

# Rampion 2 Wind Farm

## Category 6: Environmental Statement

### Volume 4, Appendix 15.2: SeasCape, LandsCape and Visual Impact Assessment methodology

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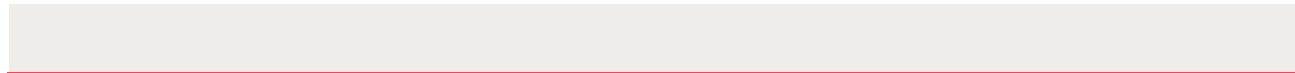


## Document revisions

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# 1. SLVIA methodology

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## 1.1 Introduction

1.1.1 The project-wide approach to the assessment methodology is set out in **Chapter 5: Approach to the EIA, Volume 2**. (Document Reference: 6.2.5). This Appendix describes the methodology used within the seascape, landscape and visual impact assessment (SLVIA) of the Environmental Impact Assessment (EIA) for Rampion 2.

1.1.2 **Chapter 15: Seascape, landscape and visual impact assessment, Volume 2** of the Environmental Statement (ES) (Document Reference: 6.2.15) presents the results of the assessment of the likely significant effects of Rampion 2 with respect to seascape, landscape and visual and focuses on the maximum design scenario defined in **Section 15.7 of Chapter 15 Seascape, landscape and visual impact assessment, Volume 2** (Document Reference: 6.2.15), particularly the proposed wind turbine generators (WTGs) situated within the Rampion 2 array area of the DCO Order Limits, located to the south and west of the existing Rampion Wind Farm (**Figure 15-1, Volume 3** (Document Reference: 6.3.15)). An indicative number of wind turbine generators (WTGs) between 90 (smaller type WTGs) and 65 (larger type WTGs) (generating capacity of up to 1,200MW) are proposed within the Rampion 2 array area, with a maximum WTG height of 325m blade tip (above Lowest Astronomical Tide (LAT)) and 275m rotor diameter. An offshore cable corridor will contain the offshore export cables between the Rampion 2 array area and landfall, where cable laying vessels may potentially be visible during the construction phase.

1.1.3 This SLVIA methodology appendix has been structured as follows:

- overview of SLVIA methodology;
- iterative assessment and design;
- guidance, data sources and site surveys;
- assessing seascape/landscape effects;
- assessing visual effects;
- assessing cumulative seascape, landscape and visual effects;
- evaluation of significance;
- nature of effects; and
- visual representations.

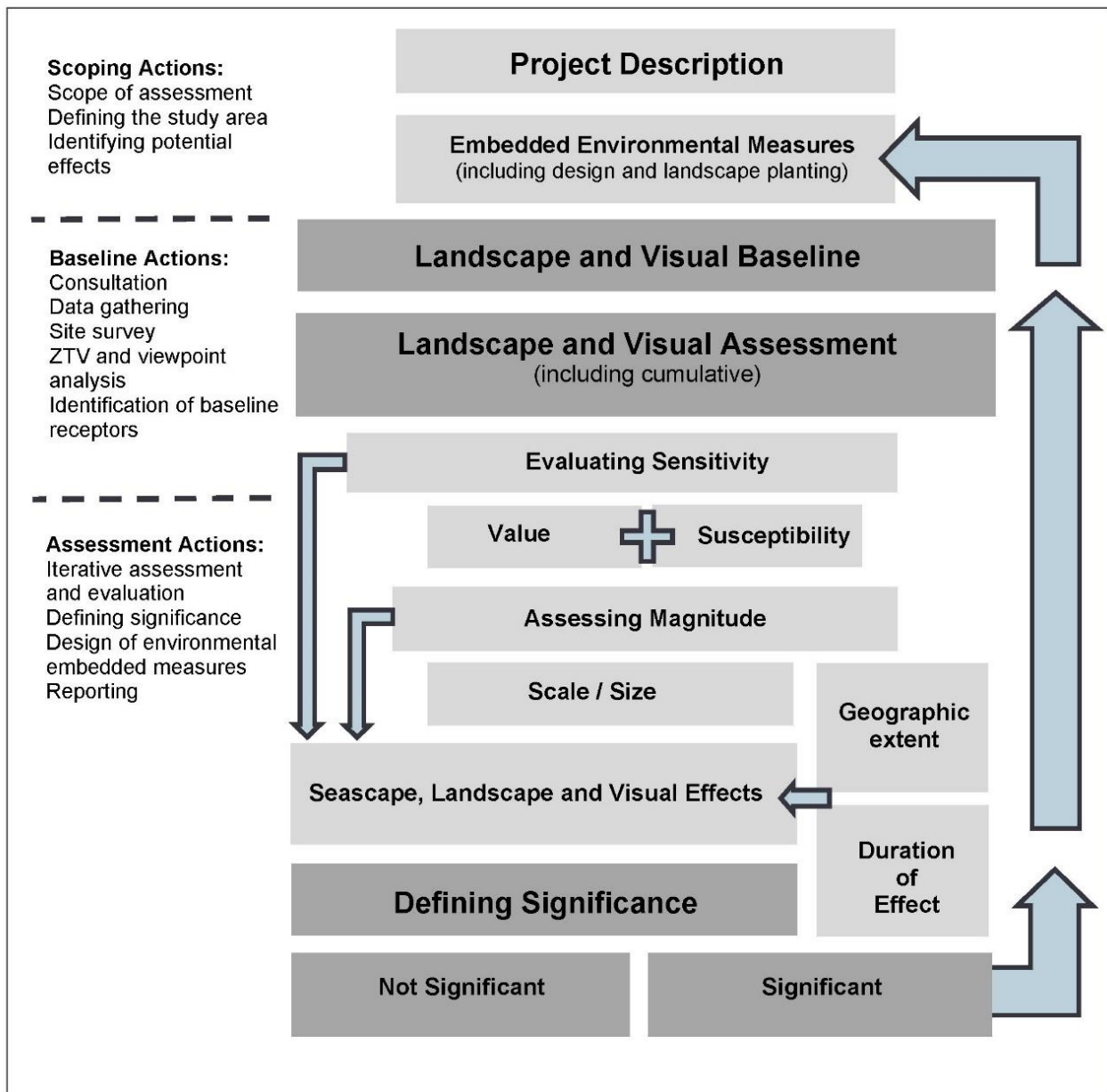
## 1.2 Overview of the SLVIA methodology

1.2.1 The assessment has been undertaken in accordance with the Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3),

and other best practice guidance. An overview or summary of the SLVIA process is provided here and illustrated, diagrammatically in **Graphic 1-1**.

- 1.2.2 The SLVIA assesses the likely effects that the construction and operation of the offshore elements of Rampion 2 on the seascape, landscape and visual resource, encompassing effects on seascape/landscape character, designated landscapes, visual effects and cumulative effects.
- 1.2.3 SLVIA is based on the Rochdale Envelope described in **Chapter 4: The Proposed Development, Volume 2** of the ES (Document Reference: 6.2.4). In compliance with EIA regulations, the likely significant effects of a realistic maximum design scenario (MDS) that is specific to the SLVIA is assessed and illustrated in the SLVIA. This MDS is described in **Chapter 15: Seascape, landscape, and visual impact assessment** of the ES (Document Reference: 6.2.15).
- 1.2.4 The evaluation of sensitivity takes account of the value and susceptibility of the receptor to the offshore elements of Rampion 2 Offshore Wind Farm. This is combined with an assessment of the magnitude of change which takes account of the size and scale of the proposed change. By combining assessments of sensitivity and magnitude of change, a level of seascape, landscape or visual effect can be evaluated and determined. The resulting level of effect is described in terms of whether it is significant or not significant, and the geographical extent, duration and the type of effect is described as either direct or indirect; temporary or permanent (reversible); cumulative; and beneficial, neutral or adverse.

**Graphic 1-1 Overview of approach to Seascape, Landscape and Visual Impact Assessment**



- 1.2.5 The assessment has also considered the whole project or combined effects of the offshore and offshore elements of Rampion 2, as well as the cumulative effects likely to result from the offshore elements of Rampion 2 and other similar proposed developments.
- 1.2.6 In each case an appropriate and proportionate level of assessment has been undertaken and agreed through consultation at the scoping stage. The level of assessment may be 'simple' (requiring desk-based data analysis) or 'detailed' (requiring site surveys and investigations in addition to desk-based analysis).
- 1.2.7 The seascape, landscape and visual assessment unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible a consensus of professional opinion has been sought through consultation, internal

peer review, and the adoption of a systematic, impartial, and professional approach.

## Interface between seascape and landscape assessment

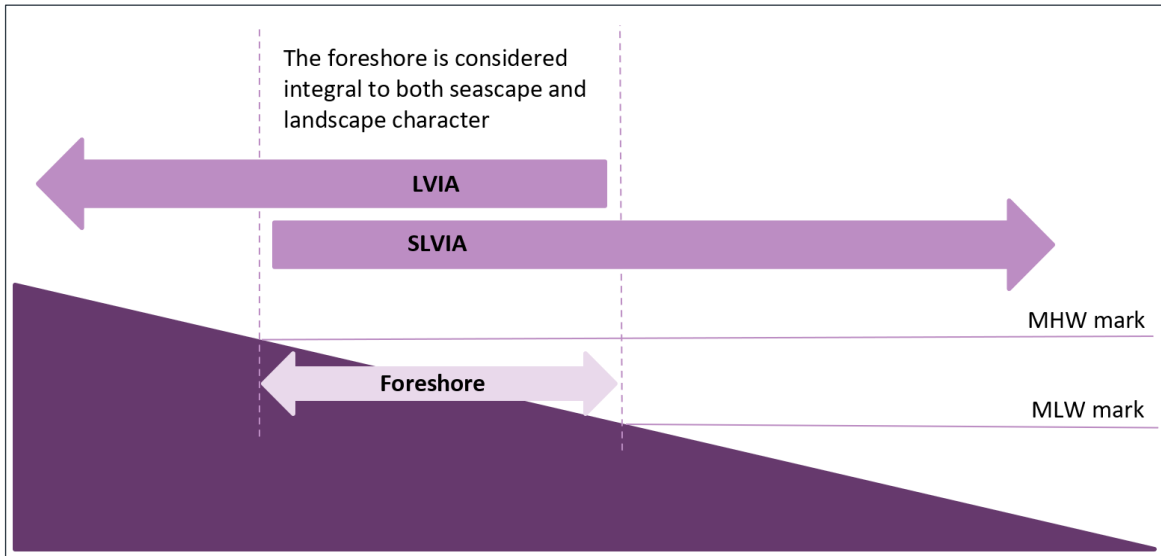
- 1.2.8 Together, the SLVIA and the onshore Landscape and Visual Impact Assessment (LVIA) provide a whole project assessment of the effects of Rampion 2. The offshore elements of Rampion 2 (the wind farm, offshore platforms and offshore export cable corridor) are assessed in the SLVIA and the offshore elements of Rampion 2 (the onshore substation, onshore cable corridor, and landfall location) are assessed in the LVIA. Both the SLVIA and the LVIA follow a broadly similar assessment methodology that uses the same glossary and terminology.
- 1.2.9 The SLVIA also refers to potential interrelated effects likely to result from any areas where the construction, operation and decommissioning of the offshore and onshore elements combine, or inter-relate to affect receptors within the SLVIA study area. An example could include effects on views where both offshore and onshore elements are visible, potentially resulting in whole project landscape and visual effects as a result of the construction, operation and decommissioning of the onshore and offshore elements. In those instances, the SLVIA provides whole project assessment focusing on the offshore development that has been referenced for consistency in the LVIA.

## Assessment of the foreshore

- 1.2.10 The SLVIA seeks to take account for the definition of 'seascape', as set out in the UK Marine Policy Statement (UK Government, 2011) which states that *'...references to seascape should be taken as meaning landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other'*.
- 1.2.11 The majority of the southern half of the SLVIA study area consists of sea. In England, seascape character *'principally applies to coastal and marine areas seaward of the low-water mark'* and landscape character *'principally applies to terrestrial areas lying to the landward side of the high-water mark'* (Natural England, 2012, p7, Box 1). Although these definitions are clear in the guidance, the importance of the interaction of sea, coastline and land as perceived by people is also highlighted in subsequent definitions of seascape in the guidance (Natural England, 2012), indicating a subtler transition between seascape and landscape than defined in the guidance.
- 1.2.12 In order to address this and avoid under-valuing the inter-tidal area between the mean low and high-water mark, the SLVIA assesses 'offshore' seascape effects on Marine Character Areas (MCAs) where they are seaward of the mean high water mark (MWH); and the effect on terrestrial landscape character has been assessed on landscape character areas (LCAs) lying to the landward side of the mean low-water mark (MWL).



**Graphic 1-2 Extent of SLVIA and LVIA assessment of landscape and seascape along the coastline**



- 1.2.13 This approach means that the 'foreshore', which includes beaches, inter-tidal areas and coastlines between MWH and MLW, has been considered in both the landscape and seascape character assessments. This ensures adequate consideration has been given to assessing the relationship between terrestrial and marine areas and interactions across the land/sea interface. This is consistent with the published Marine Management Organisation (MMO) Seascape Assessment (MMO, 2014) which extends to the mean high water mark; and published landscape character assessments.

## Defining the study area

- 1.2.14 The study area for the SLVIA is defined as the DCO Order Limits together with the Zone of Theoretical Visibility (ZTV) of the offshore elements of Rampion 2.
- 1.2.15 The SLVIA study area covers a radius of 50km from the Rampion 2 array area, as illustrated in [Figure 15-3, Volume 3](#) (Document Reference: 6.3.15). Broadly, the SLVIA study area is 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.
- 1.2.16 The SLVIA study area is defined to extend far enough to include all areas within which significant effects could occur, using professional judgement. It is an outer limit to where significant effects could occur.
- 1.2.17 IEMA Guidance (IEMA, 2015 and 2017) recommends a proportionate ES focused on the significant effects and a proportionate ES topic chapter. An overly large SLVIA study area may be considered disproportionate if it makes the understanding of the key impacts of the offshore elements of Rampion 2 more difficult.

- 1.2.18 This is supported by LVIA Guidance produced by the Landscape Institute (GLVIA3) (Landscape Institute, 2013) (para 3.16). This guidance recommends that *'The level of detail provided should be that which is reasonably required to assess the likely significant effects'*.
- 1.2.19 Para 5.2 and p70 also states that *'The study area should include the site itself and the full extent of the wider landscape around it which the proposed development may influence in a significant manner'*.
- 1.2.20 Other wind farm specific guidance, such as NatureScot's Visual Representation of Wind Farms Guidance (NatureScot, 2017) recommends that ZTV distances are used for defining study area based on WTG height. This guidance recommends a 45km radius for WTGs greater than 150m to blade tip (para 48, p12) however, it does not go beyond turbines above 150m in height. The height of current offshore WTG models has now exceeded the heights covered in this guidance. The NatureScot guidance recognises that greater distances may need to be considered for larger WTGs used offshore, as is the case for the SLVIA study area for the offshore elements of Rampion 2.
- 1.2.21 Beyond the DCO Order Limits, the SLVIA generally focuses on locations from where it may be possible to see the offshore elements of Rampion 2, as defined by the Blade Tip ZTV (**Figure 15-14a-b, Volume 3** (Document Reference: 6.3.15)).
- 1.2.22 The ZTV shown in **Figure 15-14a, Volume 3** (and **Figure 15-14b, Volume 3** at A1 scale (Document Reference: 6.3.15)) are based on turbines of 325m to tip (above LAT) located around the perimeter of the Rampion 2 array area, which represents the Maximum Development Scenario (MDS) considered in the SLVIA. The ZTV illustrates where there will be no visibility of these WTGs, as well as areas where there will be lower or higher numbers of WTGs visible.
- 1.2.23 Consideration of the blade tip ZTV (**Figure 15-14a-b, Volume 3** (Document Reference: 6.3.15)) indicates that theoretical visibility of the offshore elements of Rampion 2 mainly occurs within 50 km and that beyond 50 km, the geographic extent of visibility becomes very restricted. At distances over 50 km, the lateral (or horizontal) spread of the offshore elements of Rampion 2 also occupies a small portion of available views and the apparent height (or 'vertical angle') of the WTGs will also appear very small, therefore significant visual effects are unlikely to arise at greater than this distance, even if the WTGs are visible.
- 1.2.24 The influence of earth curvature begins to limit the apparent height and visual influence of the WTGs visible at long distance (such as over 50km), as the lower parts of the turbines will be partially hidden behind the apparent horizon, leaving only the upper parts visible above the skyline.
- 1.2.25 The variation of weather conditions influencing visibility off the English coast has also informed the SLVIA study area. Based on initial review of Met Office visibility data presented in the MMO Seascape Assessment for the South Marine Plan Areas (MMO, 2014) (Figure 16, p26) *'visibility beyond 50km is very unlikely'*. A quantitative description of the existing visibility within the SLVIA study area is provided in **Section 15.6 of Chapter 15: Seascape, landscape and visual impact assessment** of the ES (Document Reference: 6.2.15) using METAR visibility data from the closest Met Office weather station at Thorney Island, to

highlight potential trends in the visibility conditions within the SLVIA study area. This indicates a very low visibility frequency of only 6% of recordings over a 10 year period with visibility beyond 50 km.

- 1.2.26 This is supported by the visibility analysis in the Offshore Energy SEA (White Consultants, March 2020), which considered Met Office visibility data for eight coastal stations. Averaging all coastal stations, the visual range recorded was just under 24km around 50% of the time, just under 30km 33% of the time, around 34km for 20% of the time, and 40km 10% of the time.
- 1.2.27 In considering the SLVIA study area, the sensitivity of the receiving seascape, landscape and visual receptors has also been reviewed, taking particular account of the landscape designations shown in **Figure 15-7, Volume 3 3** (Document Reference: 6.3.15), and other principal visual receptors. It is clear that the principal issues for the SLVIA are the location of the offshore elements of Rampion 2 off the Sussex coast and therefore its exposure to and visibility from settlements along the coast; the South Downs National Park (SDNP) and the Sussex Heritage Coast, which are primarily within 13-30km of the offshore elements of Rampion 2.
- 1.2.28 The study area has been reviewed and amended in response to such matters as refinement of the offshore project components, the identification of additional impact pathways and in response where appropriate to feedback from consultation.

### 1.3 Iterative assessment and design

- 1.3.1 The SLVIA is part of an iterative EIA process which aims to ‘design out’ significant effects via a range of environmental measures including avoidance and design that aims to reduce or eliminate significant effects. Design is an integrated part of the SLVIA process and environmental measures related to landscape design and management can be an important tool to mitigate significant effects. The EIA process can also call on a range of environmental and technical specialists that contribute other forms of mitigation that may also bring a range of benefits. Potentially significant seascape, landscape and visual effects and the constraints and opportunities connected with their resolution are identified through the SLVIA process. Where possible embedded environmental measures (Commitments) are incorporated into the offshore elements of Rampion 2 in order to mitigate seascape, landscape and visual effects.
- 1.3.2 Embedded environmental measures are recorded in the Commitments Register which details how the measures have been secured as well as documenting the design evolution of the offshore elements of Rampion 2.

### Potential effects during construction and decommissioning

- 1.3.3 Potential effects on the seascape, landscape and visual resource are likely during the construction and decommissioning of the offshore elements of Rampion 2 during the construction and decommissioning periods, including:
- Seascape effects:

- ▶ Effects on perceived seascape character, arising as a result of the construction and decommissioning activities (including laying new offshore export cables to shore) and structures located within the Rampion 2 array area, which may alter the seascape character of the Rampion 2 array area itself and the perceived character of the wider seascape through visibility of these changes.
- Landscape effects:
  - ▶ Effects on perceived landscape character, arising as a result of the construction and decommissioning activities and structures, including laying new offshore export cables to shore, which will be visible from the coast and may therefore affect the perceived character of the landscape.
  - ▶ Effects on the special landscape qualities and integrity of designated landscapes as a result of the above construction and decommissioning activities.
- Visual effects:
  - ▶ Effects on views and visual amenity experienced by people from principal visual receptors and representative viewpoints, arising as a result of the construction and decommissioning activities and structures, including activities such as vessels laying new offshore export cables to shore, which may be visible from the coast.
- Whole project effects:
  - ▶ Whole project effects could occur as a result of multiple construction and decommissioning activities related to the onshore and / or the offshore elements of Rampion 2 affecting a seascape, landscape or visual receptor. Effects will be influenced by the construction phasing of the offshore and offshore elements of Rampion 2, the geographic location of receptors and visibility of the onshore and offshore elements.

## Potential effects during operation

- 1.3.4 Potential effects on the seascape, landscape and visual resource are likely during the operation of the offshore elements of Rampion 2 over its operational lifetime, including:
- Seascape effects:
    - ▶ Effects on perceived seascape character (MCAs), arising as a result of the operational WTGs, substations and maintenance activities located within the Rampion 2 array area, which may alter the seascape character of the Rampion 2 array area itself and the perceived character of the wider seascape.
  - Landscape effects:
    - ▶ Effects on perceived landscape character (LCAs and Designations), arising as a result of the operational WTGs, substations and maintenance activities, which will be visible from the coast and may therefore affect the perceived

character of the landscape and may affect the special qualities of designated landscapes.

- Visual effects:
  - ▶ Effects on views and visual amenity experienced by people as principal visual receptors and representative viewpoints, arising as a result of the operational WTGs, substations and maintenance activities, marine navigation and aviation lighting.
- Cumulative effects:
  - ▶ Effects of operation of the offshore elements of Rampion 2 that have the potential to contribute to cumulative seascape, landscape and visual effects including effects on seascape, landscape and visual amenity due to inter-visibility with other planned developments.

## 1.4 Guidance, data sources and site surveys

### Guidance on methodology

1.4.1 This methodology accords with Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3). Where it diverges from specific aspects of the guidance, in a small number of areas, reasoned professional justification for this is provided as follows.

- GLVIA3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. This approach is to be applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying significant effects of wind farm development. For example, a high magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect could be overlooked if effects are diluted down due to their limited geographical extents and/ or duration or reversibility.
- The consideration of the size or scale of the effect, its geographical extent and its duration and reversibility are kept separate, by basing the magnitude of change primarily on size or scale to determine where significant and non-significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (i.e. as short/medium/long-term and temporary/permanent) and are considered as part of drawing together conclusions about significance and combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.
- OPEN's assessment methodology utilises six word scales of magnitude of change – high, medium-high, medium, medium-low, low and negligible; which

are preferred to the ‘maximum of five categories’ suggested in GLVIA3 (3.27), as a means of clearly defining and summarising magnitude of change judgements.

- 1.4.2 These are not new diversions and follow practice established on other Nationally Significant Infrastructure Projects (NSIP) such as East Anglia TWO, East Anglia THREE, Norfolk Vanguard and Thanet Extension.
- 1.4.3 A full list of references, providing guidance on methodology and a glossary is provided in **Section 1.11**.
- 1.4.4 Whilst many of these guidance documents have been prepared by NatureScot for projects in Scotland, in the absence of alternative guidelines they have become best practice across the UK. The preparation of visual representations that accord with this NatureScot guidance has been agreed with consultees.

## Data sources

- 1.4.5 A list of the data sources used for this assessment is provided in **Table 1-1**.

**Table 1-1 Key sources of seascape, landscape and visual data**

Source	Date	Summary	Coverage of Study Area
<b>Campaign to Protect Rural England (CPRE)</b>	2016	Interactive maps of the UK’s light pollution and dark skies as part of a national mapping project (LUC/CPRE, 2016). Open Source data used to understand and illustrate baseline lighting levels. (available online: <a href="https://www.nightblight.cpre.org.uk/">https://www.nightblight.cpre.org.uk/</a> )	Full coverage of the study area.
<b>East Sussex County Council</b>	2016	Landscape Character Areas (LCAs) (East Sussex). East Sussex Landscape Character Assessment (2016) (available online: <a href="https://www.eastsussex.gov.uk/environment/landscape/">https://www.eastsussex.gov.uk/environment/landscape/</a> ) Local Development Plans covering Eastbourne, Hastings Borough and Lewes, Rother and Wealdon Districts.	East Sussex
<b>English Heritage</b>	2020	Any specific visitor attractions / tourist destinations (available online: <a href="https://www.english-heritage.org.uk/visit/places/#?page=1&amp;place=&amp;mp=false&amp;fe=false">https://www.english-heritage.org.uk/visit/places/#?page=1&amp;place=&amp;mp=false&amp;fe=false</a> )	Full coverage of the study area
<b>E-ON UK (Rampion Wind)</b>	2012	Rampion Wind Farm Environmental Statement (ES). Chapter 15 Seascape, Landscape and Visual Impact Assessment.	Partial coverage of

Source	Date	Summary	Coverage of Study Area
<b>Farm Ltd)/RSK Environmental</b>			the study area
<b>Google Earth Pro</b>	2020	Aerial photography	Full coverage of the study area
<b>Hampshire County Council</b>	2010	Landscape Character Areas (LCAs) (Hampshire). Hampshire Integrated Landscape Assessment (Available online: <a href="https://www.hants.gov.uk/landplanningandenvironment/environment/">https://www.hants.gov.uk/landplanningandenvironment/environment/</a> )	Hampshire
<b>Historic England</b>	2020	Registered Parks and Gardens and UNESCO World Heritage Sites (available online: <a href="https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/">https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/</a> )	Full coverage of the study area
<b>Isle of Wight Council</b>	2015	Landscape Character Areas (LCAs) (East Isle of Wight). East Wight Landscape Character Assessment (available online: <a href="https://www.iow.gov.uk/azservices/documents/2782-EWLCA-Final-Version-May-2015-Web-version.pdf">https://www.iow.gov.uk/azservices/documents/2782-EWLCA-Final-Version-May-2015-Web-version.pdf</a> )	Isle of Wight
<b>Long Distance Walkers Association</b>	2020	Overview map for Long Distance Paths and Walks (available online: <a href="https://www.ldwa.org.uk/ldp/public/ldp_overview_map.php">https://www.ldwa.org.uk/ldp/public/ldp_overview_map.php</a> )	Full coverage of the study area
<b>Met Office</b>	2009-2019	Visibility Data. Visibility bands every 1km up to 30km, then every 5km up to 50km, then every 10km up to 70km, and >70km	Weather station at Thorney Island.
<b>MMO</b>	2014	Marine Character Areas. Marine Management Organisation (MMO), June 2014 Seascape assessment for the South Marine Plan Areas: Technical Report (MMO 1037). Available online: <a href="https://www.gov.uk/government/publications/the-south-marine-plans-documents">https://www.gov.uk/government/publications/the-south-marine-plans-documents</a> )	South Inshore and Offshore Marine Plan Areas
<b>National Trust</b>	2020	Any specific visitor attractions / tourist destinations (available online: <a href="https://www.nationaltrust.org.uk/days-out">https://www.nationaltrust.org.uk/days-out</a> )	Full coverage of

Source	Date	Summary	Coverage of Study Area
			the study area
<b>Natural England</b>	2018	National Character Areas (NCAs) (available online: <a href="https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-south-east-england-and-london">https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles#ncas-in-south-east-england-and-london</a> )	Full coverage of the study area
<b>Natural England</b>	2019	GIS datasets for: National Parks ( <a href="https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england">https://data.gov.uk/dataset/334e1b27-e193-4ef5-b14e-696b58bb7e95/national-parks-england</a> ). Areas of Outstanding Natural Beauty (AONB) ( <a href="https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england">https://data.gov.uk/dataset/8e3ae3b9-a827-47f1-b025-f08527a4e84e/areas-of-outstanding-natural-beauty-england</a> ) County Parks ( <a href="https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england">https://data.gov.uk/dataset/e729abb9-aa6c-42c5-baec-b6673e2b3a62/country-parks-england</a> ). Open Access Land ( <a href="https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer">https://data.gov.uk/dataset/05fa192a-06ba-4b2b-b98c-5b6bec5ff638/crow-act-2000-access-layer</a> ). Heritage Coasts ( <a href="https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts">https://data.gov.uk/dataset/79b3515f-b00e-419a-9c7e-1d3163555886/heritage-coasts</a> )	Full coverage of the study area
<b>Oceanwise</b>		Marine and coastal mapping data, ferry routes.	Coverage of seascape sections of the study area
<b>OPEN internal dataset</b>	2020	Public Rights of Way	Full coverage of the study area
<b>Ordnance Survey</b>	2019	1:50,000 scale mapping	Full coverage of



Source	Date	Summary	Coverage of Study Area
			the study area
<b>Ordnance Survey</b>	2019	1:25,000 scale mapping	Coverage of coastal sections of the study area
<b>Ordnance Survey Open Data</b>	2019	OS County Region, Local Unitary Authority, Railways, Road and Settlements	Full coverage of the study area
<b>Ordnance Survey</b>	2019	OS Terrain 50 Digital Terrain Model (DTM)	Full coverage of the study area
<b>Ordnance Survey</b>	2019	OS Terrain 5 Digital Terrain Model (DTM)	Coverage of coastal sections of the study area
<b>Royal Yachting Association (RYA)</b>	2013	Cruising routes for recreational yachting	Coverage of seascape sections of the study area
<b>SDNP Authority</b>	2020	Landscape Character Areas (SDNP). South Downs Integrated Landscape Character Assessment (2020) (available online: <a href="https://www.southdowns.gov.uk/landscape-design-conservation/south-downs-landscape-character-assessment/south-downs-landscape-character-assessment-2020/">https://www.southdowns.gov.uk/landscape-design-conservation/south-downs-landscape-character-assessment/south-downs-landscape-character-assessment-2020/</a> )	SDNP
<b>SDNP Authority</b>	2018	South Downs National Park, Dark Skies Technical Advice Note (April 2018) including Sky Quality Map and Dark Sky Zones.	SDNP
<b>SDNP Authority</b>	2021	South Downs National Park Offshore Wind Farms Buffer Study (April, 2021).	SDNP

Source	Date	Summary	Coverage of Study Area
<b>Surrey County Council</b>	2015	Landscape Character Areas (LCAs) (Surrey). Surrey Landscape Character Assessment (2015). (Available online: <a href="https://www.surreycc.gov.uk/land-planning-and-development/countryside/strategies-action-plans-and-guidance/landscape-character-assessment">https://www.surreycc.gov.uk/land-planning-and-development/countryside/strategies-action-plans-and-guidance/landscape-character-assessment</a> )	Surrey
<b>Sustrans</b>	2020	National Cycle Network (GIS dataset) (available online: <a href="https://www.sustrans.org.uk/">https://www.sustrans.org.uk/</a> )	Full coverage of the study area
<b>West Sussex County Council</b>	2003	Landscape character assessment of West Sussex (available online: <a href="https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/landscape-character-assessment-of-west-sussex">https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/landscape-character-assessment-of-west-sussex</a> / <a href="https://historicengland.org.uk/listing/the-list/">https://historicengland.org.uk/listing/the-list/</a> ).	West Sussex
<b>West Sussex County Council</b>	2019	Local distinctiveness study of West Sussex (available online: <a href="https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/local-distinctiveness-study-of-west-sussex/">https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/local-distinctiveness-study-of-west-sussex/</a> )	West Sussex
<b>West Sussex County Council</b>	2020	Public Rights of Way iMap (available online: <a href="https://www.westsussex.gov.uk/land-waste-and-housing/public-paths-and-the-countryside/public-rights-of-way/public-rights-of-way-imap/">https://www.westsussex.gov.uk/land-waste-and-housing/public-paths-and-the-countryside/public-rights-of-way/public-rights-of-way-imap/</a> ).	West Sussex

## Appropriate level of assessment

- 1.4.6 The assessment of whether an effect has the potential to be of likely significance has been based upon review of existing evidence base, consideration of commitments made (embedded measures), professional judgement and where relevant, recommended aspect specific methodologies and established practice. In applying this judgement, use has been made of a simple test that to be significant an effect must be of sufficient importance that it should be taken into consideration when making a development control decision.

- 1.4.7 The Scoping Report (Rampion Extension Development Limited (RED), 2020) presented a scoping assessment of the likely seascape, landscape and visual effects scoped in and scoped out of the SLVIA (Table 5.13.5). The Scoping Opinion (Planning Inspectorate, 2020) provided the opinion of Secretary of State (SoS) as to the scope, and level of detail, of the information to be provided in the Environmental Statement. The Scoping Opinion is summarised in **Appendix 15.1: SLVIA consultation responses, Volume 4** of the ES (Document Reference: 6.4.15). The effects of Rampion 2 on certain seascape, landscape and visual receptors were agreed as scoped out of the SLVIA in agreement with the Planning Inspectorate and are not assessed any further in the Preliminary Environmental Information Report (PEIR) (RED, 2021).
- 1.4.8 For those matters 'scoped in' for assessment, the approach to level of assessment is tiered. A 'simple' or 'detailed' assessment is undertaken as follows:
- a 'simple assessment' approach for an environmental aspect / effect which may include secondary baseline data collection (for example desk-based information) and qualitative assessment methodologies. A simple assessment of all seascape, landscape and visual receptors is undertaken within **Appendix 15.3: Simple Seascape, Landscape and Visual Impact Assessment (SLVIA), Volume 4** (Document Reference: 6.4.15.3) of the PEIR, using desk-based information and ZTV analysis (**Figure 15-18 to Figure 15-21, Volume 3** (Document Reference: 6.3.15)). The simple assessment identifies which seascape, landscape and visual receptors are unlikely to be significantly affected, which are subject to a simple assessment, and those receptors that are more likely to be significantly affected by the offshore elements of Rampion 2, which require a 'detailed assessment'.
  - a 'detailed assessment' approach is undertaken for seascape, landscape and visual receptors/effects that are identified in the simple assessment in **Appendix 15.3: Simple Seascape, Landscape and Visual Impact Assessment (SLVIA), Volume 4** (Document Reference: 6.4.15.3) as requiring detailed assessment. This detailed assessment may include primary baseline data collection (for example through site surveys), quantitative and qualitative assessment methodologies, and modelling such as ZTV analysis (**Figures 15-18 to Figure 15-21, Volume 3** (Document Reference 6.3.15)) and wireline/photomontage visualisations (**Figures 15-26 to Figure 15-65, Volume 3** (Document Reference 6.3.15)).
- 1.4.9 To ensure the provision of a proportionate EIA and an ES that is focused on likely significant effects, the PEIR assessment takes into account the considerable levels of existing environmental information available and extensive local geographical knowledge and understanding of the site and surroundings gained from ongoing site selection analysis, environmental surveys and the existing Rampion 1 project.

## Desk-based and site survey work

- 1.4.10 The SLVIA undertaken as part of the PEIR and ES has been informed by desk-based studies and field survey work undertaken within the SLVIA study area. The landscape, seascape and visual baseline has been derived from a desk-based review of landscape and seascape character assessments and the ZTV, to identify

receptors that may be affected by the offshore elements of Rampion 2 and produce written descriptions of their key characteristics and value.

- 1.4.11 Interactions identified between the offshore elements of Rampion 2 and seascape, landscape and visual receptors have been used to predict potentially significant effects arising, with measures proposed to mitigate effects, where relevant.
- 1.4.12 For those receptors where a detailed assessment has been required, primary data acquisition has been undertaken through a series of surveys. These surveys include field survey verification of the ZTV from terrestrial landscape character areas (LCAs), micro-siting of viewpoint locations, panoramic baseline photography and visual assessment survey from all representative viewpoints. The viewpoint photography and visual assessment surveys were undertaken during August, September and November 2020, and in August 2021. Sea-based offshore surveys have not been undertaken as part of the SLVIA.

## 1.5 Assessing seascape/landscape effects

- 1.5.1 Landscape Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 5.1 and 5.2 as follows:

*“An assessment of landscape effects deals with the effects of change and development on landscape as a resource. The concern ... 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.”*

- 1.5.2 In accordance with GLVIA 3 the term ‘landscape’ encompasses areas of ‘townscape’ and coastal areas of ‘seascape’. Areas of landscape and seascape are relevant to this assessment and they are described as follows.

### Landscape character

- 1.5.3 GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:
- *“the elements that make up the landscape in the study area including:*
    - ▶ *physical influences – geology, soils, landform, drainage and water bodies;*
    - ▶ *landcover, including different types of vegetation and patterns and types of tree cover; and*
    - ▶ *the influence of human activity, including landuse and management, the character of settlements and buildings, and pattern and type of fields and enclosure.*
  - *The aesthetic and perceptual aspects of the landscape – such as, for example, its scale, complexity, openness, tranquillity or wildness;*
  - *The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that*

*make each distinctive, usually by identification as key characteristics of the landscape.”*

## Seascape character

- 1.5.4 GLVIA 3 paragraph 5.6, advises that where LVIA is carried out in coastal or marine locations baseline studies must take account of seascape. Seascape is defined in the UK Marine Policy Statement, (UK Government, 2011) as *“landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.”*
- 1.5.5 GLVIA 3 paragraph 5.6, identifies the following different factors which together determine seascape character:
- *“coastal features;*
  - *views to and from the sea;*
  - *particular qualities of the open sea;*
  - *the importance of dynamic changes due to weather and tides;*
  - *changes in seascapes due to coastal processes;*
  - *cultural associations; and*
  - *contributions of coastal features to orientation and navigation at sea.”*

## Seascape/landscape effects

- 1.5.6 In respect of the offshore elements of Rampion 2, the potential seascape/landscape effects, occurring during the construction, operation and decommissioning periods of the offshore elements of Rampion 2 may therefore include, but are not restricted to the following:
- changes to seascape/landscape character and qualities: seascape/landscape character may be affected through the incremental effect on characteristic elements, landscape patterns and qualities (including perceptual characteristics) and the addition of new features, the magnitude of which is sufficient to alter the overall seascape/landscape character within a particular area;
  - changes to the perceived character of designated landscapes, including the South Downs National Park (SDNP) and High Weald Area of Outstanding Natural Beauty (AONB) that will affect the special landscape qualities underpinning the designation and its integrity; and
  - cumulative seascape/landscape effects: where more than one development of a similar type may lead to a cumulative effect.
- 1.5.7 Development may have a direct effect on the seascape, however all landscape effects arising from the offshore elements of Rampion 2 on landscape character will be indirect effects, which will be perceived from the wider landscape, outside the DCO Order Limits and its seascape/landscape.

## Evaluating seascape/landscape sensitivity to change

- 1.5.8 The assessment of sensitivity takes account of the seascape/landscape value and the susceptibility of the receptor to the offshore elements of Rampion 2.
- 1.5.9 Seascape/landscape sensitivity often varies in response to both the type and phase of the development proposed and its location, such that sensitivity needs to be considered on a case by case basis. It should not be confused with 'inherent sensitivity' where areas of the landscape may be referred to as inherently of 'high' or 'low' sensitivity. For example, a National Park may be described as inherently of high sensitivity on account of its designation and value, although it may prove to be less susceptible (and therefore sensitive) to a particular development. The susceptibility of seascape/landscape receptors has been assessed in relation to change arising from the specific development proposed, including the specific offshore elements of Rampion 2.

## Sensitivity of seascape/landscape receptor

### Overview

- 1.5.10 The sensitivity of a seascape/landscape character receptor is an expression of the combination of the judgements made about the susceptibility of the receptor to the specific type of change or the development proposed and the value related to that receptor.

### Value of the seascape/landscape receptor

- 1.5.11 The value of a seascape/landscape character receptor is a reflection of the value that society attaches to that seascape/landscape. The assessment of the seascape/landscape value has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following range of factors. Indicators of higher and lower value are described further in **Table 1-2**.
- **Seascape/landscape designations** - A receptor that lies within the boundary of a recognised landscape related planning designation, or within its setting, will be of increased value, depending on the level of importance of the designation which may be international, national, regional or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment; however, the absence of a landscape designation and location outside the setting of a designation, may be an indicator of lower value.
  - **Seascape/landscape quality** - The quality of a seascape/landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A seascape/landscape with high scenic quality that contributes to special qualities, with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character, has low scenic qualities and does not contribute to special qualities.

- **Seascape/landscape experience** - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including the perceptual responses it evokes (for example wildness, remoteness, tranquillity), the cultural associations that may exist in literature or history, or the iconic status of the seascape/landscape in its own right, the recreational value of the seascape/landscape, and the contribution of other values relating to the nature conservation or archaeology of the area.

## Seascape/landscape susceptibility to change

- 1.5.12 The susceptibility of a seascape/landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the offshore elements of Rampion 2 (i.e. change relating to the specific development proposal) without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies. Some landscape/seascape receptors are better able to accommodate development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or may not also be special landscape qualities that underpin designated landscapes.
- 1.5.13 The assessment of the susceptibility of the seascape/landscape receptor to change has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. Indicators of landscape/seascape susceptibility to the type of development proposed (construction, operation and decommissioning of the offshore elements of Rampion 2) are based on the following criteria. Indicators of higher and lower susceptibility are described further in **Table 1-2**.
- **Natural** – form/topography/character of hinterland (relevant landscape character type), coastal edge (cliffs, rocky coasts, upper beach, dunes, intertidal etc) and tidal range.
  - **Cultural/social** – use of the sea (navigation, fishing, leisure, energy etc), coast and hinterland (settlement, industry, marine related development such as harbours, ports, industry, agriculture etc) and historic features on the coast (forts, castles, lighthouses etc).
  - **Quality/condition** – intactness (degree of completeness or fragmentation visually, presence of detractors) and state of repair (condition of natural and built features/elements).
  - **Aesthetic and perceptual** – scale of sea (in relation to coastal form or offshore areas); openness/enclosure (the degree and nature of enclosure of the sea by land and framing of views); exposure (degree of shelter/exposure); aspect (relationship with the sun); seascape pattern and foci (features and element on sea surface, coast and hinterland); tranquillity (movement, man-made structures, dark skies); wildness (sense of natural character uninfluenced by man); and remoteness (perceived distance from population and human interventions).
  - **Visual characteristics** – key views from land to sea, sea to land and sea to sea, including nature of views and elevation, presence of iconic features; intervisibility of area with important receptors (amount, length, extent, nature of

intervisibility and distance from development); and how seascape is experienced.

- **Relationship between seascape area and adjacent coast** – contribution of seascape to the setting of an important coast/hinterland or character area; and key relationships between hinterland, coastal edge, intertidal area and sea.

### Seascape/landscape sensitivity rating

- 1.5.14 An overall sensitivity assessment of the seascape/landscape receptor has been made by combining the assessment of the value of the seascape/landscape character receptor and its susceptibility to change. The evaluation of seascape/landscape sensitivity has been applied for each seascape/landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change. The basis for the assessments has been made clear using evidence and professional judgement in the evaluation of sensitivity for each receptor, informed by criteria that tend towards higher or lower sensitivity are set out in **Table 1-2** below.
- 1.5.15 When combining assessments of value and susceptibility to establish sensitivity, the assessment considers the criteria in **Table 1-2** holistically to establish an overall judgement of the sensitivity of seascape/landscape receptors to the type of change arising from the specific proposal. In some circumstances, the value of a seascape/landscape receptor may be given greater weight in the overall sensitivity judgement, however the sensitivity judgements in the SLVIA tend to be weighted more towards susceptibility to change, because this provides for an assessment of the sensitivity of receptors to changes arising from *the ‘specific nature of the proposed development’* (Landscape Institute, 2013, para 546), and therefore a highly valued landscape/seascape *‘does not automatically, or by definition, have high susceptibility’* (and therefore sensitivity) to a particular development, despite its high value established in the baseline.

**Table 1-2 Seascape/landscape sensitivity to change**

Value	Higher	Lower
	<p><b>Designation:</b> Presence of designated seascape/landscapes with national policy level protection or defined for their natural beauty. Perceived as lying within seascape setting of a designation.</p>	<p>Seascape/landscapes without formal designation. Despoiled or degraded seascape/landscape with little or no evidence of being valued by the community. Not within seascape setting of a landscape designation.</p>
	<p><b>Aesthetic/scenic qualities:</b> Higher quality seascape/landscapes with consistent, intact and well-defined, distinctive attributes. A seascape/landscape with high</p>	<p>Lower quality seascape/landscapes with indistinct elements or features that detract from its inherent attributes. A seascape/landscape with low scenic qualities that does not</p>



Value	Higher	Lower
	scenic quality that contributes to special qualities. Aesthetic / scenic or perceptual aspects of designated wildlife, ecological or cultural heritage features that contribute to seascape/landscape character.	contribute to special qualities. Limited wildlife, ecological or cultural heritage features, or limited contribution to seascape/landscape character.
	<p><b>Perceptual qualities:</b> Seascape/landscape with perceptual qualities with high level of perceived wildness, high level of remoteness or high tranquillity.</p> <p><b>Cultural associations:</b> Seascape/landscape with strong/rich cultural associations that contributes to scenic quality. Presence of heritage designations overlooking or within area of potential development.</p> <p><b>Recreational and community value:</b> Area used extensively for leisure especially related to enjoying seascape character and views. Highly valued area and features/elements by people, communities of interest and place.</p> <p><b>Rarity:</b> Rare or unique seascape/landscape character types, features or elements.</p>	<p>Seascape/landscape with no apparent wildness, low levels of perceived remoteness or low tranquillity, often as a result of existing development influences.</p> <p>Seascape/landscape with few/limited cultural associations. Absence of heritage designations overlooking or within area of potential development.</p> <p>Area with limited use for leisure, or where leisure relates mainly to pursuing that activity and not the enjoyment of seascape character or views, or where leisure is dynamic/at speed. Area or features with attributed limited value by people.</p> <p>Widespread or 'common' seascape/landscape character types, features or elements.</p>
Susceptibility to change	Higher	Lower
	<p><b>Natural:</b></p> <p><b>Hinterland:</b> Mountainous or hilly hinterland i.e. long slopes rising from coast, high elevation.</p> <p><b>Coastal edge:</b> Intricate, complex, rugged forms and dramatic headlands/ends of peninsulas.</p>	<p>Plateau or flat hinterland. Highly enclosed by topography or land cover.</p> <p>Flat, horizontal or gently undulating or largely straight coast. Simple forms. Man-made interventions/ structures in area.</p>

Value	Higher	Lower
	<p><b>Tidal range:</b> Where tidal range or streams add to the seascape qualities.</p>	<p>The tidal range or streams make a limited contribution to seascape qualities.</p>
	<p><b>Cultural/social:</b></p>	
	<p><b>Use of the sea:</b> Uses with limited infrastructure. Rural uses or semi-natural land. Small scale, traditional, historic settlements and harbours. Little association with other contemporary development.</p>	<p>Presence of energy production and large shipping vessels/trade routes nearby (not through area). Strong or direct association with other similar contemporary developments.</p>
	<p><b>Use of the coast/hinterland:</b> Uses with limited infrastructure. Rural uses or semi-natural land. Small scale, traditional, historic settlements and harbours. Little association with other contemporary development.</p>	<p>Presence of industry/energy production/dock infrastructure. Urban form. Strong or direct association with other similar contemporary developments.</p>
	<p><b>Historic features on coast:</b> Presence of coastal and island historic features such as forts, castles, chapels, monasteries, other buildings and structures and other heritage features which have a strong relationship with the coast and sea visually, physically or culturally.</p>	<p>Limited number or no heritage features</p>
	<p><b>Quality/condition:</b></p>	
	<p><b>Intactness:</b> Intact and consistent character of seascape. Few or no detractors. Fragile seascape/landscape lacking ability to accommodate change.</p>	<p>Seascape character fragmented. Presence of detractors. Robust landscape capable of accommodating change.</p>
	<p><b>State of repair:</b> Well maintained seascape or landscape character at coast.</p>	<p>Poorly maintained seascape or landscape character at coast. Presence of dereliction/neglect.</p>
	<p><b>Aesthetic and perceptual:</b></p>	

Value	Higher	Lower
	<p><b>Scale:</b> Small scale, enclosed, views to horizon limited by landform. Introduction of an element of scale into previously un-scaled area.</p>	<p>A seascape of large scale, with simple, broad and homogenous coastal landforms. Large scale views.</p>
	<p><b>Openness and enclosure:</b> Openness may increase susceptibility if there is wide visibility, however open seascape/landscape may also be larger scale and simple which would decrease susceptibility. Where openness is a key characteristic and introduction of built elements may compromise this.</p>	<p>Enclosed seascape/landscape can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility. Unframed open views unimpeded by natural elements or features.</p>
	<p><b>Exposure:</b> Sheltered and calm seascapes. Where seascape is extremely exposed such that the perceived wild, elemental nature is a key characteristic</p>	<p>Open, exposed seascapes which does not provide a perception of elemental or wild seascape character.</p>
	<p><b>Aspect:</b> Development would interfere with notable views of sunrises and particularly sunsets. Development seen from higher level views, where viewer elevation results in geometric layout pattern perceived as closer than on the horizon line.</p>	<p>Development located away from sunrise and sunset positions. Development seen from lower level views, where viewer elevation results in skyline development, on or over the horizon line.</p>
	<p><b>Seascape pattern and foci:</b> Complex or unified pattern which would be disrupted by development. Important focal points e.g. islands, islets, headlands, distinctive sweeping beaches, and high hills. Open unspoilt views of the sea with no signs of development offshore.</p>	<p>Presence of existing vertical or other elements at sea including shipping/ferries and offshore wind turbines. Lack of intact pattern. Lack of natural or historic feature focal points.</p>
	<p><b>Tranquillity:</b> Where stillness is a key feature, or where/when movement is highly natural, irregular or dramatic. Very limited</p>	<p>Busier areas where development movement relates to other forms of mechanical movement present e.g. commercial shipping, ferries,</p>

Value	Higher	Lower
	<p>or no industrial/semi-industrial structures. Where the area is unlit at night and is classified as such in a dark skies study.</p>	<p>boats, vehicles, wind turbines. Presence of industrial/semi-industrial structures especially at sea, or on coast. Coast is already well lit at night. Lights at sea and land.</p>
	<p><b>Wildness:</b> Undeveloped seascape Wild character Highly natural, semi-natural, unmanaged.</p>	<p>Highly developed seascape. Highly modified/managed.</p>
	<p><b>Remoteness:</b> Remote or isolated. Receptor perceived to be at distance from centres of population and human interventions.</p>	<p>Not remote. Receptor perceived to be close to centres of population and human interventions.</p>
	<p><b>Visual characteristics:</b></p>	
	<p><b>Key views (land to sea, sea to land, sea to sea):</b> Open or framed views from key viewpoints. Views to key features e.g. islands, other coasts, headlands. Views from well used sea area for leisure focussed on seascape/scenic quality. Distinctive undeveloped skylines with landmark features.</p>	<p>Few or no views from key viewpoints. Sea not used for leisure sailing. Developed, non-distinctive skylines without landmark features.</p>
	<p><b>Intervisibility and associations of the development area with receptors:</b> Strong intervisibility with coast in terms of length and/or area and/or relatively close to. Adjacent seascape/landscape character context connected by associated character and views.</p>	<p>Poor intervisibility with coast in terms of length and/or area and/or relatively far away. Host landscape character is separate from surrounding/adjacent seascape/landscape character with weak association.</p>
	<p><b>Typical receptors – type and number:</b> Coast path and users of paths and access land. Visitors to heritage features. Promenade and pier users. Leisure sailors.</p>	<p>Users of ferries. Shipping. People in urban areas at work. Users of roads (unless corniche). Users of railways.</p>
	<p><b>How seascape is experienced:</b> From remote or little used stretch of sea with little shipping or boat</p>	<p>From ferry/shipping. From main coastal, busy roads. Crowded beaches where focus is on beach</p>

Value	Higher	Lower
	use. From secluded coastline, intimate coastal roads and footpaths. From important viewpoints and elevated positions where the focus is the view and not the activity.	activities (rather than enjoyment of seascape character).
<b>Relationship between seascape area and adjacent coast:</b>		
	<b>Contribution to setting:</b> Is perceived from, and forms the setting of, a sensitive coast or seascape character area within the limits of visual perception.	Is perceived from a less sensitive coast or seascape character area. Is beyond the limits of visual perception.
<b>Sensitivity to change</b>	<b>High</b> ←————→ <b>Medium</b>	<b>Medium</b> ←————→ <b>Low</b>

## Seascape/landscape magnitude of change

### Overview

1.5.16 The magnitude of change affecting seascape/landscape receptors is an expression of the scale of the change that will result from the offshore elements of Rampion 2 and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced.

### Size or scale of change

1.5.17 This criterion relates to the size or scale of change to the seascape/landscape that will arise as a result of the offshore elements of Rampion 2, based on the following factors.

- **Seascape/landscape elements:** The degree to which the pattern of elements that makes up the seascape/landscape character will be altered by the offshore elements of Rampion 2, by removal or addition of elements in the seascape/landscape. The magnitude of change will generally be higher if the features that make up the seascape/landscape character are extensively removed or altered, and/or if many new offshore elements are added to the seascape/landscape.
- **Seascape/landscape characteristics:** This relates to the extent to which the effect of the offshore elements of Rampion 2 changes, physically or perceptually, the key characteristics of the seascape/landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the

seascape/landscape context, the grain or orientation of the seascape/landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the offshore elements of Rampion 2 in relation to these key characteristics. If the offshore elements of Rampion 2 are located in a seascape/landscape receptor that is already affected by other similar development, this may reduce the magnitude of change if there is a high level of integration and the developments form a unified and cohesive feature in the seascape/landscape.

- **Seascape/landscape designation:** In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape receptors and their overall integrity.
- **Distance:** The size and scale of change is also strongly influenced by the proximity of the offshore elements of Rampion 2 to the receptor and the extent to which the development can be seen as a characterising influence on the landscape. Consequently, the scale or magnitude of change is likely to be lower in respect of landscape receptors that are distant from the offshore elements of Rampion 2 and / or screened by intervening landform, vegetation and built form to the extent that the scale of their influence on landscape receptors is small or limited. Conversely, landscapes closest to the development are likely to be most affected. Host landscapes (where the development is located within a 'host' landscape character unit) will be directly affected whilst adjacent areas of landscape character will be indirectly affected.
- **Amount and nature of change:** The amount of Rampion 2 that will be seen. Visibility of the offshore elements of Rampion 2 may range from one WTG blade tip to all of the WTGs; generally, the greater the amount of the offshore elements of Rampion 2 that can be seen, the higher the scale of change. The degree to which Rampion 2 is perceived to be on the horizon or 'within' the seascape/landscape. Generally, the magnitude of change is likely to be lower if Rampion 2 is largely perceived to be on the horizon at distance, rather than 'within' the seascape/landscape.

## Geographical extent

- 1.5.18 The geographic extent over which the seascape/landscape effects has been experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographical extents of the significant and non-significant effects.
- 1.5.19 The extent of the effects will vary depending on the specific nature of the offshore elements of Rampion 2 and is principally assessed through analysis of the extent of perceived changes to the seascape/landscape character through visibility of the offshore elements of Rampion 2.

1.5.20 Landscape effects are described in terms of the geographical extent or physical area that will be affected (described as a linear or area measurement). This should not be confused with the scale of the development or its physical footprint. The manner in which the geographical extent of the seascape/landscape effect is described for different seascape/landscape receptors is explained as follows.

- **Seascape/landscape character:** The extent of the effects on seascape/landscape character will vary depending on the specific nature of the offshore elements of Rampion 2. This is not simply an expression of visibility or the extent of the ZTV, but also includes a specific assessment of the extent of landscape character that will be changed by the offshore elements of Rampion 2 in terms of its character, key characteristics and elements.
- **Landscape Designations:** In the case of a designated landscape, this refers to the extent the special landscape qualities of the designation are affected and whether this can be defined in terms of area or linear measurements, or subjectively through professional judgement (with the support of an expert topic group and / or peer review) and whether the integrity of the designation is affected.

#### Duration and reversibility

1.5.21 The duration and reversibility of seascape/landscape effects has been based on the period over which offshore elements of Rampion 2 are likely to exist (during construction and operation) and the extent to which these elements has been removed (during decommissioning) and its effects reversed at the end of that period. Long-term, medium-term and short-term seascape/landscape effects are defined as follows:

- **long-term** – more than 10 years (may be defined as permanent or reversible);
- **medium-term** – 6 to 10 years; and
- **short-term** – 1 to 5 years.

#### Seascape/landscape magnitude of change rating

1.5.22 The 'magnitude' or 'degree of change' resulting from the offshore elements of Rampion 2 is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' or 'Negligible'. In assessing magnitude of change, the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e., as short/medium/long-term and temporary/permanent). The basis for the assessment of magnitude for each receptor has been made clear using evidence and professional judgement. The levels of magnitude of change that can occur are defined in **Table 1-3**.

**Table 1-3 Seascape/landscape magnitude of change ratings**

<b>Magnitude of change</b>	<b>Description/reason</b>
<b>High</b>	<ul style="list-style-type: none"> <li>• <b>Size/Scale:</b> A large-scale change and major loss of key landscape elements / characteristics or the addition of large scale or numerous new and uncharacteristic features or elements that will affect the seascape/landscape character and the special landscape qualities / integrity of a landscape designation. Directly affecting a host seascape/landscape receptor or indirectly affecting a nearby receptor.</li> <li>• <b>Geographical extent:</b> The size or scale of change will typically, but not always affect a large geographical extent or area and may be close to the offshore elements of Rampion 2.</li> </ul>
<b>Medium-high</b>	Intermediate rating with combination of criteria from high or medium magnitude.
<b>Medium</b>	<ul style="list-style-type: none"> <li>• <b>Size/Scale:</b> A medium scale change and moderate loss of some key landscape elements / characteristics or the addition of some new medium scale uncharacteristic features or elements that could partially affect the seascape/landscape character and the special landscape qualities/integrity of a landscape designation. Directly affecting a host seascape/landscape receptor or indirectly affecting a nearby receptor.</li> <li>• <b>Geographical extent:</b> The size or scale of seascape/landscape change will typically, but not always affect a more localised geographical extent at an intermediate distance from the offshore elements of Rampion 2.</li> </ul>
<b>Medium-low</b>	Intermediate rating with combination of criteria from medium or low magnitude.
<b>Low</b>	<ul style="list-style-type: none"> <li>• <b>Size/Scale:</b> A small-scale change and minor loss of a few landscape elements/non key characteristics, or the addition of some new small-scale features or elements of limited characterising influence on seascape/landscape character/designations.</li> <li>• <b>Geographical extent:</b> There may be a small partial change in seascape/landscape character, typically, but not always affecting a localised geographical extent at some distance from the offshore elements of Rampion 2.</li> </ul>



Magnitude of change	Description/reason
<b>Negligible</b>	<ul style="list-style-type: none"> <li>• Size/Scale: A very small-scale change that may include the loss or addition of some landscape elements of limited characterising influence. The seascape/landscape characteristics and character will be unaffected.</li> <li>• Geographical extent: Typically affecting a very small geographical extent at greater distance from the offshore elements of Rampion 2.</li> </ul>

## Evaluating seascape/landscape effects and significance

- 1.5.23 The level of seascape/landscape effect is evaluated through the combination of seascape/landscape sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in **Table 1-6** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the offshore elements of Rampion 2 and their conclusion, has been presented in a comprehensive, clear and transparent manner.
- 1.5.24 Further information is also provided about the nature of the effects (whether these will be direct/indirect; temporary/permanent/reversible; beneficial/neutral/adverse or cumulative).

### Significant seascape/landscape effects

- 1.5.25 A significant effect will occur where the combination of the variables results in the offshore elements of Rampion 2 having a defining effect on the seascape/landscape receptor, or where changes of a lower magnitude affect a seascape/landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or seascape/landscape character, affecting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant.

### Non-significant landscape effects

- 1.5.26 A non-significant effect will occur where the effect of the offshore elements of Rampion 2 is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or affecting lower value receptors are unlikely to be significant.

## 1.6 Assessing visual effects

### Overview

1.6.1 Visual effects are concerned wholly with the effect of the offshore elements of Rampion 2 on views, and the general visual amenity and are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

*“An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views.”*

1.6.2 Visual effects are identified for different receptors (people) who will experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- **Visual effect:** a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view; and
- **Cumulative visual effects:** the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

1.6.3 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of each visual receptor (or range of sensitivities for receptor groups) and the magnitude of change that will be brought about by the construction, operation and decommissioning of the offshore elements of Rampion 2.

### Zone of Theoretical Visibility (ZTV)

1.6.4 Plans mapping the Zone of Theoretical Visibility (ZTV) are used to analyse the extent of theoretical visibility of the offshore elements of Rampion 2, across the Study Area and to assist with viewpoint selection. The ZTV does not however, take account of the screening effects of buildings, localised landform and vegetation, unless specifically noted (see individual figures). As a result, there may be roads, tracks and footpaths within the study area which, although shown as falling within the ZTV, are screened or filtered by built form and vegetation, which will otherwise preclude visibility.

1.6.5 The ZTVs provide a starting point in the assessment process and accordingly tend towards giving a ‘worst case’ or greatest calculation of the theoretical visibility.

### Viewpoint analysis

1.6.6 Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the Study Area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect will occur. By

arranging the viewpoints in order of distance it is possible to define a threshold or outer geographical limit, beyond which significant effects will be unlikely.

- 1.6.7 The assessment involves visiting the viewpoint location and viewing wirelines and photomontages prepared for each viewpoint location. The fieldwork is conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance.
- 1.6.8 The SLVIA therefore includes viewpoint analysis prepared for each viewpoint and presented as supporting assessment in the SLVIA. A summary table of the findings is also provided in order of distance from the offshore elements of Rampion 2. This summary table assists in defining the direction, elevation, geographical spread and nature of the potential visual effects and identify areas where significant effects are likely to occur. This approach seeks to provide clarity and confidence to consultees and decision makers by allowing the detailed judgements on the magnitude of visual change to be more readily scrutinised and understood.
- 1.6.9 The viewpoint analysis is used to assist the visual assessment of visual receptor locations reported in the PEIR and ES.

## Evaluating visual sensitivity to change

### Overview

- 1.6.10 In accordance with paragraphs 6.31-6.37 of GLVIA3, the sensitivity of visual receptors has been determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the offshore elements of Rampion 2 on the view and visual amenity.

### Value of the view

- 1.6.11 The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.
- **Formal recognition** – The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape.
  - **Informal recognition** – Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no

formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by very few people.

## Susceptibility to change

1.6.12 Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the offshore elements of Rampion 2 (i.e. the susceptibility of the receptor to the type of change arising from the specific proposal) (Landscape Institute, 2013). A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria.

- **Nature of the viewer** – The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher sensitivity. Viewers travelling in cars or on trains will tend to have a lower sensitivity as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less sensitive to changes in views.
- **Experience of the viewer** – The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the offshore elements of Rampion 2 may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the offshore elements of Rampion 2, the experience of the visual receptor will be altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at speed. The visual amenity experienced by the viewer at a particular location varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the offshore elements of Rampion 2.

## Visual sensitivity rating

1.6.13 An overall level of sensitivity has been applied for each visual receptor or view – high, medium-high, medium, medium-low or low – by combining assessments of the value of the view and the susceptibility of the visual receptor to the proposed change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity. The basis for the assessments has been made clear using evidence and professional judgement in the evaluation of each receptor. Criteria that tend

towards higher or lower sensitivity that inform judgements on the visual sensitivity assessed are set out in **Table 1-4** below.

1.6.14 When combining assessments of value and susceptibility to establish sensitivity, the assessment considers the criteria in **Table 1-4** holistically to establish an overall judgement of the sensitivity of visual receptors/views to the type of change arising from the specific proposal. In some circumstances, the value of a view/visual receptor may be given greater weight in the overall sensitivity judgement, however the sensitivity judgements in the SLVIA tend to be weighted more towards susceptibility to change, because this provides for an assessment of the sensitivity of receptors to changes arising from the *‘specific nature of the proposed development’* (Landscape Institute, 2013, para 546), and therefore a highly valued landscape/view *‘does not automatically, or by definition, have high susceptibility’* (and therefore sensitivity) to a particular development, despite its high value established in the baseline.

**Table 1-4 Visual sensitivity to change**

Value	Higher	Lower
	Specific viewpoint identified in Ordnance Survey (OS) maps and / or tourist information and signage.	Viewpoint not identified in OS maps or tourist information and signage.
	Facilities provided at viewpoint to aid the enjoyment of the view.	No facilities provided at viewpoint to aid enjoyment of the view.
	View afforded protection in planning policy.	View is not afforded protection in planning policy.
	View is within or overlooks a designated landscape, which implies a higher value to the visible landscape.	View is not within, nor does it overlook, a designated landscape.
	View has informal recognition and well- known at a local level, as having particular scenic qualities.	View has no informal recognition and is not known as having particular scenic qualities.
	View or viewpoint is recognised through references in art or literature.	View or viewpoint is not recognised in references in art or literature.
	View has high scenic qualities relating to the content and composition of the visible landscape.	View has low scenic qualities relating to the content and composition of the visible landscape.
	Higher	Lower

Susceptibility to change	Viewer who is likely or liable to be influenced by the offshore elements of Rampion 2.	Viewer who is unlikely or not liable to be influenced by the offshore elements of Rampion 2.
	Viewers such as walkers, or tourists, whose main attention and interest are on their surroundings.	Viewers whose main attention is not focused on their surroundings, such as people at work, or specific forms of recreation.
	Residents that gain static, long-term views of the offshore elements of Rampion 2 in their principal outlook.	Viewers who are transient and dynamic, such as those travelling in cars or on trains, where the view is of short duration.
	Viewpoint is visited or used by a large number of people.	View is visited or gained by very few people.
	A view that is focused in a specific directional vista, with notable features of interest in a particular part of the view.	Open views with no specific point of interest, or specific directional vista away from direction of the proposed development.
	Viewers are focused on the experience of a high level of visual amenity at the location due to its overall pleasantness as an attractive visual setting or backdrop to activities.	The visual amenity experienced at the location by viewers is less pleasant or attractive than might otherwise be the case.

**Sensitivity to change**    **High** ←————→ **Medium**    ←————→ **Low**

## Visual magnitude of change

### Overview

1.6.15 The visual magnitude of change is an expression of the scale of the change that will result from the offshore elements of Rampion 2 and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change will be experienced. A separate assessment is also made of the duration and reversibility of visual effects.

### Size or scale of change

1.6.16 An assessment has been made about the size or scale of change in the view that is likely to be experienced as a result of the offshore elements of Rampion 2, based on the following criteria:

- **Distance:** the distance between the visual receptor/viewpoint and the offshore elements of Rampion 2. Generally, the greater the distance, the lower the

magnitude of change, as the offshore elements of Rampion 2 will constitute a smaller scale component of the view.

- **Size:** the amount and size of the offshore elements of Rampion 2 that will be seen. Visibility may range from small or partial visibility of the offshore elements of Rampion 2, to all of the offshore elements being visible. Generally, the larger and greater number of the offshore elements of Rampion 2 that appear in the view, the higher the magnitude of change. This is also related to the degree to which the offshore elements of Rampion 2 may be wholly or partly screened by landform, vegetation (seasonal) and/or built form. Conversely open views are likely to reveal more of the offshore elements of Rampion 2, particularly where this is a key characteristic of the landscape.
- **Scale:** the scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the offshore elements of Rampion 2 may appear larger or smaller relative to the scale of the receiving seascape/landscape.
- **Field of view:** the vertical/horizontal field of view (FoV) and the proportion of the view that is affected by the offshore elements of Rampion 2. Generally, the more of the proportion of a view that is affected, the higher the magnitude of change will be. If the offshore elements of Rampion 2 extend across the whole of the open part of the outlook, the magnitude of change will generally be higher as the full view will be affected. Conversely, if the offshore elements of Rampion 2 cover just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as they will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal/vertical FoV affected, relative to the extent and proportion of the available view.
- **Contrast:** the character and context within which the offshore elements of Rampion 2 will be seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Contrasts and changes may arise particularly as a result of the rotation movement of the WTG blades, as a characteristic that gives rise to effects. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- **Consistency of image:** the consistency of image of the offshore elements of Rampion 2 in relation to other developments. The magnitude of change of offshore elements of Rampion 2 is likely to be lower if its WTG height, arrangement, and layout design are broadly similar to other developments in the seascape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- **Skyline/background:** Whether the offshore elements of Rampion 2 will be viewed against the skyline or a background seascape may affect the level of contrast and magnitude. If the offshore elements of Rampion 2 add to an already developed skyline the magnitude of change will tend to be lower.

- **Number:** generally, the greater the number of separate offshore elements of Rampion 2 seen simultaneously or sequentially, the higher the magnitude of change. Further effects will occur in the case of separate developments and their spatial relationship to each other will affect the magnitude of change. For example, development that appears as an extension to an existing development will tend to result in a lower magnitude of change than a separate, new development.
- **Nature of visibility:** the nature of visibility is a further factor for consideration. The offshore elements of Rampion 2 may be subject to various phases of development change and the manner in which the offshore elements of Rampion 2 may be viewed could be intermittent or continuous and / or seasonally, due to periodic management or leaf fall.

## Geographical extent

1.6.17 The geographic extent over which the visual effects will be experienced has also been assessed. This is distinct from the size or scale of effect and is described in terms of the physical area or location over which it will be experienced (described as a linear or area measurement). The extent of the effects will vary according to the specific nature of the offshore elements of Rampion 2 and is principally assessed through ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors. The geographical extent of visual effects is described as per the following examples.

- The geographical extent can be described as an area measurement or proportion of the total area of the receptor affected. For example, effects on people within a particular area such as a golf course or area of common land can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people within that area. The geographical extent of that visual effect can be expressed as approximately '5 hectares' or '10%' of an area of common land or defined recreational area.
- The geographical extent can be described as a linear measurement (m or km) according to the length of route affected. For example, effects on people travelling on a route through the landscape such as a road or footpath can be illustrated via a 'representative viewpoint' that represents a similar visual effect, likely to be experienced by larger numbers of people along that route. The geographical extent of that visual effect can be expressed as approximately '2km' or '10%' of the total length of the route.
- The geographical extent of a visual effect experienced from a specific viewpoint may be limited to that location alone. An example of a 'specific viewpoint' is a public viewpoint recommended in tourist literature such as a well visited hill summit. An example of an 'illustrative viewpoint' is a particular location within a built up or well vegetated area where an uncharacteristically open or restricted view exists.



Duration and reversibility

- 1.6.18 The duration and reversibility of visual effects are based on the period over which the offshore elements of Rampion 2 are likely to exist (during construction and operation) and the extent to which the offshore elements of Rampion 2 will be removed (during decommissioning), with effects reversed at the end of that period.
- 1.6.19 Long-term, medium-term and short-term visual effects are defined as follows:
  - long-term – more than 10 years (may be defined as permanent or reversible);
  - medium-term – 6 to 10 years; and
  - short-term – 1 to 5 years.

Visual magnitude of change rating

- 1.6.20 The ‘magnitude’ or ‘degree of change’ resulting from the offshore elements of Rampion 2 is described as ‘High’, ‘High-medium’, ‘Medium’, ‘Medium-low’ ‘Low’ and ‘Negligible’ as defined in **Table 1-5**. In assessing the magnitude of change the assessment has focused on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (i.e., as short/medium/long-term and temporary/permanent). The basis for the assessment of magnitude for each receptor has been made clear using evidence and professional judgement. Examples of criteria that tend towards higher or lower magnitude of change that can occur on views and visual receptors are set out in **Table 1-5**.

**Table 1-5 Visual magnitude of change ratings**

Magnitude of change	Magnitude of change definition	Examples of visual magnitude of change
High	The offshore elements of Rampion 2 will result in a high level of alteration to the baseline view, forming the prevailing influence and/or introducing elements that are substantially uncharacteristic in the existing view. The addition of the offshore elements of Rampion 2 will result in a high change, loss or	<ul style="list-style-type: none"> <li>• Size and Scale: A large, prominent and/or prevailing change to the view.</li> <li>• Number: Involving the loss/addition of a large number of features/elements.</li> <li>• Distance: Typically appearing closer to the viewer in the fore to middle ground.</li> <li>• FoV: Affecting a large vertical angle and wide horizontal FoV.</li> <li>• Nature of Visibility: Multiple phase development, continuously and sequentially visible.</li> <li>• Contrast: Strong degree of contrast with surroundings with little or no screening.</li> <li>• Skyline: Visible on the skyline as a new feature.</li> <li>• Consistency of Image: Contrasting with other developments, lacking in visual rationale.</li> </ul> <p>Typically experienced from representative viewpoints illustrating a visual effect likely to be experienced by larger numbers of people, relative to the activity,</p>

Magnitude of change	Magnitude of change definition	Examples of visual magnitude of change
	addition to the baseline view.	affecting a large area or length / proportion of route. May also be experienced from a specific viewpoint.
<b>Medium-high</b>	Intermediate rating with combination of criteria from high or medium magnitude of change category.	
<b>Medium</b>	<p>The offshore elements of Rampion 2 will result in a medium level of alteration to the baseline view, forming a readily apparent influence and/or introducing elements that are potentially uncharacteristic in the existing view. The addition of the offshore elements of Rampion 2 will result in a medium change, loss or addition to the baseline view.</p>	<ul style="list-style-type: none"> <li>• Size and Scale: A moderate, readily apparent and/or noticeable change to the view.</li> <li>• Number: Involving the loss/addition of a number of features/elements.</li> <li>• Distance: Typically appearing in the middle ground.</li> <li>• FoV: Affecting a medium vertical angle and moderate horizontal FoV.</li> <li>• Nature of Visibility: Multiple phase development, intermittently and sequentially visible.</li> <li>• Contrast: Contrast with surroundings and may benefit from some screening.</li> <li>• Skyline: Visible on the skyline along with other features.</li> <li>• Consistency of Image: Different from other developments, some visual rationale.</li> </ul> <p>Typically experienced from representative viewpoints illustrating a visual effect likely to be experienced by a medium number of people, relative to the activity, affecting a medium area or length / proportion of route. May also be experienced from a specific viewpoint.</p>
<b>Medium-low</b>	Intermediate rating with combination of criteria from medium or low magnitude of change category.	
<b>Low</b>	<p>The offshore elements of Rampion 2 will result in a low level of alteration to the baseline view, providing a slightly apparent influence and/or introducing elements that are characteristic in the existing view. The addition of the offshore elements of Rampion 2 will result in a low</p>	<ul style="list-style-type: none"> <li>• Size and Scale: A small, slightly apparent and/or perceptible change.</li> <li>• Number: Involving the loss/addition of a small number of features/elements.</li> <li>• Distance: Typically appearing in the background.</li> <li>• FoV: Affecting a small vertical angle and narrow horizontal FoV.</li> <li>• Nature of Visibility: Simple, single development, intermittently and infrequently visible.</li> <li>• Contrast: Some parity/'fits' with surroundings and may benefit from screening.</li> <li>• Skyline: Partly visible on a developed skyline or not visible on the skyline.</li> <li>• Consistency of Image: Similar from other developments with visual rationale, appearing</li> </ul>

Magnitude of change	Magnitude of change definition	Examples of visual magnitude of change
	change, loss or addition to the baseline view.	<p>reasonably well accommodated within its surroundings.</p> <p>Typically experienced from illustrative viewpoints likely to be experienced by low numbers of people, relative to the activity, affecting a smaller area or length / proportion of route. May also be experienced from a specific viewpoint.</p>
<b>Negligible</b>	<p>The offshore elements of Rampion 2 will result in a negligible alteration to the existing view. If visible it may, form a barely discernible influence and/or introduce elements that are substantially characteristic in the baseline view. The addition of the offshore elements of Rampion 2 will result in negligible incremental change, loss or addition to the baseline view.</p>	<ul style="list-style-type: none"> <li>• Size and Scale: A negligible, barely discernible and/or inconspicuous change.</li> <li>• Number: Involving the loss/addition of a small number of features/elements.</li> <li>• Distance: Typically appearing in the far distance.</li> <li>• FoV: Affecting a very small vertical and narrowest horizontal FoV.</li> <li>• Nature of Visibility: Simple, single development, intermittently and infrequently visible.</li> <li>• Contrast: Blends with surroundings and/or is well screened.</li> <li>• Skyline: Partly visible on a developed skyline or not visible on the skyline.</li> <li>• Consistency of Image: Similar from other developments with strong visual rationale, appearing well accommodated within its surroundings.</li> </ul> <p>Typically experienced from illustrative viewpoints likely to be experienced by low numbers of people, relative to the activity, affecting a smaller area or length/proportion of route. May also be experienced from a specific viewpoint.</p>

## Evaluating visual effects and significance

### Overview

- 1.6.21 The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in **Table 1-6** which is used to guide the assessment. The factors considered in the evaluation of the sensitivity and the magnitude of the change resulting from the offshore elements of Rampion 2 and their conclusion, have been presented in a comprehensive, clear and transparent manner.

- 1.6.22 Further information is also provided about the nature of the effects (whether these will be direct/indirect; temporary/permanent/reversible; beneficial/neutral/adverse or cumulative).

### Significant visual effects

- 1.6.23 A significant effect is more likely to occur where a combination of the variables results in the offshore elements of Rampion 2 having a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity.

### Non-significant visual effects

- 1.6.24 A non-significant effect is more likely to occur where a combination of the variables results in the offshore elements of Rampion 2 having a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity.

### Weather conditions

- 1.6.25 The assessment of visual effects is undertaken in clear weather with good to excellent visibility. This means that the viewpoint assessment represents a maximum effect assessment of the likely visual effects. The same viewpoint may be experienced under less optimal viewing conditions resulting in a significant effect appearing as non-significant, due to the change in the variable weather conditions. Due to the conditions of the assessment the reverse (a non-significant effect appearing as significant) is unlikely to occur.

## 1.7 Assessing cumulative seascape, landscape and visual effects

- 1.7.1 NatureScot's guidance, *Assessing the Cumulative Impact of Onshore Wind Energy Developments* (2012) is widely used across the UK to inform the specific assessment of the cumulative effects of both on and offshore windfarms. Both GLVIA3 and NatureScot's guidance provides the basis for the methodology for the cumulative SLVIA and LVIA undertaken in the PEIR and ES. The NatureScot (2012) guidance defines:
- *“Cumulative effects as the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments taken together (NatureScot, 2012: p4);*
  - *Cumulative landscape effects are those effects that ‘can impact on either the physical fabric or character of the landscape, or any special values attached to it’ (NatureScot, 2012, p10); and*
  - *Cumulative visual effects are those effects that can be caused by combined visibility, which occurs where the observer is able to see two or more developments from one viewpoint and/or sequential effects which occur when*

*the observer has to move to another viewpoint to see different developments”* (NatureScot, 2012, p11).

- 1.7.2 As of May 2020, and with the exception of Rampion 1, there are no other existing, consented or proposed offshore windfarms within the 50 km radius SLVIA study area (**Figure 15-3, Volume 3** (Document Reference: 6.3.15)), nor within UK waters within approximately 140km of the offshore elements of Rampion 2. The closest being the Thanet Offshore Wind Farm Extension, located some 143km distant. The closest offshore wind farms within French waters are located approximately 70km to the south. It is important to note too that, following completion of The Crown Estate’s Round 4 leasing process, there are no further planned developments of similar nature to the offshore elements of Rampion 2 within the study area or wider South Coast region at this time or for the reasonably foreseeable future.
- 1.7.3 For this reason, the potential cumulative effects of the offshore elements of Rampion 2 with other existing, consented or proposed wind farm development are likely to be limited and described as follows:
- ‘Whole Proposed Development’ effects resulting from the combined effects of the onshore and offshore elements of Rampion 2. These effects are assessed as part of the main SLVIA/LVIA.
  - The cumulative effects of the offshore elements of Rampion 2 in addition to and in combination with the existing Rampion 1 offshore wind farm.
  - The cumulative effects of the offshore elements of Rampion 2 in addition to and in combination with other similar development (onshore and offshore wind farms) that is either consented/under construction; the subject of a valid planning application; or proposed as part of relevant plans and programmes (the PINS Programme of Projects and MMO ‘Marine Case Management System’ being the source most relevant for this assessment).
- 1.7.4 The cumulative assessment methodology for SLVIA/LVIA has been described on the basis of the scope presented above, noting that this will be subject to further consultation and agreement through both the publication of the PEIR and the ongoing Evidence Plan Process.

## 1.8 Evaluation of significance

- 1.8.1 The matrix presented in **Table 1-6** is used as a guide to illustrate the LVIA process. In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.
- 1.8.2 The landscape and visual assessment unavoidably involves a combination of quantitative and qualitative assessment and wherever possible cross references have been made to objective evidence, baseline figures and/or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review,

and the adoption of a systematic, impartial, and professional approach. Importantly each effect results from its own unique set of circumstances and have been assessed on a case by case basis. The matrix as presented in **Table 1-6** should therefore be considered as a guide; where deviations from this guide have been made, this is explained clearly in the assessment.

- 1.8.3 Significant landscape and visual effects are highlighted in bold and shaded dark grey in **Table 1-6**. They relate to all those effects that result in a ‘**Major**’ or a ‘**Major / Moderate**’ level of effect. **Moderate** levels of effect (shaded mid grey) may be significant or not significant subject to the assessor’s professional judgement, with assessments explained in full in **Chapter 15: Seascape, landscape and visual impact assessment, Volume 2** (Document Reference: 6.2.15) **Appendix 15.4: Viewpoint assessment, Volume 4** (Document Reference: 6.4.15.4) and **Appendix 15.5: Assessment of aviation and navigation night-time lighting, Volume 4** of the ES (Document Reference: 6.4.15.5) where they occur. White or unshaded boxes in **Table 1-6** indicate a not significant effect.
- 1.8.4 In those instances where there will be no effect, the magnitude has been recorded as ‘Zero’ and the level of effect as ‘None’.

**Table 1-6 Evaluation of seascape, landscape and visual effects**

Sensitivity	Magnitude of change					
	High	Medium-high	Medium	Medium-low	Low	Negligible
High	<b>Major</b> (Significant)	<b>Major</b> (Significant)	<b>Major / Moderate</b> (Significant)	<b>Moderate*</b>	Moderate / Minor	Minor
Medium-high	<b>Major</b> (Significant)	<b>Major / Moderate</b> (Significant)	<b>Moderate*</b>	<b>Moderate*</b>	Moderate / Minor	Minor
Medium	<b>Major / Moderate</b> (Significant)	<b>Moderate*</b>	<b>Moderate*</b>	Moderate / Minor	Minor	Minor / Negligible
Medium-low	<b>Moderate*</b>	<b>Moderate*</b>	Moderate / Minor	Minor	Minor / Negligible	Negligible
Low	Moderate / Minor	Moderate / Minor	Minor	Minor / Negligible	Negligible	Negligible

## 1.9 Nature of effects

### Overview

- 1.9.1 The nature of effects refers to whether the landscape and/or visual effect of the offshore elements of Rampion 2 is positive or negative (herein referred to as ‘beneficial’ and ‘adverse’).
- 1.9.2 The EIA Regulations 2017 state that the ES should define *‘the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development’*.
- 1.9.3 Cumulative effects have been described in **Section 1.7**, and *‘short-term, medium-term and long-term, permanent and temporary’* effects are described in **Section 1.5** and **Section 1.6** under the heading ‘Duration of Effect’. Transboundary effects relating to the SLVIA concern the overlap of the 50km study area with French maritime waters and the potential for effects of Rampion 2 on seascape, landscape and visual receptors in countries outside UK territorial waters.
- 1.9.4 The definition of the remaining terms used in this assessment is defined here.

### Direct and indirect effects

- 1.9.5 Direct landscape effects relate to the host landscape and concern both physical and perceptual effects on the receptor.
- 1.9.6 Indirect landscape effects relate to those landscapes and receptors which separated by distance or are remote from the development and therefore are only affected in terms of perceptual effects. The Landscape Institute also defines indirect effects as those which are not a direct result of the development but are often produced away from it or as a result of a complex pathway.
- 1.9.7 Visual effects are considered as direct effects, as the view itself may be directly altered by the proposed development.

### Positive and negative effects

- 1.9.8 Guidance provided by the in GLVIA3 on the nature of effect (i.e., beneficial or adverse) states that *‘in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity’*, but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, reasoned professional opinion.
- 1.9.9 In this assessment the nature of effects refers to whether the landscape and/or visual effect of the offshore elements of Rampion 2 is positive or negative (herein referred to as ‘beneficial’/‘neutral’ or ‘adverse’).
- 1.9.10 In relation to many forms of development, SLVIA will identify ‘beneficial’ and ‘adverse’ effects by assessing these under the term ‘Nature of Effect’. The seascape, landscape and visual effects of wind farms are difficult to categorise in

either of these brackets as, unlike other disciplines, there are no definitive criteria by which the effects of wind farms can be measured as being categorically 'beneficial' or 'adverse'. In some disciplines, such as noise or ecology, it is possible to quantify the effect of a wind farm in numeric terms, by objectively identifying or quantifying the proportion of a receptor that is affected and consequently assessing the nature of that effect in justifiable terms. However, this is not the case in relation to landscape and visual effects where the approach combines quantitative and qualitative assessment.

1.9.11 Generally, in the development of 'new' wind farms, a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance. Unless it is stated otherwise, the effects considered in the assessment have been considered to be adverse. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant. The following definitions have been used.

- **Beneficial effects** – contribute to the seascape, landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial landscape and visual attributes. The development contributes to the seascape, landscape or visual amenity by virtue of good design. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components.
- **Neutral effects** – occur where the development fits with the existing seascape/landscape character or visual amenity. The development neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, nor where the effects are so limited that the change is hardly noticeable. A change to the seascape, landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation.
- **Adverse effects** – are those that detract from the seascape/landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the seascape, landscape and visual resource, or through the removal of elements that are key in its characterisation.

## Frequency and likelihood of visual effects – weather conditions

1.9.12 The judgements made in the SLVIA are based on optimum 'very good' to 'excellent' visibility of the offshore elements of Rampion 2. This assumption is assessed as the worst-case scenario, but in reality, the degree and extent of visual effects arising from the construction and operation of the offshore infrastructure is a combination of several different factors, including the prevailing weather conditions. The prevailing weather can determine changes in character and visibility, with varied wind, light and tidal movements and the clarity or otherwise of the atmosphere. Collectively, these will combine to reduce the number of days over which views of the offshore elements of Rampion 2 will be available from the coastline and hinterland, or to inhibit views, rendering them more visually recessive within the wider seascape. Viewing conditions and visibility has been found to vary in the study area, and the effects of the wind farm will vary greatly



according to the weather. This means that effects that are assessed to be significant may be not-significant under different, less clear conditions.

- 1.9.13 Although the SLVIA is based on ‘very good’ to ‘excellent’ visibility conditions, a description of visibility frequency is provided using METAR visibility data from the nearest Met Office stations that record visibility (Thorney Island), to highlight potential trends in the visibility conditions of the study area. Both GLVIA3 (8.15) and NatureScot guidance (NatureScot 2017, para 39) refer to use of Met Office visibility data to assess typical visibility conditions within an area. Most synoptic observing stations have sensors which provide a measurement of visibility. Visibility sensors measure the meteorological optical range which is defined as the length of atmosphere over which a beam of light travels before its luminous flux is reduced to 5% of its original value. The use of light within the visible spectrum allows the sensor to most accurately simulate human perception of visibility. Reasonably accurate measurements are possible over a range of visibility, extending from a few tens of metres to a few tens of kilometres.
- 1.9.14 Although there are limitations to how this data can be applied to judgements about wind farm visibility, the visibility data provides some understanding and evidence basis for evaluating the visibility of the WTGs against their background.
- 1.9.15 Met Office visibility data has been assessed from the nearest weather station that records visibility, at Thorney Island (located to the west of the SLVIA study area). Visibility is categorised into distance ranges, such as <1km, 1 to 2km, 2 to 3km etc and a frequency table has been compiled revealing the total number of observations within each distance category at hourly intervals for each month. The data has been summarised and mapped to highlight trends in the visibility conditions of the study area, such as the distance category which has the most visibility observations recorded, and approximate number of viewing days lost to low visibility weather conditions. Visibility data is then assessed to set out the frequency of visibility (over a 10 year period) at different distance ranges, based on Met Office visibility definitions:
- < 1km Very Poor;
  - 1 to 4km Poor;
  - 4 to 10km Moderate;
  - 10 to 20km Good;
  - 20 to 40km Very Good; and
  - 40km > Excellent.
- 1.9.16 The Met Office visibility data is then interpreted to allow more specific quantification of the likely frequency of visibility of the offshore elements of Rampion 2 from the coastal viewpoints (as a % and average number of days per year), based on the distance of each viewpoint location from the Rampion 2 array area. The Met Office visibility frequency data is used to inform an assessment of the ‘likelihood of effect’ from each viewpoint, in order to qualify any significant effects assessed in optimum visibility conditions with how likely they are to actually occur given the prevailing weather/ visibility conditions.

- 1.9.17 Visibility data from sea-faring vessels has been obtained from the Met Office to supplement the Met Office visibility data from Thorney Island onshore. This is used to further inform the assessments of the potential likelihood of the offshore elements of Rampion 2 being visible from the coast.

## 1.10 Visual representations

### Overview

- 1.10.1 Zones of Theoretical Visibility (ZTVs) and visualisations (wirelines or wirelines and photomontages) are graphical images produced to assist and illustrate the SLVIA and the cumulative assessment. The methodology used for viewpoint photography and photomontages has been produced in accordance with:
- the NatureScot guidance on Visual Representation of Wind Farms, Version 2.2 (2017);
  - the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA 3) (Landscape Institute and IEMA, 2013); and
  - the Landscape Institute Technical Guidance Note on Visual Representation of Development Proposals (2019).

### Zone of theoretical visibility (ZTV)

- 1.10.2 The ZTVs in **Figures 15-14 to Figure 15-25, Volume 3** (Document Reference: 6.3.15) have been calculated using computer software to generate a ZTV of the offshore elements of Rampion 2, to demonstrate the theoretical extent of visibility from any point in the study area.
- 1.10.3 A 3D computer model has been developed of the existing landscape and key reference using digital terrain data as follows.
- **Ordnance Survey Terrain 50**: Used to produce the main or standard ZTV plot and wirelines, these tiles provide a digital record of the existing landform of Great Britain, or Digital Terrain Model (DTM) at 10m elevation intervals based on 50m grid squares and models representing the specified geometry and position of the offshore elements. The computer model will include the entire study area and takes account of the effects caused by atmospheric refraction and the Earth's curvature.
  - **Ordnance Survey Terrain 5 or LIDAR Composite 2m**: Used to produce more detailed ZTV plots where required to assess particular effects, such as along the coastline, or within a detailed part of the study area. LIDAR data takes into account the screening effects of vegetation, buildings or other surface features that may prevent or reduce visibility (insofar as they are represented in the LIDAR data). The computer model will include the entire study area and takes account of atmospheric refraction and the Earth's curvature.
- 1.10.4 The resulting ZTV plots have been overlaid on Ordnance Survey mapping at an appropriate scale and presented as figures using desktop publishing or graphic design software.

- 1.10.5 Cumulative ZTV plots based on the intervisibility of the offshore elements of Rampion 2 and other relevant developments within the study area have also been produced.
- 1.10.6 There are limitations in this theoretical production, and these should be considered in the interpretation and use of the ZTV as follows.
- Where the ZTV has been calculated using Ordnance Survey Terrain 50 or Terrain 5 digital terrain data, this will not account for the screening effects of vegetation or built form unless added in the form of OS Vectormap data or digitally added and stated on the figure.
  - The 50km radius ZTVs are based on a 50m data grid OS Digital Terrain Model (DTM). Several ZTVs have also been produced at an enlarged A1 scale utilising 5m data grid (OS Terrain 5) covering the coastal parts of the study area within 30km of the Rampion 2 array area.
  - The ZTVs are based on theoretical visibility from 2m above ground level.
  - The Blade Tip ZTV does not indicate the decrease in visibility that occurs with increased distance from the Rampion 2 array area. The nature of what is visible from 3km away will differ markedly from what is visible from 10km away, although both are indicated on the Blade Tip ZTV as having the same level of visibility.
  - There is a wide range of variation within the visibility shown on the ZTV, for example, an area shown on the blade tip ZTV as having visibility of 75 WTGs may gain views of the smallest extremity of blade tips, or of 75 full WTGs. This can make a considerable difference in the effects of the offshore elements of Rampion 2 on that area. The hub height ZTV has been used in conjunction with the blade tip ZTV to provide an indication of the degree to which the WTGs are visible.
- 1.10.7 These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the offshore elements of Rampion 2 will be theoretically visible and tending to present a worst-case or over-estimate the actual visibility. The information drawn from the ZTV is checked by field survey observation.
- 1.10.8 The SLVIA includes a Horizontal Angle ZTV to show the horizontal field of view (in degrees) that may be affected by views of the WTGs.

## Methodology for baseline photography

### Overview

- 1.10.9 Once a view has been selected, the location is visited, confirmed, and assessed with the aid of a wireline or similar visualisation in the field. A photographic record is taken to record the view and the details of the viewpoint location and associated data are recorded to assist in the production of visualisations and to validate their accuracy.
- 1.10.10 The following photographic information is recorded:

- date, time, weather conditions and visual range;
  - GPS recorded 12 figure grid reference accurate to ~5 to 10m;
  - GPS recorded Above Ordnance Datum (AOD) height data;
  - use of a fixed 50mm focal length lens is confirmed;
  - horizontal field of view (in degrees); and
  - bearing to Target Site.
- 1.10.11 The photographs used to produce the photomontages were taken at the times of day and locations agreed with the consultees using Canon EOS 5D and 6D Digital SLR cameras, with a fixed lens and a full-frame (35mm negative size) complementary metal oxide semiconductor (CMOS) sensor. The photographs were taken on a tripod with a pano-head at a height of approximately 1.5m above ground.
- 1.10.12 All the resulting visualisations have been prepared to indicate other cumulative development in order that they may assist the cumulative assessment as well as the LVIA.
- 1.10.13 Whilst no two-dimensional image can fully represent the real viewing experience, the visualisation aims to provide a realistic representation of the offshore elements, based on current information and photomontage methodology.

#### Weather conditions

- 1.10.14 Guidelines for LVIA (GLVIA3) para 8.22 state – *‘In preparing photomontages, weather conditions shown in the photographs should (with justification provided for the choice) be either:*
- *representative of those generally prevailing in the area; or*
  - *taken in good visibility, seeking to represent a maximum visibility scenario when the development may be highly visible’.*
- 1.10.15 In preparing photomontages for the SLVIA, photographs have been taken in favourable weather conditions during periods of ‘good’, ‘very good’ or ‘excellent’ visibility seeking to represent a maximum visibility scenario when the offshore elements of Rampion 2 may be most visible.
- 1.10.16 Baseline viewpoint photographs have been taken to represent the different prevailing viewing conditions in which Rampion 2 will be viewed. Opportunities to see turbines ‘back-lit’ i.e. in silhouette is a notable feature of Rampion 1 as nearly all viewpoints are southerly facing. This is an attribute of Rampion 1 that will be shared by the turbines of Rampion 2. Since the majority of viewpoints are southerly facing, panoramic photography for Rampion 2 inevitably captures the sun in some part of the southerly view panorama and the opportunity to view Rampion 1 and 2 ‘into the sun’ is a typical visibility scenario that will generally pertain from the southerly facing views. Baseline viewpoint photographs have been taken to represent the prevailing viewing conditions in which the Rampion 2 will be viewed ‘into the sun’ in these southerly views. Baseline viewpoint photographs have also been taken to illustrate alternative viewing scenarios, such

as in viewpoints from the west (e.g., the Isle of Wight) and east (e.g. Seven Sisters, Beachy Head etc), which can be viewed when the sun is outside the main panorama towards Rampion 2 and provides side or front lighting of the turbines.

## Methodology for production of visualisations

- 1.10.17 Photomontages have been produced in accordance with NatureScot Visual Representation of Windfarms Guidance (NatureScot, 2017) and Landscape Institute (2019) Technical Guidance Note (TGN) 06/19 Visual Representation of Development Proposals.
- 1.10.18 A photomontage is a visualisation which superimposes an image of a proposed development upon a photograph or series of photographs. Photomontage is a widespread and popular visualisation technique, which allows changes in views and visual amenity to be illustrated and assessed, within known views of the 'real' landscape.
- 1.10.19 To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a fully cylindrically projected panorama using Adobe Photoshop or PTGui software. This process avoids the wide-angle effect that will result should these frames be arranged in a perspective projection, whereby the image is not faceted to allow for the cylindrical nature of the full 360° view but appears essentially as a flat plane.
- 1.10.20 Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.
- 1.10.21 The baseline photographs and cumulative wireline visualisations shown for each viewpoint cover a 90° field of view (or in some cases, up to 360°), which accords with NatureScot guidance. These are cylindrically projected images and should be viewed flat at a comfortable arm's length.
- 1.10.22 The photographs are also joined to create planar projection panoramas using PTGui software. These are used in the creation of the 53.5° field of view photomontages.
- 1.10.23 Wireline representations that illustrate the offshore elements of Rampion 2, and set within a computer-generated image of the landform, are used in the assessment to predict theoretical appearance of the WTGs. These are produced with Resoft WindFarm software and are based on a terrain model with a 50m data grid (OS Panorama) with a more detailed area of terrain modelling (OS terrain 5) used for the coastal parts of the study area, which includes the majority of viewpoints used in the SLVIA. There are limitations in the accuracy of digital terrain model (DTM) data so that landform may not be picked up precisely and may result in WTGs being more or less visible than is shown; however, the use of OS Terrain 5 minimises these limitations. Where descriptions within the assessment identify the numbers of WTGs visible this refers to the illustrations generated and therefore the reality may differ to a degree from these impressions.
- 1.10.24 Daytime visualisations and wirelines show a WTG model which represents the maximum development scenario of the offshore elements of Rampion 2 in the Rampion 2 array area and allow the potential proportions of the WTGs to be appreciated from the visualisations.

- 1.10.25 Fully rendered photomontages have been produced for the agreed viewpoints using Resoft WindFarm software, to provide a photorealistic image of the appearance of the offshore elements of Rampion 2. In the daytime photomontages modelled representations are combined with the baseline view photographs to create a photorealistic rendered photomontage image of the development.
- 1.10.26 ‘Panoramic photomontages’ are produced in the SLVIA with a 53.5° HFoV, based on relevant guidance (NatureScot, 2017) and due to their suitability to encompass the horizontal spread of Rampion 2 and show the turbines at a representative scale and distance. In some views, two adjacent 53.5° photomontages will be required to capture the horizontal spread of Rampion 2.
- 1.10.27 ‘Single frame’ 39.6° (50mm focal length) images have been provided in addition to the 53.5° HFoV images from a selection of viewpoints as requested by Natural England. It should be noted that the single frame 39.6° HFoV images do not always capture the full horizontal spread of Rampion 2, which is shown in the wider 53.5° HFoV images. A 39.6° HFoV single frame image is also an enlargement and is not representative of the apparent height of the turbines when viewed with the photomontage in the field (Highland Council, 2016).
- 1.10.28 The 53.5° field of view wirelines and photomontages are prepared using a planar projected image and should also be viewed flat at a comfortable arm’s length. These images are each printed on paper 841 x 297mm (half A1) which provides for a relatively large-scale image.
- 1.10.29 In the wirelines, the WTGs are shown with the central WTGs facing the viewer directly, with the full rotor diameter visible at its tallest extent. In the photomontages, the WTG rotors are shown with a random appearance with the central WTGs facing the viewer directly.
- 1.10.30 WTGs with jacket foundations and the offshore substations are shown in the photomontages in Viewpoints 6, 7, 8, 9, 10 and 14, with all other photomontages showing WTG with monopile foundations.
- 1.10.31 Rendering of the WTGs in the photomontages is as photorealistic as possible to the conditions shown in each viewpoint photograph. In order to address the difficulty of representing wind farms clearly within the photos, and in line with guidance (NatureScot, 2017) some enhancement of the existing Rampion WTGs has been applied to ensure that they stand out in the finished photomontage, in order to improve the clarity of the illustration. As the Rampion 2 project involves an extension to the existing Rampion 1 wind farm, it is important that the existing wind farm appears clearly in the photographs relative to the rendered Rampion 2 WTGs. Where required, the existing Rampion 1 WTGs have been enhanced so that the images of both existing and proposed turbines match where the depiction of existing turbines at relatively long distances was not clear in the photographs (for example due to weather conditions and the position of the sun in southerly views).
- 1.10.32 There is some variation in the appearance and visibility of the WTGs between the viewpoints, as they are rendered to suit the conditions shown in each of the different viewpoint photographs, which have some unavoidable degree of variation in terms of lighting and weather conditions. The key requirement is that the WTGs need to be rendered with sufficient contrast against the skyline backdrop to

illustrate their maximum visibility scenario in each image. Photomontages have been prepared to depict how the offshore elements of Rampion 2 will appear to illustrate the worst-case. The full suite of viewpoint photomontages should be viewed to gain an impression of the likely visual effects of the offshore elements of Rampion 2.

## Night-time visualisations

- 1.10.33 Night-time visualisations have been produced from several key viewpoints, to visually represent aviation and marine navigation lighting at night.
- 1.10.34 The visual effect of the Rampion 2 Offshore Wind Farm at night has been assessed in **Appendix 15.5: Assessment of aviation and navigation night-time lighting, Volume 4** of the ES (Document Reference: 6.4.15.4) informed by the night-time photomontage visualisations produced from five representative viewpoints:
- Viewpoint 2 - Birling Gap (**Figure 15-27, Volume 3** (Document Reference: 6.3.15));
  - Viewpoint 8 - Brighton sea front promenade (**Figure 15-33, Volume 3** (Document Reference: 6.3.15));
  - Viewpoint 17 - Devil's Dyke (**Figure 15-42, Volume 3** (Document Reference: 6.3.15));
  - Viewpoint 21 – Bignor Hill (**Figure 15-46, Volume 3** (Document Reference: 6.3.15));
  - Viewpoint 27 - Hollingbury Golf Course/Hill Fort (**Figure 15-50, Volume 3** (Document Reference: 6.3.15)); and
  - Viewpoint 31 - Butser Hill National Nature Reserve (**Figure 15-54, Volume 3** (Document Reference: 6.3.15)).
- 1.10.35 A worst-case approach is applied in the photomontages and assessment in **Appendix 15.5: Assessment of aviation and navigation night-time lighting, Volume 4** of the ES (Document Reference: 6.4.15.4) that considers the potential effects of medium-intensity 2000cd lights in clear visibility, replicating the intensity of the Rampion 1 WTG aviation lights in the photomontages (which are understood to be 2000cd i.e. not dimmed in good visibility).
- 1.10.36 Night-time visualisations have been produced using a combination of using Resoft's WindFarm software's aviation module for positioning of the lights, 3D modelling software that can simulate lighting conditions, referencing existing lighting imagery/atmospheric conditions from the baseline photographs and professional judgement using photoshop.
- 1.10.37 The appearance of the lights in the night-time photomontages emulates how lights appear in the other parts of the baseline photographs. A light shown in a photograph tends to have a slight 'halo' (or bokeh) around it due to the way a camera lens renders out-of-focus points of light. This is not the way lights are seen in reality, as they tend to be much more defined as point sources. However, the proposed lighting has been shown in this way for consistency with the lights in the baseline photographs.

## Information on limitations of visualisations

- 1.10.38 The photographs and other graphic material such as wirelines and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what has been apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs. Limitations of photomontages are set out further below.
- 1.10.39 The photomontage visualisations of the offshore elements of Rampion 2 (and any wind farm proposal) have a number of limitations when using them to form a judgement on visual impact. These include the following:
- a visualisation can never show exactly what the offshore elements of Rampion 2 will look like in reality due to factors such as: different lighting, weather and seasonal conditions which vary through time and the resolution of the image;
  - the images provided give a reasonable impression of the scale of the WTGs and the distance to the WTGs but can never be 100% accurate;
  - a static image cannot convey turbine movement, or flicker or reflection from the sun on the turbine blades as they move;
  - the viewpoints illustrated are representative of views in the area, but cannot represent visibility at all locations;
  - to form the best impression of the impacts of the offshore elements of Rampion 2 proposal these images are best viewed at the viewpoint location shown;
  - the images must be printed and viewed at the correct size (260mm by 820mm);
  - images should be held flat at a comfortable arm's length. If viewing these images on a wall or board at an exhibition, stand at arm's length from the image presented to gain the best impression;
  - it is preferable to view printed images rather than view images on screen. Images on screen should be viewed using a normal PC screen with the image enlarged to the full screen height to give a realistic impression; and
  - there are practical limitations to shooting viewpoint photographs only in very good or excellent visibility and at particular times of day. The photographs shown in the visualisations show the most favourable weather conditions available during photographic survey work.

### Technical Methodology – Visualisations

- 1.10.40 In accordance with the requirements of Landscape Institute (2019) Technical Guidance Note 06/19, **Table 1-7** sets out technical information for the preparation of photomontage visualisations.



**Table 1-7 Technical Methodology - Visualisations**

<b>Category</b>	<b>Details</b>
<b>Photography</b>	
<b>Visualisation type</b>	
<b>Camera location</b>	Established via hand-held Garmin GPS
<b>Level of accuracy of location</b>	
<b>Camera</b>	Canon EOS 5D Mark II and Canon EOS 6D Digital SLR. Full-frame (35mm negative size) CMOS sensor.
<b>Lens</b>	50mm fixed f1.4 lens
<b>Tripod</b>	Set to approximately 1.5m. Nodal Ninja panoramic head with Adjust Leveller. Nodal Ninja panoramic head set to take photographs at 20° increments
<b>Photography process</b>	Camera used on fully manual settings. Photographs taken in RAW image format. Bracketed exposures are taken for each view and those depicting the clearest images are selected to prepare the panoramic image
<b>Preparation of panoramic photographs</b>	PTGUI v12.8 is used to join and cylindrically project the images. Adobe Photoshop 2021 used to correct tonal alterations and create an even range of exposure across the photographs so that the individual photographs are not apparent. Planar panoramic images are prepared using Resoft Windfarm software or Hugin Panorma Stitcher
<b>3D Model/Visualisation</b>	
<b>Topographic height data</b>	Ordnance Survey Terrain 5 (5m resolution). Ordnance Survey Terrain 50 (50m resolution)
<b>Use of coordinates in software</b>	Coordinates are brought in from the surveyed GPS coordinates. Positions checked using aerial photography.
<b>Markers for horizontal alignment</b>	Existing OWF WTGs and their known coordinates.
<b>Markers for vertical alignment</b>	Existing OWF WTGs and their known coordinates.
<b>Rendering software</b>	Resoft Windfarm v.5.2.5.3 (Wind turbines in wirelines and photomontages). Sketchup or AutoCAD Map 3D 2018 (OSPs, Met

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<b>Category</b>	<b>Details</b>
	Mast and jacket foundations). Autodesk 3ds Max 2018. Visual Nature Studio V 3.10.
<b>Limitations</b>	
<b>Terrain data</b>	There may therefore be local, small-scale landform that is not reflected in the data and subsequently the visualisation but may alter the real visibility of the Proposed Development, either by screening theoretical visibility or revealing parts of the Proposed Development that are not theoretically visible.
<b>Movement</b>	Static images are unable to capture the movement within the view or of the WTGs

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## 1.12 Glossary of terms and abbreviations

**Table 1-8 Glossary of terms and abbreviations**

<b>Term</b>	<b>Abbreviation</b>
<b>AOD</b>	Above Ordnance Datum
<b>AONB</b>	Area of Outstanding Natural Beauty
<b>CMOS</b>	Complementary metal oxide semiconductor
<b>Development Consent Order (DCO)</b>	This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
<b>DTM</b>	Digital Terrain Model
<b>Environmental Impact Assessment (EIA)</b>	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').
<b>Environmental Statement (ES)</b>	The written output presenting the full findings of the Environmental Impact Assessment.
<b>FoV</b>	Field of view
<b>GLVIA</b>	Guidelines for Landscape and Visual Impact Assessment
<b>IEMA</b>	Institute of Environmental Management and Assessment
<b>LAT</b>	Lowest Astronomical Tide
<b>LCA</b>	Landscape Character Area
<b>LVIA</b>	Landscape and Visual Impact Assessment
<b>m</b>	metre
<b>MCA</b>	Marine Character Area
<b>MDS</b>	Maximum Design Scenario
<b>MMO</b>	Marine Management Organisation
<b>MWH</b>	Mean High Water mark
<b>MWL</b>	Mean Low Water mark
<b>NCA</b>	National Character Area
<b>NSIP</b>	Nationally Significant Infrastructure Project

<b>Term</b>	<b>Abbreviation</b>
<b>OS</b>	Ordnance Survey
<b>OWF</b>	Offshore Wind Farm
<b>PC</b>	Personal Computer
<b>Preliminary Environmental Information Report (PEIR)</b>	The written output of the Preliminary Environmental Impact Assessment undertaken for the Proposed Development. It was developed to support Statutory Consultation and presented the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development, the assessment approach that was undertaken, and the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.
<b>Rampion Extension Development Limited (RED)</b>	Rampion Extension Development Ltd (the Applicant)
<b>RYA</b>	Royal Yachting Association
<b>SDNP</b>	South Downs National Park
<b>SLVIA</b>	Seascape, landscape and visual impact assessment
<b>UK</b>	United Kingdom
<b>WTG</b>	Wind Turbine Generator
<b>ZOI</b>	Zone Of Influence
<b>ZTV</b>	Zone of Theoretical Visibility

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