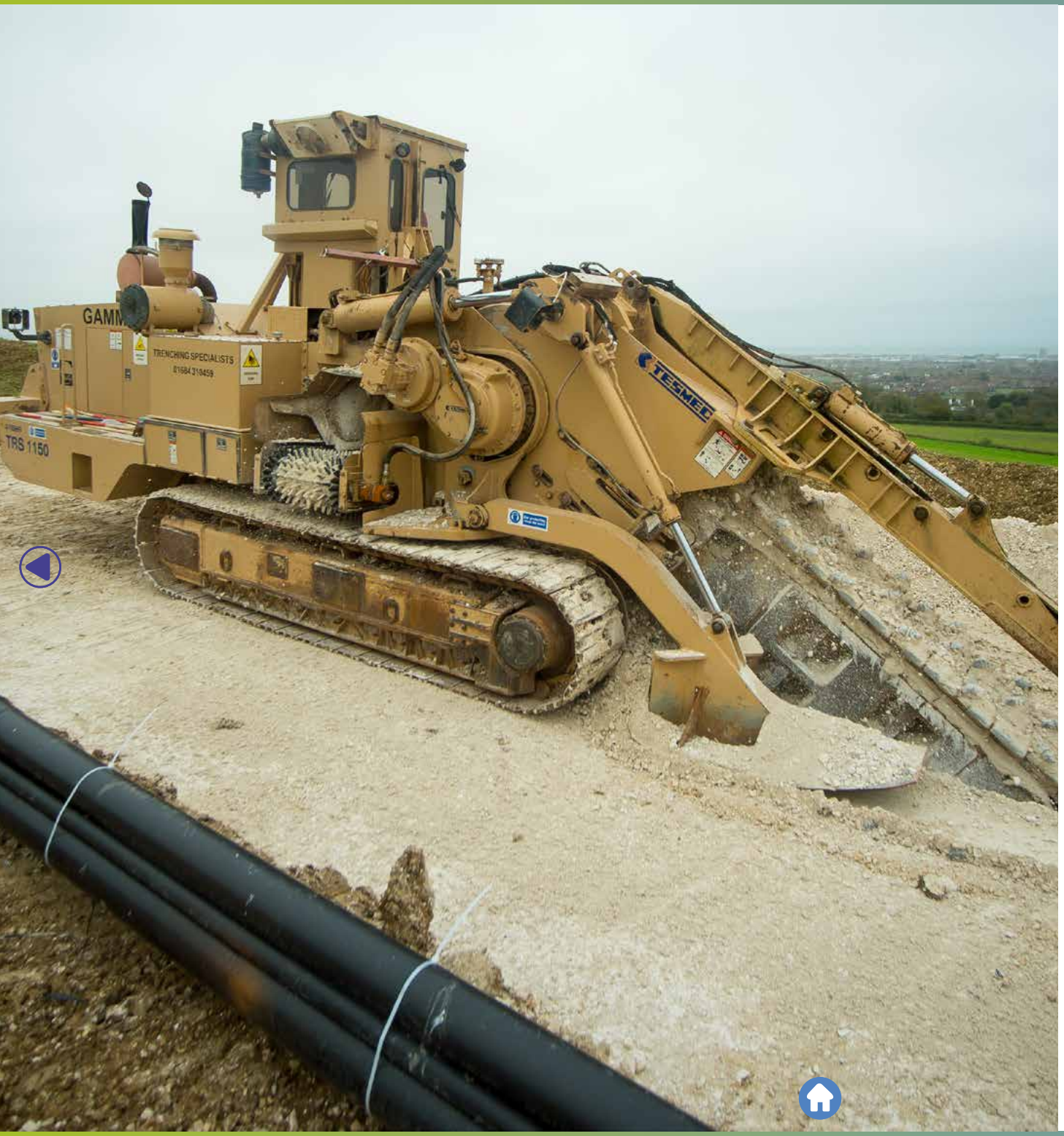
No Significant Cumulative Effects have been identified in relation to Rampion 2 on transport receptors from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for transport receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on transport receptors from construction, operation and maintenance, and decommissioning activities.



6.9 Ground conditions

This section summarises the assessment findings for ground conditions, based on **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24).

How effects on ground conditions have been assessed

The assessment has considered the likely significant effects of Rampion 2 on ground conditions, including land contamination, geohazards such as unstable ground conditions and settlement, and geodiversity, which includes, for example, Geological Sites of SSSI. Potential effects which have been assessed include the exposure of the workforce to health impacts, encountering contamination during intrusive works, physical intrusion into groundwater, and dewatering of trenches and excavations.

Information on existing ground conditions is based on data requests from a number of sources, including the Ordnance Survey, British Geological Society (BGS), government and local authority records, and through consultation with the Environment Agency, Natural England and relevant local authorities.

The assessment has considered the geographical area in which there could be impacts from Rampion 2 on ground conditions which could affect human health, the groundwater and surface water environment and geological sites (known as the Zone of Influence) during the construction, operation, and decommissioning phases.

Baseline environment

At the landfall location and around Arundel the geology underlying Rampion 2 is made up of a range of near surface deposits including sand, gravel and clays with a predominantly Chalk bedrock. In relation to the onshore temporary cable corridor, much of the solid geology is Weald Clay and sandstone. Groundwater is likely to be present in chalk, sands, gravels and clays. The main hydrogeological formation is Chalk, which the Environment Agency classifies as a Principal Aquifer. Environment Agency data also indicates that there are a number of existing groundwater abstractions and source protection zones (SPZs) to the northeast of Arundel. Numerous ponds and streams are also present within the study area, with the onshore temporary cable corridor crossing two rivers (the River Arun and the River Adur). There are no geological SSSI present within the study area, alongside two Locally Important Geological Sites (LIGSs). There are also a number of potential sources of contamination in the area of Rampion 2: historical and authorised landfills, sewage treatment works, infilled ground, industrial estates and the existing National Grid Bolney Substation.

Embedded environmental measures

A range of environmental measures which relate to ground conditions are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 24-14** within **Chapter 24: Ground conditions, Volume 2** of the ES (Document Reference: 6.2.24)

- **Avoiding sensitive sites by the project footprint where practical.**
- **Implementation of pollution prevention measures as part of a Code of Construction Practice (COCP).**
- **RED will ensure that the land used for the Proposed Development is suitable for the proposed use with respect to the potential for soil and groundwater contamination and, where necessary, undertake risk-based remediation.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore temporary cable corridor, plus the incorporation of appropriate embedded environmental measures such as the COCP, **No Significant Effects** have been on land contamination from construction, operation and maintenance, and decommissioning phases.
A **Significant** effect has been identified for minerals safeguarding during the construction phase.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on ground conditions from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for ground condition receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on ground conditions receptors from construction, operation and maintenance, and decommissioning activities.

6.10 Historic environment (onshore)

This section summarises the assessment findings for historic environment, based on **Chapter 25: Historic environment, Volume 2** of the ES (Document Reference: 6.2.25).

How effects on the historic environment have been assessed

The assessment has considered the likely significant effects of Rampion 2 on the onshore historic environment above Mean High Water Springs (MHWS), including archaeology, historic buildings/structures, and historic landscapes. Potential effects which have been assessed include direct effects (for example, loss of archaeology) and indirect effects (for example, change in the setting of a heritage feature) on designated heritage assets (such as Scheduled Monuments, Listed Buildings, Registered Parks and Gardens and Conservation Areas) and non-designated heritage assets (such as features and deposits of archaeological interest) and the historic landscape character. The assessment has considered the geographical area in which there could be impacts from the onshore infrastructure (landfall, cable connection and substation) and also the offshore works on the settings of onshore heritage assets during the construction, operation, and decommissioning phases.

Information on the existing historic environment is based on site walkovers and visits to off-site heritage assets, geophysical survey, targeted trial trenching, a desk-based geoarchaeological and palaeoenvironmental assessment and a desk study, which involved the collation of data from a range of sources including: Historic England's National Heritage List for England (NHLE), West Sussex Historic Environment Record (HER), UK Hydrographic Office (UKHO), Ordnance Survey (OS), government and local authority records, and consultation with the South Downs National Park Authority (SDNPA), Historic England and relevant local authorities.

In addition, in order to understand the existing historic environment and associated potential issues, engagement has taken place with the West Sussex County Council (WSCC) Archaeologist, Historic England, the SDNPA, the Conservation Officer at Arun District Council (ADC), Chichester District Council (CDC) Archaeologist, and the Conservation Officer at Horsham District Council (HDC)

Baseline environment

The southern part of the proposed DCO Order Limits is coastal landscape and is characterised by agricultural improvement and urban expansion, punctuated with historic farmsteads and hamlets.

The South Downs landscape in the central part of the proposed DCO Order Limits comprises a broad elevated east–west ridge with a predominantly steep, north facing scarp slope and a gentle southerly dip slope. The landscape is dominated by large open arable and grassland fields of the downlands.

In the northern part of the proposed DCO Order Limits the landscape comprises the gently undulating low-lying vales of the Low Weald. The landscape here is dominated by fields developed through a mixture of clearing undertaken in the medieval era, medieval and post medieval piecemeal enclosure, and modern field amalgamation.

In relation to designated heritage assets, a single scheduled monument falls partly within the proposed DCO Order Limits, which comprises medieval earthworks east and southeast of St Mary's Church, whilst a further four scheduled monuments are located immediately adjacent to the proposed DCO Order Limits. The proposed DCO Order Limits also crosses Sullington Conservation Area. There are no further designated heritage assets located within the proposed DCO Order Limits. Within 1km the study area there are 20 scheduled monuments; 261 listed buildings; and 12 conservation areas. There are no world heritage sites, registered parks and gardens, registered battlefields, protected wreck sites or protected military sites within the study area. There are also a large number of non-designated heritage assets in the study area representing all periods from the Palaeolithic to modern and comprise a range of record types including small find locations, historic landscapes, farmsteads, extant monuments, earthworks, buildings, military structures, memorials, telephone boxes, and archaeological sites and deposits.

Embedded environmental measures

A range of environmental measures which relate to the historic environment are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 25-24** within **Chapter 25: Historic environment, Volume 2 of the ES** (Document Reference: 6.2.25).

- **Avoiding sensitive sites by the project footprint where practical including ancient woodland, National Trust Land, Listed Buildings and Scheduled Monuments.**
- **Implementation of measures such as an agreed programme of archaeological recording and dissemination to mitigate any significant adverse effects during construction.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore cable corridor, plus the implementation of embedded environmental measures, **Significant residual effects** during the construction phase on potential Neolithic flint mining, mortuary and settlement remains (including where these may be related to the scheduled prehistoric flint mine on Harrow Hill), and on Bronze Age and early medieval archaeological remains within the South Downs, where these may be of national importance. Significant residual effects are also identified on listed building Oakendene Manor during the operation of Rampion 2, arising due to changes to its setting.

No other significant residual effects have been identified for historic environment during the construction phase, or during the operation and maintenance, and decommissioning phases

Cumulative effects

No significant cumulative effects have been identified in relation to Rampion 2 for the historic environment during the construction, operation and maintenance, and decommissioning phases.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for historic environment receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on historic environment receptors from construction, operation and maintenance, and decommissioning activities.

6.11 Water environment

This section summarises the assessment findings for water environment, based on **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26).

How effects on the water environment have been assessed

The assessment has considered potential effects of Rampion 2 on the water environment, which comprises the aquatic environment, water resources and flood risk receptors, during the construction, operation and decommissioning phases. This includes effects on water quality, river flows, groundwater levels, and physical changes to rivers, lakes and other water features, as well as effects on water supply. The assessment is accompanied by a Flood Risk Assessment (FRA).

The information used in the ES has been gathered through a desk study reviewing available data and consultation with the Environment Agency, Southern Water, Natural England, West Sussex County Council, and relevant local authorities including Arun District Council and Horsham District Council.

Baseline environment

The onshore part of the proposed DCO Order Limits extends approximately 38.8km from the landfall at Climping in the River Arun catchment to a new onshore substation at Oakendene in the proximity of Bolney within the River Adur catchment, crossing a number of watercourses, including the River Arun, River Adur, and their associated tributaries.

Beneath the surface, groundwater is likely to be present in chalk, sands, gravels and clays. The main hydrogeological formation is Chalk, which the Environment Agency classifies as a Principal Aquifer.

The South East River Basin Management Plan (RBMP) sets out the 'status' of rivers, lakes and groundwater bodies, according to the requirements of the Water Framework Directive (WFD). 'Status' is based on the quality of the water body, which includes physical, chemical and biological characteristics, and ranges from Bad to High. There are 23 WFD water bodies in the study area, of which 16 have a potential for a connection with Rampion 2.

There are eight water dependent conservation sites within the study area, of which Amberly Mount to Sullington Hill SSSI, Bines Green LWS and Rock Common Sand Quarry Local Geological Site (LGS) have been taken forward for assessment due to their location in proximity to Rampion 2.

Within the vicinity of Rampion 2 there are a variety of sources of flood risk, including from rivers (including the Rivers Arun and Adur and their tributaries), groundwater, surface water and artificial sources.

The study area intersects a number of source protection zones which are classified as Safeguard Zones and Drinking Water Protected Areas. In addition, within the vicinity of Rampion 2 there are a number of licensed abstractions, the majority of which take water from groundwater, as well as smaller registered private water supplies that do not require a licence. There are also consented discharges to both groundwater and surface waters.

The baseline conditions may be influenced in the future by changes to the climate and land use, and by improvements to land and water quality as a result of legislation, policy and other drivers.

Embedded environmental measures

A range of environmental measures which relate to the water environment are embedded as part of the Rampion 2 design to remove or reduce significant environmental effects as far as possible. Examples of these measures include the following with all information present in **Table 26-20** within **Chapter 26: Water environment, Volume 2** of the ES (Document Reference: 6.2.26).

- **Avoiding sensitive sites by the project footprint where practical.**
- **Drainage design measures to manage, attenuate and, if necessary, treat surface water run-off will be included in all elements of temporary and permanent infrastructure in accordance with Sustainable Drainage principles.**
- **In line with good practice, Pollution Prevention Plans will be drawn up to detail how ground and surface waters will be protected during construction and operation.**

Likely significant effects

Overview

Based on the proposed location of the onshore substation and routing of the onshore cable corridor, plus the incorporation of appropriate embedded environmental measures, **No Significant Effects** have been identified on the water environment from construction, operation and maintenance, and decommissioning.

Cumulative effects

No Significant Cumulative Effects have been identified in relation to Rampion 2 on the water environment from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for water environment receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified in relation to Rampion 2 on water environment receptors from construction, operation and maintenance, and decommissioning activities.

6.12 Major accidents and disasters

This section summarises the assessment findings for major accidents and disasters, based on **Chapter 27: Major accidents and disasters, Volume 2** of the ES (Document Reference: 6.2.27).

How major accident and disaster effects have been assessed

In the context of EIA for Major Accidents and Disasters (MA&Ds) 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. The term 'disaster' is defined as a natural occurrence that leads to serious damage to receptors again either immediate or delayed.

Major accidents or disasters can lead to the loss of life and injury in large numbers, and/or major and long-term damage to environmental or historic features of high importance.

The assessment has looked at all realistic 'worst case' hazards that may lead to a major accident or disaster. Hazards that could occur during either construction, operation and maintenance or decommissioning of Rampion 2 are considered, so that all potential major accidents or disasters are captured and assessed. The approach is based on established approaches for assessing major accident and disaster risk assessment and associated tolerability. The assessment looks at potential major accidents or disasters that could occur, both as a result of Rampion 2, or that could occur externally but have knock-on effects to Rampion 2.

The assessment is risk-based as major accidents and disasters are infrequent events. Therefore, this assessment takes account of how likely the potential major accident or disaster is to occur, as well as the level of damage or casualty it can cause.

The assessment has identified potential major accident and disaster sources, the human and environmental receptors in vicinity of Rampion 2, and the route or 'pathways' by which a source may affect each of these receptors, to understand which major accidents or disasters hazards are feasible. An assessment has then been made of the likelihood of it occurring, and the damage or injury it could cause, to understand which potential major accidents and disasters are considered to be either 'significant' or 'not significant'.

Baseline environment

The baseline conditions relevant to the major accidents and disasters assessment have largely been informed by other environmental topics' baseline data. For example, information about the location and designations of ecological features is informed by the terrestrial ecology and nature conservation topic.

A desk study has been undertaken to identify potential major accident and disaster sources, this includes information from the Health and Safety Executive (HSE) and Companies House. Consultation has also been undertaken with West Sussex County Council (WSCC), Public Health England (PHE) and the HSE.

Embedded environmental measures

The Rampion 2 design includes a number of embedded environmental measures designed to avoid or minimise potential major accidents or disasters. Examples of these measures include the following with all information present in **Table 27-9** within **Chapter 27: Major accidents and disasters, Volume 2** of the ES (Document Reference: 6.2.27):

- **Safety zones will be sought around offshore infrastructure during construction, maintenance and decommissioning phases.**
- **Developing Emergency Response Plans.**
- **Undertaking a risk assessment of the potential impacts of major accidents and disasters.**
- **Carrying out vehicle maintenance and refuelling of machinery within designated areas where spillages can be easily contained.**
- **Avoiding sensitive sites by the project footprint where practical.**

Likely significant effects

Overview

When the embedded environmental measures to prevent, control and limit the potential for major accidents and disasters during the lifetime of Rampion 2 are taken into account, the likelihood of a major accident and disaster occurring will be low enough that there are **No Significant Effects** arising from major accident and disasters during construction, operation and maintenance, and decommissioning.

Cumulative effects

No Significant Cumulative Effects have been identified at this stage in relation to Rampion 2 on major accidents and disasters from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for major accident and disasters receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified at this stage in relation to Rampion 2 on major accidents and disasters receptors from construction, operation and maintenance, and decommissioning activities.

6.13 Population and human health

This section summarises the assessment findings for water environment, based on **Chapter 28: Population and human health, Volume 2** of the ES (Document Reference: 6.2.28).

How effects on the population and human health environment have been assessed

Baseline data collection has been undertaken to obtain information over the study area. This data collection includes information from the Office for National Statistics, Office for Health Improvement and disparities and the Ministry of housing, communities and local government.

Baseline environment

Current baseline factors were assessed including: demography, physical health, mental health, lifestyle and behavioural risk factors, deprivation and protected characteristics.

Consistent with recent local and national trends, the health of the Study Area population is likely to improve over the lifetime of Rampion 2. This will be the case with or without Rampion 2.

While this is the case, any improvement is challenging to predict with high confidence and unlikely to be substantial. On this basis, it is considered appropriate (and precautionary) to use present-day statistics for the purpose of the population and human health assessment, offering a precautionary approach.

Embedded environmental measures

The Rampion 2 design includes a number of embedded environmental measures designed to reduce the potential for impacts on the Proposed Development due to climate change. Examples of these measures include the following with all information present in **Table 28-13** within **Chapter 28: Population and human health, Volume 2 of the ES** (Document Reference: 6.2.28):

- **RED will identify opportunities and work with local partners operating in the region to develop a local supply chain maximising the ability for employment opportunities during the construction and operation phases.**
- **An outline Code of Construction Practice (COCP) will be adopted to minimise temporary disturbance to residential properties, recreational users and existing land users.**
- **An Outline Public Rights of Way Management Plan (PRoWMP) has been developed in consultation with key stakeholders that sets out the approach to managing the use of PRoWs during construction.**
- **Construction Traffic Management Plans (CTMP) will be developed in consultation with West Sussex County Council for stages of the works. Traffic management measures reduce potential impacts on health and wellbeing associated during the construction phase.**

Likely significant effects

Overview

When the embedded environmental measures to prevent, control and limit the potential for effects on population and human health during the lifetime of Rampion 2 are taken into account, there are **No Significant Effects** in relation to population and human health during construction, operation and maintenance, and decommissioning.

Cumulative effects

No Significant Cumulative Effects have been identified at this stage in relation to Rampion 2 on population and human health from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for population and human health receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified at this stage in relation to Rampion 2 on population and human health receptors from construction, operation and maintenance, and decommissioning activities.

6.14 Climate change

This section summarises the assessment findings for climate change,
based on **Chapter 29: Climate change, Volume 2** of the ES (Document Reference: 6.2.29).

How Climate change effects have been assessed

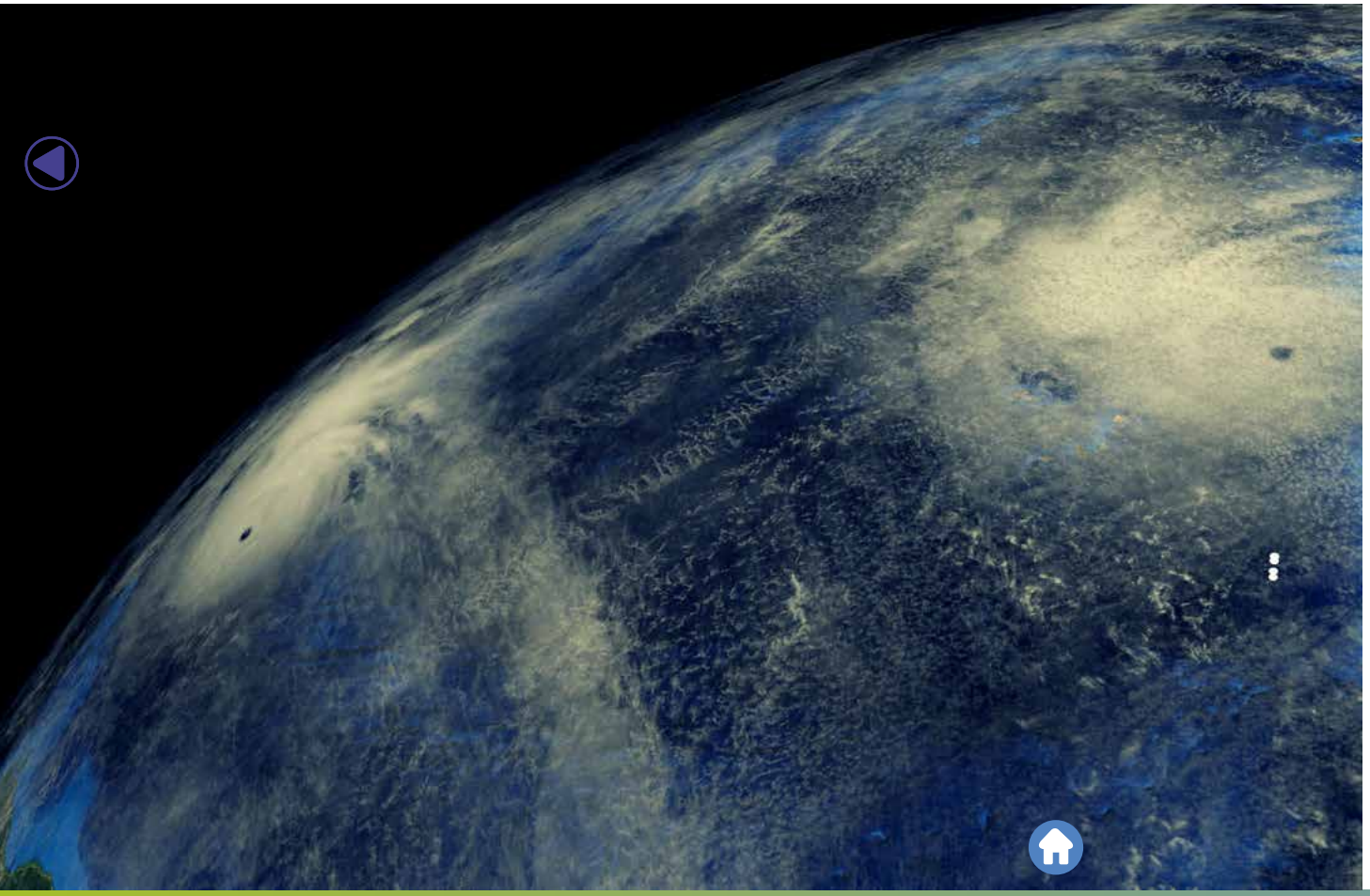
The climate change chapter assesses the likely significant effects of Rampion 2 with respect to greenhouse gases (GHGs) and climate change resilience (CCR).

Assessment of GHG emissions from the construction, operation and maintenance, and decommissioning phases of the Proposed Development has been undertaken and considers the following two scenarios:

- a do-minimum scenario where the Proposed Development is not built; and
- a do-something scenario where the Proposed Development with embedded environmental measures is built.

Through comparison of these two scenarios, the assessment concludes the GHG impact of the Proposed Development will be beneficial. It also concludes that the Proposed Development will 'pay back' the GHG emissions emitted during its lifetime in less than a year (approximately 10 months). After this, it will of course continue to save GHG emissions throughout its lifetime contributing to the decarbonisation of the UK economy and the UK's net zero target.

The CCR assessment methodology is set out into two stages. The first stage is the Climate Vulnerability Assessment which evaluated the vulnerability of the identified receptors to climate change across the Proposed Development's lifetime. The vulnerability of the receptors depends on the sensitivity and exposure of the receptors to climate trends identified within the future baseline. The outcome of the vulnerability assessment identified potential significant effects where there are receptors of 'medium' or 'high' vulnerability to climate impacts to be taken forward to the CCR assessment. Any receptors considered to be of 'low' vulnerability were scoped out and not taken forward for full assessment. The second stage was the Climate Change Risk Assessment (CCRA), used to assess the likelihood and the consequence (magnitude of climate change impacts) to determine the significance of the effect.



Baseline environment

The current onshore baseline is the existing representative climatic conditions with respect to the proposed DCO Order Limits. This is used to provide context of the changes in climate and conditions and their impacts throughout the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

The offshore elements of the Proposed Development, situated in the English Channel, fall in the sub-region of the Greater North Sea. The Greater North Sea is strongly influenced by the inflow of oceanic water from the Atlantic Ocean, wind and tidal events. The English Channel specifically, is influenced by the movements of the Atlantic Ocean to the west and North Sea water to the east., as well as the action of the tide. These elements mean that the English Channel is characterised by a complex current and tidal system, which in the presence of strong winds, can result in rough seas. (ICES, 2018).

Embedded environmental measures

The Rampion 2 design includes a number of embedded environmental measures designed to reduce the potential for impacts on the Proposed Development due to climate change. Examples of these measures include the following with all information present in Table 29-5 (GHG assessment) and **Table 29-23** (CCR assessment) within C**hapter 29: Climate change, Volume 2 of the ES** (Document Reference: 6.2.29):

- **Circular economy principles will be considered and carbon measuring and reporting undertaken.**
- **Deliveries will be consolidated where possible to reduce GHG emissions from construction traffic.**
- **Construction strategies will seek to maximise the reuse of excavated clean materials where practicable and feasible.**
- **Emergency Response Plans for flood events will be prepared for all construction activities.**
- **A high-level risk assessment of severe weather impacts on the construction, operations and decommissioining phases will be used to inform mitigation.**

Likely significant effects

Overview

When the embedded environmental measures to prevent, control and limit the potential for effects on climate change resilience during the lifetime of Rampion 2 are taken into account, there are **No Significant Effects** in relation to climate change impacts on the construction, operation and maintenance, and decommissioning phases of the Proposed Development.

Cumulative effects

No Significant Cumulative Effects have been identified at this stage in relation to Rampion 2 on climate change from construction, operation and maintenance, and decommissioning activities.

Inter-related effects

No Significant Inter-related Effects of greater significance compared to the impacts considered alone were identified for climate change receptors from the construction, operation and maintenance, and decommissioning of Rampion 2 as shown in **Chapter 30: Inter-related effects, Volume 2** of the ES of the ES (Document Reference: 6.2.30).

Transboundary effects

No Significant Transboundary Effects have been identified at this stage in relation to Rampion 2 on climate receptors from construction, operation and maintenance, and decommissioning activities.

7. References

Department for Business, Energy & Industrial Strategy (BEIS), (2021a). *Draft Overarching National Policy Statement for Energy (EN-1).* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf [Accessed 25 July 2023].

Department for Business, Energy & Industrial Strategy (BEIS), (2021b). *Draft National Policy Statement for Renewable Energy Infrastructure (EN-3).* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015236/en-3-draft-for-consultation.pdf [Accessed 25 July 2023].

Department for Business, Energy & Industrial Strategy (BEIS), (2021c). *Draft National Policy Statement for Electricity Networks Infrastructure (EN-5).* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015238/en-5-draft-for-consultation.pdf [Accessed 25 July 2023].

Department for Energy Security & Net Zero (2023a). *Overarching National Policy Statement for energy (EN-1)* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf [Accessed 25 July 2023].

Department for Energy Security & Net Zero (2023b). *National Policy Statement for renewable energy infrastructure (EN-3)* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf [Accessed 25 July 2023].

Department for Energy Security & Net Zero (2023c). *National Policy Statement for electricity networks infrastructure (EN-5)* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147384/NPS_EN-5.pdf [Accessed 25 July 2023].

Department of Energy and Climate Change (DECC), (2011a). *Overarching National Policy Statement for Energy (EN-1).* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf [Accessed 25 July 2023].

Department of Energy and Climate Change (DECC), (2011b). National Policy Statement for Renewable Energy Infrastructure (EN-3). [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47856/1940-nps-renewable-energy-en3.pdf [Accessed 25 July 2023].

Department of Energy and Climate Change (DECC), (2011c). *National Policy Statement for Electricity Networks (EN-5).* [Online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf [Accessed 25 July 2023].

Institute of Environmental Assessment (IEA), (1993). *Guidance Note 1 – Guidelines for the Environmental Assessment of Road Traffic.*

Planning Act 2008, (2008). [Online] Available at: https://www.legislation.gov.uk/ukpga/2008/29/contents [Accessed 25 July 2023].

Planning Inspectorate (2020). *Scoping Opinion: Proposed Rampion 2 Offshore Wind Farm.* [Online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000045-EN010117%20Scoping%20Opinion.pdf [Accessed 25 July 2023].

Rampion Extension Development Limited (RED), (2020). *Rampion Extension Development Limited Rampion 2 Offshore Wind Farm Environmental Impact Assessment Scoping Report.* [Online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000006-EN010117%20-%20Scoping%20Report.pdf [Accessed 25 July 2023].

Rampion Extension Development Limited (RED), (2021). Preliminary Environmental Information Report (PEIR). [Online] Available at: https://rampion2.com/consultations-2021/formal-consultation-detailed-documents/ [Accessed 25 July 2023].

Rampion Extension Development Limited (RED), (2022). Preliminary Environmental Information Report: Supplementary Information Report (PEIR SIR). [Online] Available at: https://rampion2.com/consultation-2022/documents/ [Accessed 25 July 2023].

Rampion Extension Development Limited (RED), (2023a). Preliminary Environmental Information Report: Further Supplementary Information Report (PEIR FSIR) 2023. [Online] Available at: https://rampion2.com/consultation-2023/consultation-2023-documents/ [Accessed 25 July 2023].

Rampion Extension Development Limited (RED), (2023b). Preliminary Environmental Information – Bolney Substation Extension Works (PEI) 2023. [Online] Available at: https://rampion2.com/consultation-proposals-2023-bolney/ [Accessed 25 July 2023].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