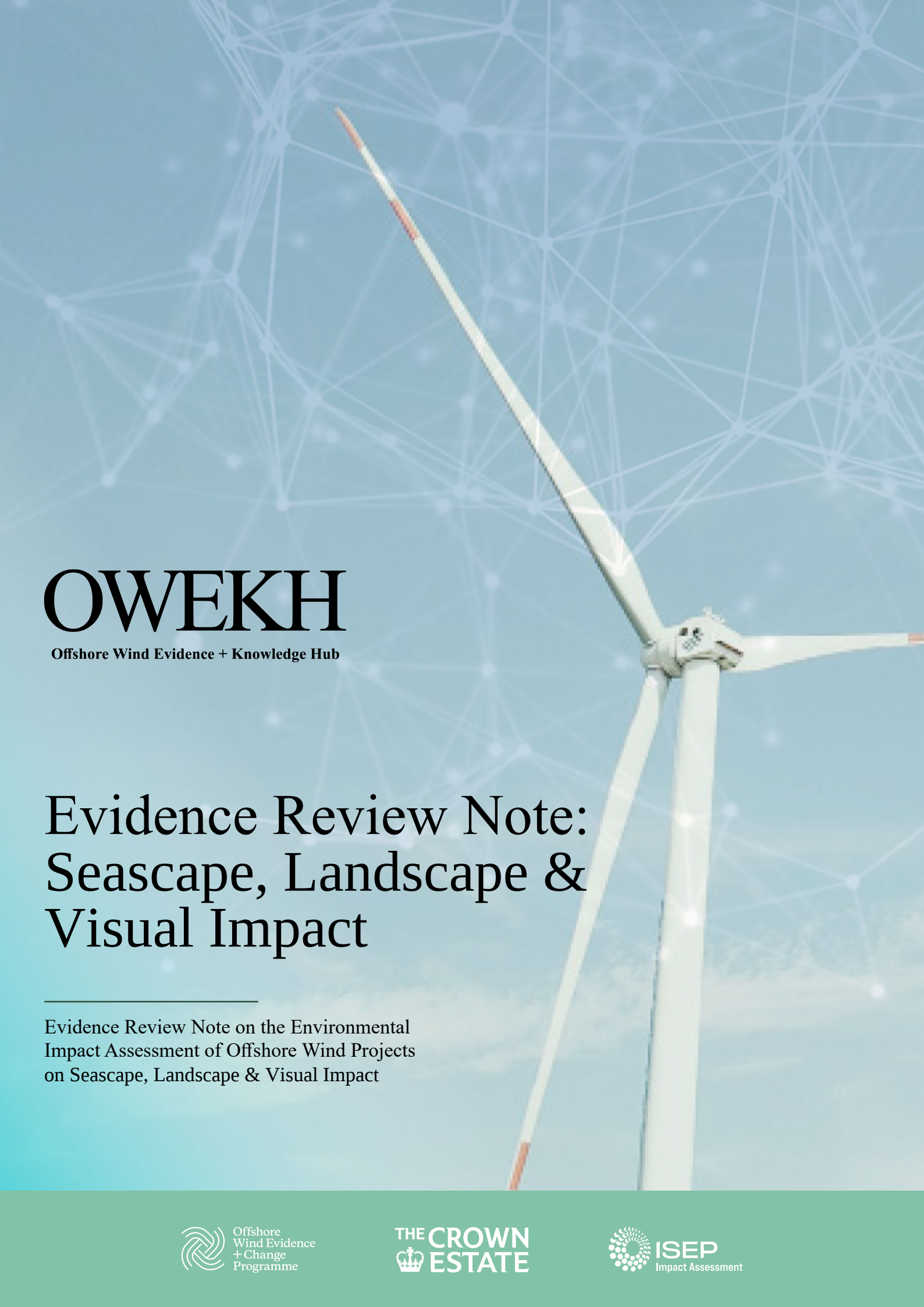


The background of the entire page is a photograph of a white wind turbine against a clear blue sky. A semi-transparent network of white lines and dots is overlaid on the image, creating a digital or interconnected feel. The turbine's blades are visible, with one blade pointing towards the top left and another towards the right.

OWEKH

Offshore Wind Evidence + Knowledge Hub

Evidence Review Note: Seascape, Landscape & Visual Impact

Evidence Review Note on the Environmental
Impact Assessment of Offshore Wind Projects
on Seascape, Landscape & Visual Impact

Acknowledgements

This note has been developed by OWEKH's Seascape, Landscape and Visual Technical Topic Group, led by The Crown Estate and Rufus Howard of the Institute of Sustainability and Environmental Professionals (ISEP), with Secretariat support from AtkinsRéalis.

The document reflects the prevailing knowledge and evidence base at the time of publication, developed through open collaboration between practitioners, industry representatives, consultancies and technical experts. It reflects a shared understanding of current challenges and opportunities in relation to impact assessment for offshore wind.

We would particularly like to acknowledge contributions from the following participants in the OWEKH Seascape, Landscape and Visual Impact Technical Topic Group:

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Author's Note: Contributions to this document are made in a personal or professional capacity and do not necessarily imply endorsement of the entire document by the contributor or by the contributors' respective organisations.

About OWEKH

The Offshore Wind Evidence Knowledge Hub (OWEKH) is a centralised platform that supports evidence-based decision-making in the offshore wind sector. It brings together stakeholders to share best practice, access data, and apply learning and trusted knowledge, helping to inform development, proportionate impact assessment, policy and planning. Find out more at: owekh.com

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Executive Summary

This Evidence Review Note (ERN) provides comprehensive guidance on assessing visual impacts of offshore wind farm (OWF) projects and impacts on seascape and landscape. Drawing on evidence from more than 76 Environmental Impact Assessments (EIAs), along with input from regulators and landscape and visual professionals, the ERN aims to support more effective, proportionate and consistent EIAs.

Seascape, landscape and visual impacts are among the most frequently reported significant adverse effects in OWF EIAs, particularly where projects are located within 50km of the coast. These effects are often difficult to mitigate once projects reach the operational phase, yet most projects with such impacts have still been consented. This highlights the limitations of mitigation and the role of planning judgement in balancing visual impacts with wider energy objectives.

Inconsistencies in Seascape, Landscape and Visual Impact Assessment (SLVIA) terminology, structure, and classification have created challenges for assessors and reviewers. Public understanding of visual impacts also frequently diverges from expert judgments, underscoring the need for clearer communication and more accessible engagement.

This ERN provides a practical framework for more robust and proportionate SLVIA, with six key recommendations:

1. **Standardisation of Scoping:** Adopt a consistent, evidence-based approach to EIA SLVIA scoping across the UK, using a three-tier categorisation (Categories A-C) of impacts. This will improve efficiency and focus assessments on likely significant effects. For offshore developments beyond 50 km from shore, generally scope out SLVIA.
2. **Consistency and Clarity of Reporting:** Standardise chapter structures and impact terminology. This will enhance accessibility and comprehension. Clear signposting and alignment with planning policy terminology will improve engagement among non-specialist stakeholders.
3. **Proportionate Reporting and Enhanced Engagement:** Ensure clear and concise reporting, focused on significant effects, with technical detail in appendices. Embrace digital tools, such as GIS-based maps, interactive and dynamic visualisations, documentary media and web-based reporting, to enhance clarity, usability and engagement (including public engagement). Aim for reports around 30-40 pages in length.
4. **Strategic Approach to Risk Assessment:** Address significant SLVIA effects at a strategic level through regional seascape sensitivity assessments to guide site selection and avoid high-sensitivity areas.
5. **Regionalised and Threshold-Based Cumulative Effects Assessment:** Evaluate cumulative effects through regional frameworks and perceptual thresholds, moving beyond turbine counts to more meaningful indicators of visual change.

6. **Strategic Compensation:** Where significant adverse effects are unavoidable, work with stakeholders to identify appropriate compensation measures that enhance seascape and landscape understanding or stewardship and align with marine planning objectives.

By implementing these recommendations, the OWF sector can reduce costs, increase certainty, reduce landscape harm and streamline the consenting process. Clearer, more consistent and proportionate assessments will strengthen engagement, promote good design and ensure the UK's rich seascapes and landscapes are protected along with its ambitions for clean energy growth.



Picture courtesy of Principle Power

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Ben Barden, 2022

List of Abbreviations and Acronyms

Acronym / Name / Abbreviation	Description
Cadw	Welsh Government's historic environment service
CEMP	Construction Environmental Management Plan
CES	Crown Estate Scotland
DAERA	Department of Agriculture, Environment and Rural Affairs (NI)
DCO	Development Consent Order
Defra	Department for Environment Food and Rural & Affairs
EIA	Environmental Impact Assessment
ES	Environmental Statement
IEMA	Institute of Environmental Management and Assessment (now ISEP)
ISEP	Institute of Sustainability and Environmental Professionals (formerly IEMA)
IEP	Industry Evidence Programme
GLVIA3	Guidelines for Landscape and Visual Impact Assessment (third edition)
LI	Landscape Institute
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
NGO	Non-Governmental Organisation
NRW	Natural Resources Wales
oCEMP	Outline Construction Environmental Management Plan
OWF	Offshore Wind Farm
OWEC	Offshore Wind Evidence and Change Programme
OWEER	Offshore Wind Environmental Evidence Register
OWEKH	Offshore Wind Evidence and Knowledge Hub
PINS	Planning Inspectorate
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
SEPA	Scottish Environmental Protection Agency
SLVIA	Seascape, Landscape and Visual Impact Assessment
SNCB	Statutory Nature Conservation Body
TCE	The Crown Estate
ZTV	Zone of Theoretical Visibility
ZVI	Zone of Visual Influence

Glossary of Terms

Term	Meaning
Aspect	The factor (i.e. seascape, landscape, visual impact) that may be impacted by the direct and indirect significant effects of an OWF.
Impact	A potential change brought about by proposals. An impact can be broad or specific, e.g. on a broad landscape or a single tree. It can be adverse or beneficial.
Effect	The assessment of the consequence of an impact on a receptor. It should take the context into account , including the characteristics of the impact (i.e. duration, magnitude, reversibility, certainty, direct, indirect, cumulative, transboundary etc.), the presence and nature of receptors (i.e. sensitivity, importance, rarity, legal protection etc.) and any other factors or considerations (i.e. if the effect is beneficial or adverse for the receptor).
Matter	A subdivision of an aspect, such as a specific impact on a receptor during a particular phase of development.
Outline Construction Environmental Management Plan (oCEMP)	A document included at the pre-consent stage of an application which sets out the responsibilities and environmental standards that the planning applicant (and any contractors) will comply with. An oCEMP serves as a framework and baseline from which the final Construction Environmental Management Plan (CEMP) will be developed post-consent.
Phase	The phase of a project lifecycle. Typically divided into construction, operation and decommissioning, to differentiate the changing impacts of a project across its phases.
Receptor	Something which is being impacted. A broad category, which can include human beings, species, receiving environment, resources, or a specific entity, location or asset.
Source	Any origin or point of emission of a physical, chemical, biological or social factor that may cause an environmental impact.
Significance	A binary determination of whether an effect on a receptor is substantial and material, taking into account the context of the impact, receptor and effect(s) identified, based on a scale of impact and threshold of significance.

1. Introduction

1.1 Overview of OWEKH

The Offshore Wind Evidence and Knowledge Hub (OWEKH) has a mission to facilitate and streamline the consenting process for the offshore wind sector through a comprehensive, sector-wide online portal. This portal (owekh.com) offers a unified access point for critical data and information, including the latest guidance and best practice documents. Supported by a network of key stakeholders, including regulators, government departments, industry and practitioners, the portal fosters collaboration and data sharing across the offshore wind sector.

OWEKH is sponsored by The Crown Estate and supported by:

- Department of Agriculture, Environment and Rural Affairs (DAERA) Northern Ireland
- Department for Energy Security and Net Zero (DESNZ)
- Department for Environment, Food & Rural Affairs (DEFRA)
- The Institute of Sustainability and Environmental Professionals (ISEP)
- Natural Resources Wales (NRW)
- Marine Management Organisation (MMO)
- Offshore Wind Evidence and Change (OWEC) Programme
- Offshore Wind Industry Council (OWIC)
- Planning Inspectorate (Observer)
- Welsh Government.

The portal's data component provides access to a diverse range of datasets from public, private, and non-governmental organisation (NGO) sources, all relevant to OWF development. Meanwhile, the knowledge component analyses this data to generate evidence-based insights and guidance.

By consulting with key stakeholders including regulators, industry and statutory bodies, OWEKH ensures that these insights are translated into high-quality and actionable Evidence Review Notes (ERNs). ERNs aim to bring consistency, efficiency, and standardisation to the assessment, planning and development of OWF projects.

An evidence-led approach supports impact assessments and informs consenting decisions by offering clear and consistent guidance which can be easily and widely disseminated to interested parties. OWEKH's efforts are designed to accelerate the sustainable growth of offshore wind energy, aligning with the UK Government's Clean Power objectives. This may also link to emerging requirements of Environmental Outcome Reports (EOR).

This Evidence Review Note (ERN) is intended as a referenceable best practice guide which distils key insights from a review of Environmental Statements/Reports, submitted for offshore wind projects. It is intended to support strategic decision-making across the sector—by regulators, developers, consultants, and advisors—through the identification of common assessment practices, recurring challenges, and evidence gaps.

The findings are designed to inform more consistent and effective environmental assessments and to guide future planning and engagement. This document should be used alongside project-specific evidence and expert input.

1.2 Introduction to the Seascape, Landscape and Visual Impact ERN

This ERN provides the latest guidance for the EIA of OWF projects on Seascape, Landscape and Visual Impact.

Section 1: Introduces OWEKH and the ERN concept.

Section 2: A summary of the key evidence that has been reviewed to inform recommendations.

Section 3: Key recommendations and guidance for future projects.

Section 4: Calls for further research and evidence gaps.

Section 5: A summary of the key recommendations.

Section 6: Members of the Technical Topic Group who have contributed to the creation of the ERN.

Section 7: Key references and recommended further reading.

Annex A: OWF projects that have published EIAs.

Annex B: Guidance on writing a Seascape, Landscape and Visual Impact chapter for an Environmental Statement (ES) or Environmental Report.

Annex C: Recommended standard wording for mitigations for outline Construction Environmental Management Plans (oCEMP), commitment registers, conditions and requirements.

This ERN should be read in conjunction with Evidence Review Note : Environmental Impact Assessment, which provides overarching guidance on the structure and principles of EIA assessment and reporting across all offshore wind aspects.

Based on the Industry Evidence Program (IEP)¹ pilot and subsequent discussions with key stakeholders across the sector, there is wide agreement that current EIA practices can be significantly improved. More strategic, coordinated efforts are necessary to advance the practice of EIA, ensuring it is effective and efficient. Translating these improvements into actionable steps requires robust evidence and thorough scrutiny to secure acceptance from all stakeholders and to produce recommendations that are widely endorsed.

The ERN serves as a platform to address these needs by providing a standardised analysis of existing data, identifying key findings, and offering actionable insights by focusing on several key areas: Evidence-Based Practice; Proportionate Scoping; Avoiding Duplication of Effort; Standardisation and Consistency; Collaboration and Consensus; Continuous Improvement.

¹ IEMA, TCE, RHDHV (2018) Industry Evidence Programme Offshore Wind Farms - Pilot Industry Evidence Base.

2. Review of Evidence

2.1 Methodology

The review of evidence to support this Evidence Note consisted of three key elements:

1. A review of previous SLVIA undertaken as part of the EIA process for UK OWF.
2. A review of other relevant reports and research related to SLVIA for OWF, e.g. decision notices, monitoring reports, academic and industry research, government guidance.
3. Stakeholder engagement with leading experts, consultees and regulators of the SLVIA of offshore wind.

Where documents have been referenced, the aim is to ensure a majority of these are available and accessible within OWEKH.

The EIA review looked at the identified impacts and proposed mitigation from the Environmental Statements² from 76 offshore wind farm EIAs completed in the UK that sought to assess and report on the projects' impacts on seascape, landscape and visual impact. A full list of the OWF EIAs included in the review are contained in **Annex A** of this Evidence Review Note.

2.2 Assessment of Seascape, Landscape and Visual Impacts

EIA regulations are in force across all parts of the UK for major classes of development (including OWF) and require the identification and description of any likely significant effects of a development on cultural heritage, including architectural and archaeological aspects, and landscape. Typically for offshore wind, effects on these factors are covered in two primary chapters within an ES: Cultural Heritage and Archaeology, and Seascape, Landscape and Visual Impact Assessment (SLVIA).

If there are likely significant effects on the setting of a Protected Landscape³, SLVIA chapters are relevant. The exact title of these chapters may vary, and some are subdivided into onshore and offshore volumes depending on the project. However, between these two chapters the effects on seascape, landscape and visual impacts are normally assessed and reported.

The SLVIA chapters are usually carried out in accordance with best practice industry guidance, such as the Guidelines for Landscape and Visual Impact Assessment (GLVIA3⁴) and take account of national and sectoral guidance.

² Environmental Statement (ES) is the term used in Wales and England; the term 'EIA Report' is used in Scotland. Where this Evidence Review Note refers to an ES, this can also be taken to refer to EIA Reports for Scottish projects.

³ 'Protected Landscape' is the term used by Defra to refer to areas designated for conservation and natural beauty, including National Parks and National Landscapes (formerly known as Areas of Outstanding Natural Beauty). We will use the term throughout this document.

⁴ LI and IEMA (2013) Guidelines for Landscape and Visual Impact Assessment (GLVIA) 3rd Edition.

National sources of strategic guidance are available. In Wales, further evidence has been developed to support the siting of OWF in relation to landscape and visual sensitivity. The Natural Resources Wales (NRW) Evidence Report 330 (2019) provides guidance and a visual sensitivity mapping approach which sets out preferred buffer distances based on turbine height, seascape sensitivity and designation status. These include buffer zones of up to 44km for large turbines (up to 350m), particularly where receptors lie within Protected Landscapes.⁵

In England, the OESEA Seascape and Visual Buffer Study (2020)⁶ sets out suggested buffers in Table 13.4 of the report. These are strategic-level indicators of where effects are likely, and do not necessarily represent 'no-go' areas for development. Any development within these areas would require further assessment and consultation with statutory bodies.

In addition to the primary requirements set out by the EIA regulations, there is a range of other relevant legislation, policies and guidelines for the assessment of OWF on SLIVA, including:

Legislation and conventions

- Town and Country Planning (Environmental Impact Assessment) Regulations 2017
- The Marine Works (Environmental Impact Assessment) Regulations 2007
- The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
- The Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017
- The Marine Works (Environmental Impact Assessment) (Northern Ireland) Regulations 2007
- Environmental Assessment of Plans and Programmes Regulations 2004 (SEA Regulations) – underpinning strategic seascape and landscape consideration.
- European Landscape Convention (Council of Europe, 2000) – ratified by the UK. Establishes landscape (including seascape) as an area of public interest.
- Marine and Coastal Access Act 2009 – establishes marine planning and includes provisions on seascape and visual amenity.
- Planning (Listed Buildings and Conservation Areas) Act 1990– for settings of heritage landscapes and views where visual and cultural value overlap.

National policy

- Department for Energy Security and Net Zero (2023, updated January 2024). *National Policy Statement for Renewable Energy Infrastructure (EN-3)* – Sections 2.6 (Landscape and Visual) and 2.8 (Seascape).
- Department for Energy Security and Net Zero (2023). *Overarching National Policy Statement for Energy (EN-1)* – Paragraphs 4.2 and 5.9 on landscape, visual and cumulative effects.
- Department for Energy Security and Net Zero (2023). *National Policy Statement for Electricity Networks Infrastructure (EN-5)* – landscape and visual considerations for onshore connection infrastructure.

⁵ Protected Landscapes (National Parks, National Landscapes, Scenic Areas and Areas of Outstanding Natural Beauty) relevant authorities are under a duty to either 'have regard' (Scotland, Wales and NI) or 'seek to further' (England) their statutory purposes. Guidance on how relevant authorities should discharge the seek to further duty can found at [Guidance for relevant authorities on seeking to further the purposes of Protected Landscapes - GOV.UK](#)

⁶https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/896084/White_Consultants_2020_Seascape_and_visual_buffer_study_for_offshore_wind_farms.pdf

- Department for Transport (2012). *National Policy Statement for Ports* – Consideration of visual impacts of port-related energy infrastructure.
- HM Government (2011). *UK Marine Policy Statement* – Establishes shared UK principles for seascape protection and integration of landscape and seascape character in marine planning.
- Marine Scotland (2015). Scotland's National Marine Plan.
- Welsh Government (2019). *Welsh National Marine Plan*.
- Department of Agriculture, Environment and Rural Affairs (2018). *Marine Plan for Northern Ireland*.
- Scottish Government (2023). *National Planning Framework 4* – Policies 4, 5 and 32 on landscape, seascape and nature recovery.
- Welsh Government (2024). *Planning Policy Wales* (Edition 12) – Chapter 6, Distinctive and Natural Places, including National Parks, National Landscapes and coastal character.

Guidance

- Landscape Institute and IEMA (2013). *Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3)*. Subsequent clarifications and technical guidance notes issued by the Landscape Institute.
- Landscape Institute (2024). Notes and Clarifications on Aspects of the Third Edition Guidelines on Landscape and Visual Impact Assessment (GLVIA3). LITGN-2024-01.
- Natural Resources Wales (2015). *National Seascape Assessment for Wales*. NRW Evidence Report No. 80.
- Natural Resources Wales (2019). *Seascape and Visual Sensitivity to Offshore Wind Farms in Wales – Strategic Assessment and Guidance (Stages 1–3)*. NRW Evidence Reports 315, 330, 331.
- Natural Resources Wales (2022). *Marine Seascape Character Assessment for Wales*.
- Marine Management Organisation (2019). *An Approach to Seascape Sensitivity Assessment*. MMO Project No. 1204.
- NatureScot (2021). *Guidance on Assessing the Impact of Offshore Wind Farms: Seascape, Landscape and Visual Impact Assessments (SLVIA)*.
- NatureScot (2024). *Guidance on Aviation Lighting Impact Assessment*.
- NatureScot (2025). *Coastal Character Assessment*.
- Department of Agriculture, Environment and Rural Affairs (2013). *Seascape Character Assessment for Northern Ireland*.
- Historic England (2021). *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)*.
- Natural England (2020). *National Character Area (NCA) Profiles*.
- Planning Inspectorate (2025). *Advice Note 17: Cumulative Effects Assessment of Nationally Significant Infrastructure Projects*.
- Renewable UK (2013). *Cumulative Impact Assessment Guidelines – Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms*.
- Scottish Government (2013). *Planning Advice Note 1/2013: Environmental Impact Assessment*.

2.3 Scope of Review

SLVIA chapters that include seascape and landscape normally assess visual impacts from the marine and coastal (onshore and offshore) effects and consider how these interact with and effect the landscape and seascape. Effects on views, as perceived by people, are clearly distinguished from (although closely linked to) effects on seascape and landscape, and are a consequence of the latter changing. Seascape, landscape and visual assessments are therefore separate but linked processes.

For the purpose of the OWEKH review, this ERN has focused on the marine and coastal aspects of SLVIA, namely the assessment for seascape and views of the marine environment. Landscapes are included where the impacts on the landscape arise from the offshore elements of the OWF project, for example on coastal landscapes and Protected Landscapes where interaction with the sea has potential to be significantly affected.

The review does not cover onshore landscape and visual impacts arising from transmission infrastructure located inland.

SLVIA was identified as a topic of EIAs for 75 wind farms included in the review. In five cases (East Anglia Three, Hornsea Four, Norfolk Boreas, Norfolk Vanguard, Dogger South) the topic was either entirely scoped-out or the offshore elements of the project were scoped-out. One project (Seagreen One A) focuses on the transmission assets only and therefore has no SLVIA chapter. Based on the review, 2504⁷ separate post-mitigation impacts were listed, which can be broadly summarised as:

- Visual amenity and views.
- Seascape character.
- Seascape quality.
- Landscape effects from offshore infrastructure.

We have concentrated on impacts arising from the offshore elements of OWF. This includes onshore designations and coastal landscapes where the interaction with the offshore elements has the potential to create significant impact. It does not include the impacts from onshore elements such as overhead transmission lines, onshore substations or convertor stations.

This is because:

- The assessment of landscape and visual amenities onshore is already well documented in guidance, given the longer duration and quantity of onshore assessments carried out over time (primarily in accordance with GLVIA3 and its predecessors).
- The nature of the offshore environment and OWF sites are such that specific guidance on assessment and reporting on the SLVIA for OWF is worthy of specific consideration as a standalone topic.

Coastal designations

Based on feedback from stakeholders, particular attention should be given to National Parks (including the Broads), National Landscapes, National Scenic Areas and Areas of Outstanding Natural Beauty where the Protected Landscape includes, or closely abuts, the coast. These Protected Landscapes are amongst the most sensitive receptors due to their statutory purposes: conserving and enhancing natural beauty, and, in the case of National Parks, promoting understanding and

⁷ As with other topics with many receptors, the sheer number of impacts recorded is related to how assessors have grouped effects and receptors.

enjoyment of their special qualities. The setting of these Protected Landscapes, including views over adjacent seascapes, may be a critical part of their special qualities.

Offshore wind developments visible from such landscapes may give rise to significant effects, and any impacts on their character or setting should be explicitly assessed using the best available evidence. This includes local landscape and seascape character assessments and studies, and Protected Landscape Management Plans, which incorporate evidence on the reason for designation.

Protected Landscapes

Analysis should include a consideration of how views out to sea contribute to the character, qualities, and statutory purposes of the designation. Wherever possible, this should be supported by reference to relevant Management Plans, Statements of Significance, or Landscape Character Assessments developed by the Protected Landscape body.

Particular sensitivity is attributed to views from Protected Landscapes, such as National Parks and National Landscapes (AONBs), as well as National Scenic Areas, Heritage Coasts and coast paths. NRW's strategic seascape sensitivity mapping help identify and prioritise these receptor areas during baseline study and impact prediction.

Historic seascape

Historic Seascape Characterisation (HSC) is distinct from seascape and visual impact assessment. It extends the principles of Historic Landscape Characterisation (HLC) to seascapes. As with HLC, HSC follows a process of creating generalised and descriptive information about the cultural and historic character of an area or a topic, with the aim of providing a broad understanding of the essential characteristics of parts of the historic environment, such as the coastal and marine seascapes.

The review of the 26 most recent OWF assessments showed that only two of the ESs covered HSC in the SLVIA chapter. While other chapters briefly reference HSC, it is largely to refer the reader to the chapter covering Marine Historic Environment, or in relation to the guidelines for assessment use for the baseline methodology. In Wales, there has not been a comprehensive programme of Historic Seascape Characterisation to the same extent as in England. But data on heritage assets is held by relevant bodies (e.g. RCAHMW, Cadw) and there have been some broad-scale characterisations of the Liverpool Bay and Severn Estuaries. On this basis, and following the coverage with EIA reporting, the effects on historic seascape are covered in ERN Marine Historic Environment⁸ and are cross-referenced in this ERN where appropriate.

⁸ For a review of cultural heritage and archaeology see OWEKH Evidence Review Note on Marine Historic Environment.

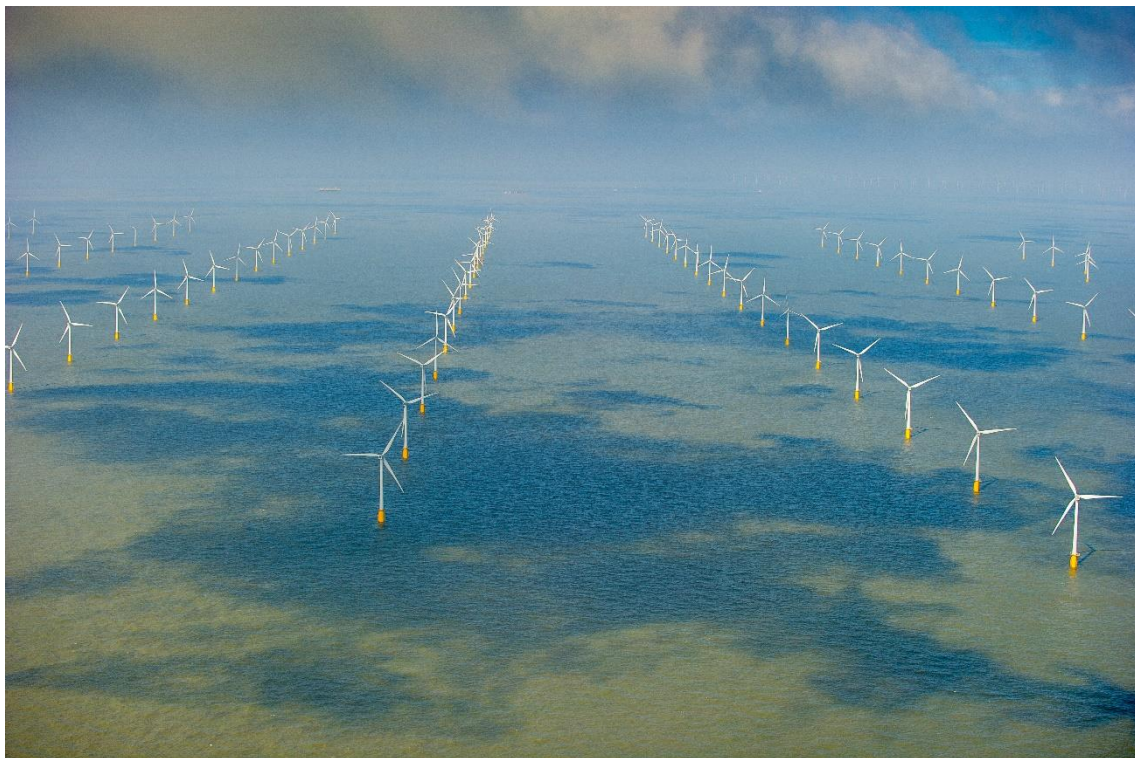
2.4 Scoping-Out of Seascape, Landscape and Visual Impact Assessment Entirely

Our review of recent ES chapters found that three projects (Dogger South, Norfolk Boreas and Norfolk Vanguard) had scoped out offshore effects for all phases, due to distance from the shore. They only considered the onshore elements (landfall, onshore cable route, onshore project substation, onshore cable routes) in their chapters.

At present, each project is assessed on a case-by-case basis, considering factors including size, layout, weather and atmospheric conditions, viewer sensitivity, receptor locations and cumulative impacts with other developments.

While there is currently no standard distance at which seascape and visual effects would be scoped out of an EIA, common practice suggests that beyond 50km⁹, the visual impacts of an OWF development are generally considered negligible for most receptors. In Wales, a study was commissioned and carried out by White, S. et al. (2019) which reviewed distance from shore, visibility, and likelihood of scale of visual effects. Based on White et al. (2019) Stage 1 Ready Reckoner, for turbines up to 301-350m tip height, visual magnitude of effects is likely to be low beyond ~44 km offshore.

The 44km figure matches well with the general rule of thumb of 50km cited above. The White S. et al. emphasise that these distances are indicative and do not represent strict 'no-go' zones. Instead, they are a strategic planning tool to highlight where effects are more likely and where further detailed assessment is required.



Jason Hawkes, 2013

15 | ⁹ See Sullivan, R. G., Kirchler, L. B., Cothren, J., & Winters, S. L. (2013).

2.5 Typical SLVIA Methodology

From the review, it is evident that the SLVIA chapter of an EIA report typically describes the existing environment with regard to the seascape, coastal landscape and visual resource. It assesses the potential impacts of the OWF during the construction, operation and maintenance, and decommissioning phases, although in some recent cases, details of the construction and decommissioning phases are not given (8 out of 26 recent ES). For these cases, it is assumed that due to the temporary nature of the visual impacts during construction and decommissioning, these impacts are unlikely to be significant, especially compared with the operational phase, where turbines create the main effects and cover a much longer duration.

SLVIA methodology is typically based on GLVIA3, published jointly by the Landscape Institute and IEMA (now ISEP). It is based around determining the potential *significance of impact* of a proposed OWF development. Although the terminology varies (see section 3.2.2), typically, the impacts that rate as 'moderate' or greater are generally seen as cause for concern and further mitigation. Significance of impact is broadly determined by a combination of two broad variables: the *magnitude of change* and the *sensitivity of receptors*.

GLVIA3 provides further guidance, as well as associated clarifications and technical notes published by the Landscape Institute, and supplemented by national guidance on assessment and visualisations (see section 7).

The types of impacts are relatively consistent across all SLVIA chapters. They typically fall into:

1. Visual amenity and views.
2. Seascape character.
3. Seascape quality.
4. Landscape effects from offshore infrastructure.

Magnitude of change considers the scale of the visual change that will arise as the result of the proposed development and is guided by three assumptions:

- A Maximum Design Scenario (MDS)¹⁰ which assumes and accounts for the greatest potential impact on receptors. For example, a MDS will propose the maximum allowable turbine height (e.g. 355m above LAT blade tip height and rotor diameter of 310m). This allows for the 'worst case'¹¹ in terms of potential impacts, while leaving flexibility to make later adjustments that may not be predicted at the time of application.

¹⁰ MDS is sometimes used alongside terms such as project parameters, or a parameter plan, that explains the maximum and minimum parameters of certain elements of the project which the developer wishes to maintain some flexibility within the permission with regard to the final design. For example, permission may be sought for up to a certain number of turbines with a maximum blade tip height. This approach to using parameters is often referred to in EIA under the name of a 'Rochdale Envelope', named after a legal case in the UK (Rochdale MBC v. SSE, 1977), that the framework for assessing the **worst-case scenario** within those parameters.

¹¹ Note that under a Rochdale or parameter-based approach, individual ES chapters, and even individual impacts within chapters, may use a different combination of parameters to determine the 'reasonable worst case' for the purpose of assessment. By 'worst-case' this means the combination of parameters which is predicted to give rise to the most adverse effects. The term 'reasonable worst case' is used to rule out worst-case combinations of parameters which are considered to be unreasonable, in the sense that they are impossible or extremely unlikely.

- A Zone of Visual Influence (ZVI) or Zone of Theoretical Visibility (ZTV) are often used. These are typically within 50km¹² of the boundaries of the development where potential visual impacts on receptors need to be considered.¹³ Distances greater than this are generally scoped out of the assessment at the consultation stage as having no potential visual impact.¹⁴
- A 'worst case' assumption of 'excellent' in terms of atmospheric visibility conditions.

On the basis of these assumptions, magnitude of change is determined by analysis informed by several geographical viewpoints agreed during early stakeholder consultation. Viewpoints will normally be selected to represent particular visual receptor groups, or valued views, with the involvement of the Local Planning Authority and other relevant bodies (e.g. NRW, Nature Scot, Natural England, DAERA) to bring in local knowledge. Formally valued viewpoints are those which have received formal recognition (e.g. on ordinance survey maps, signposts, LCAs, SCAs or tourism literature), are identified in Protected Landscape Management Plans, Seascape Landscape Character Assessments or Landscape Character Assessments. They may have informal recognition for being well-known or appreciated viewpoints at the local level.

Magnitude of change from these viewpoints is judged on the basis of:

- Size or scale of visible change (i.e. the size and visibility of turbines and jacket foundations from viewpoints).
- Geographical extent of visible change, including width of horizon spread (i.e. the size of onshore area from which the development is visible).
- Relationship of the visible change to key subjects in views (i.e. whether they are close to or obscuring focal points within the view).
- Duration and reversibility of visible change (i.e. how long the development will be in operation, and how reversible its effects are when decommissioned).

The assessment of effects also takes account of:

- Cumulative impacts of other existing or proposed OWF developments. These impacts could be experienced as combination effects (where developments lie within the same field of view for a static viewer), succession effects (where other developments are visible but not within the same field of view of a static viewer) or sequential effects (where developments are visible sequentially by a viewer in motion).
- Consideration of any potential transboundary effects regarding other European Economic Area states.

¹² In Wales, NRW guidance (NRW Report 330) recommends lower magnitude visual effect buffers of 22–44 km, depending on turbine height and designation sensitivity. Therefore, professional judgment should be applied, and Welsh seascape guidance consulted when defining scoping distances.

¹³ Stakeholders have emphasised that the cut-off distances for effects are not always the same and can depend on contextual factors such as elevation of viewpoints in mountainous areas, increasing size of turbines, and sensitivity to night lighting effects.

¹⁴ In England, EN-3 refers to this report in relation to buffers which applies to England and was commissioned by Defra: OESEA seascape and visual buffer study 2020; the report notes that the suggested buffers are 'a strategic level tool to identify where effects are likely and do not necessarily suggest no-go areas for development. These areas would need to be subject to careful further assessment and consideration should development be proposed within them.' The suggested buffers are set out in the report in Table 13.4 (pp. 116-117).

Typically, magnitude of change is rated on a scale from 'negligible' to 'high', but there is great variation in the scale and terminology used among assessments (see section 3.2.2).

Sensitivity of receptors is an expression of the value placed (by society) on the landscape or seascape character, or the value placed on the view by the receptor. Such judgements are made on the basis of the location and activity of a given visual receptor. However, landscape or seascape character effects are judged on the effect on the key characteristics, and on identified components of the character receptor in question. In terms of Protected Landscapes, special qualities or key characteristics may be receptors that are highly sensitive, as the expression of the natural beauty of the Protected Landscape.

Combined, these are used to determine the extent to which attention or interest may be focused on the seascape view or visual amenity. For example, residents or walkers whose attention is more trained on seascape views than workers, are deemed more sensitive to alterations in the seascape.

For this reason, a variety of receptor locations are considered:

- Major or minor settlements and residents near their homes in rural areas.
- Recreational routes.
- Road routes.
- Train routes.
- Public and (where accessible to the public) private outdoor recreational facilities (e.g. golf clubs or beaches).

As well as a variety of receptor activities:

- Residents.
- Workers.
- Those in transit.
- Walkers.
- Those engaged in outdoor recreational activities.
- Tourists.

Impacts considered include the effects of the constructed wind farm, as well as increases in vessel movements or effects on the views of other sea users. More recent assessments are required to consider the effect of lighting at night, which may have visual impacts on receptors, and may affect the dark night skies of a Protected Landscape, with effects on landscape and seascape character.

Typically, sensitivity of receptor is rated on a scale from 'low' to 'high', but there is great variation in the scale and terminology used among assessments (see section 3.2.2). Assessments of magnitude of impact and sensitivity of receptor are combined to determine an overall assessment of the significance of impact and effect. It should be noted that these types of matrixes are illustrative rather than definitive, and supplement a range of contextual factors that competent experts will take into account while assigning significance to effects.

Significance should ideally be presented as a binary determination rather than a scale. For example, an effect may be assigned a level of effect, from negligible to major, with certain effects (typically in the medium and major categories) being clearly described as significant. Some authors do use the word significance in the context of a scale (negligible significance, minor significance, moderate significance etc) but this should be avoided as it reduces clarity.

Within the cumulative assessment, a larger number of effects of a magnitude could cumulatively lead to a significant effect, when each in isolation might not be significant. Again, terminology varies greatly among assessments.

It should be noted that GLVIA3 and the Landscape Institute's clarification notes on GLVIA place great emphasis on the application of professional judgement in the allocation of significance. In SLVIAs, an overly mechanistic reliance on a matrix can be avoided through narrative explanations of the rationale underlying the assessment of each landscape and visual receptor.

2.6 Typical Results and Mitigations

In contrast to many other EIAs, where the potential for significant adverse impacts is identified, mitigation measures are often **not** set out beyond the measures embedded at design stage for seascape. This is, in part, due to the nature of the impacts, as the assessment for the Rampion OWF states, *"No measures are available to completely mitigate the significant effects on views from coastal settlements, the SDNP and Heritage Coast; however, measures are embedded as part of the Rampion 2 design to avoid, minimise or reduce any significant environmental effects on seascape, landscape and visual receptors, as far as possible."*

Standard embedded mitigations include those identified as good or standard practice, as well as mitigations that have developed as part of the design process through the course of the EIA development. They often include:

- Completion of a Preliminary Environmental Information Report (PEIR)¹⁵ or early assessments to inform the consultation process and identify potential embedded mitigation requirements. This can include limiting the size or scale of the array, or trimming the end of a development area to achieve a greater distance from shore, or to avoid spilling into an undeveloped seascape area, where this does not significantly impact the electricity generating output required from the project.
- Limitations on distance from the closest part of the coastline and scoping out of seascape, landscape and visual effects beyond a set distance from the shore.
- Responding through siting or design to particular sensitivities of the seascape or landscape from which the turbines would be viewed.
- Consideration of the aesthetic layout of the wind farm during the design phase, where relevant (i.e. where the OWF is not so far from shore as to render the mitigation irrelevant).
- Adapting the colour of turbines to minimise seascape and sky backdrop impact (typically light grey).
- Limitations on blade tip height and maximum rotor diameter.
- Location, design, and visual appearance of substations for development are subject to structural study and electrical design are completed post-consent. Clear parameters need to be set out, against which Local Authorities and stakeholders can make informed post-initial consent decisions to avoid further adverse effects.
- Sub-sea cable ducts drilled using horizontal directional drilling (HDD) techniques, where appropriate.
- Design principles of earlier developments in the location included within the design for any further development in that location.
- Compliance with legal requirements for shipping, navigation, aviation marking and lighting, while adhering to relevant industry guidance for limiting and minimising lighting and marking (including colour) impacts, sets the parameters for the SLVIA. Mitigations involve dimming navigation light intensity, when weather permits, and adaptation of beam direction intensity to minimise impact on coastline receptors.¹⁶

¹⁵ For Development Consent Order EIAs in England.

¹⁶ The National Policy Statement for Renewable Energy Infrastructure (EN-3) and Energy (EN-1), and equivalents, provide further guidance on OWFs. For instance, in EN-3, there are references to good design (section 2.5) and good design in relation to mitigation (2.7.60) and paragraphs on PLs and settings thereof under a section on seascape and visual effects (2.8.204 to 2.8.212).

In comparison to many other EIA chapters, there is a greater tendency for visual effects to be reported as significant effects. SLVIAs are consistently one of the most frequent of chapters to report significant adverse effects. For example, out of the most recent 26 OWF assessments reviewed, 25 concluded that there would be major (significant) effects during the operational phase, while five concluded there would be moderate significant effects during this phase (which in most cases were not mitigated).

This is not to suggest that SLVIAs are over-reporting significant effects. To the contrary; reviewers often report that SLVIAs have under-reported significant effects. The review of 76 OWF ES confirms that significant adverse effects from seascape and visual impacts are a likely to be a result of the development of OWF projects within clear visibility of the coast. However, the identification of potential or likely significant adverse effects in itself does not mean that a project should not receive consent. As the EIA is not a decision-making tool, but a decision support tool,¹⁷ the final decision makers (such as Secretaries of State) will weigh up the EIA findings along with national planning policy and other legal and policy frameworks.

Despite many cases concluding significant effects on SLVIA for OWF, there is only one confirmed case of a project failing to get consent that explicitly referenced SLVIA as part of the decision: Navitus Bay.¹⁸

Figure 1: Excerpt from Navitus Bay decision notice

The Case against making the Development Consent Order

15. The ExA addresses a number of issues that it considers weigh against granting development consent. The Secretary of State notes that the weight attached by the ExA to these issues varies from minor adverse to significant adverse.
 - (i) seascape, landscape and visual impact
16. The ExA considered that both the Application Development and the TAMO would produce significant and relatively long term (25 years) impacts on sites designated as Areas of Outstanding Natural Beauty (AONB) and on Heritage Coasts during the operation of the project. In particular, the ExA concluded that the scale and location of the project would affect important special qualities of the AONBs over a widespread area of coastline and that this carried significant weight against the grant of consent for the project in both Application Development and TAMO formats.

¹⁷ See EN0 – EIA for a more detailed discussion on the purpose, methods and limitations of EIA.

¹⁸ [Navitus Bay decision notice](#).

2.7 Analysis of EIA Data and Reports

The Industry Evidence Programme (IEP)¹⁹ undertook a review of OWF impact assessments up to 2018, to develop an evidence base to drive proportionate impact assessment in the sector. As part of this study, the ES of 50 different wind farms were reviewed, and consultation held with key stakeholders.²⁰ In 2024/2025, the IEP review was updated to include an additional 26 EIAs for OWFs.

The methodology was based on a review of the original ES and identifying and aggregating the findings to establish trends in impact identification, mitigation and monitoring. Further work was undertaken to review Decision Notices to assess the conditions and requirements imposed. Where possible, post-consent monitoring reports were used to further inform implementation and post-implementation of mitigations, requirements and conditions.

2.8 Additional Evidence

ERNs are designed to be live documents as updates, new information, data, research and good practice become available. Therefore, in addition to EIAs, the ongoing review of evidence will consider any reports and data arising from the decision notices, published monitoring reports, WSIs, academic research, government and non-governmental guidance. Including the key references provided in Section 7, the main industry-specific guidance can be found in GLVIA3 and associated clarification notes, along with the Landscape Institute Technical Guidance Notes, 02/21 (LI TGN 02/21).

2.9 Expert Stakeholder Input

In addition to documentary sources, the review included stakeholder feedback from workshops and questionnaires, individual and organisational evidence, and expert opinion. A list of organisational representatives that support this ERN for use as guidance for future OWF EIA in the UK is in Section 6 of this report.



Picture courtesy of Principle Power

¹⁹ IEMA, TCE, RHDHV (2018) Industry Evidence Programme Offshore Wind Farms - Pilot Industry Evidence Base.

²⁰ Ibid.

3. Guidance

3.1 EIA Scoping of Seascape and Visual Impact

The following tables are a guide for OWF project developers who want to agree the scope of an EIA assessment prior to planning application. The rationale for this is set out in the OWEKH Evidence Review Note: Environmental Impact Assessment (section 3.1.1).

To address longstanding concerns about ineffective and overly precautionary scoping, the OWEKH ERNs have a three-category system (A-C). Notably, the references A, B, and C are for the purposes of distinguishing categories only; they are not intended for coding. These categorisations serve as a tool to encourage focus on the key areas, rather than being definitive labels.

In general, seascape, landscape and visual impacts are evaluated in terms of the sensitivity (and value) of the receptor, combined with the magnitude of impact on valued receptors. We have divided these impacts into three categories:

1. **Category A:** Impacts that have potential for significant adverse effects and require mitigation to be put in place.
2. **Category B:** Impacts that are unlikely to result in significant adverse effects with standard mitigation in place.
3. **Category C:** Impacts that are deemed insignificant even without standard mitigation in place.

Based on the review of the evidence and the aggregated findings of recent OWF project ES, we recommend that future projects apply a four-step process to scoping seascape, landscape and visual impact:

- Step 1 – Screen for potential Category A impacts (moderate and major adverse).
- Step 2 – Identify any Category C impacts that do not require further study, action or reporting.
- Step 3 – Set out the range of Category A and B impacts that will be included in the assessment and reporting, and commit to implementing standard good practice in all cases to mitigate, monitor and control these impacts and risks.
- Step 4 – After completing the screening for Category A and B impacts, focus on the ES chapter that reports primarily on the potential significant adverse effects, setting out what monitoring, mitigation and controls are required, and how they will be secured.

We recommend that Category A impacts are included in the EIA, with a clear focus on the application of the mitigation hierarchy, and on commitments to identified management and mitigation measures.

Category B impacts can reduce aspects of the assessment and reporting scope, if the applicant provides sufficient information and commits to specified mitigation, requirements, and commitments.

Category C impacts should not be routinely included in the scope of assessment, however they should be noted in the scoping documentation, together with reasoning for their inclusion in Category C. Standard mitigation should be clearly described in a scoping document to allow for scoping out from further assessment.

The initial categorisation and selection process should be properly detailed and documented as a part of scoping. A scoping assessment is needed to provide evidence for these decisions.

In practice for SLVIA, following site selection, there is limited recourse to the upper tiers of the mitigation hierarchy of avoidance and prevention. Additional mitigation is limited to the reduction of impact from adjustment of the Maximum Design Scenario (for example, turbine height, number or layout).

The impacts set out in Category A fall broadly into two groups:

1. Those that can be avoided via site selection (i.e. distance from coast),
2. Those that cannot be avoided via site selection (due to proximity to the coast).

For group 1, these are typically decided in advance of EIA through strategic assessment and identification of development areas and lease sites. For group 2, the focus is more on *transparency*: a clear and detailed explanation of the potential impact of development to various receptors from indicated viewpoints, rather than mitigation, which will be limited given the visibility of the turbines.

The following tables have been developed following the mitigation hierarchy. The mitigation hierarchy is a systematic approach used to minimise adverse effects of a project or scheme on the environment and people. It is a series of principles to guide decision-making and prioritise activity.



Jason Hawkes, 2015

3.2 Step 1: Screening for Category A Impacts

Category A impacts of OWF are likely to have significant adverse effects, even with mitigation. These impacts should be carefully managed through the mitigation hierarchy, and are best avoided through project location siting and design.²¹ The consideration of alternatives from the Maximum Design Scenario and design process should apply the mitigation hierarchy to avoid Category A impacts where possible. However, if the location of the wind farm is highly visible from shore certain adverse effects may be unavoidable.

Where a project proceeds with Category A impacts, it is likely to result in significant adverse effects and may be contested by key stakeholders. It's also likely these effects will form a material consideration in planning terms. However, these issues may still be deemed acceptable in the weighing-up of the planning balance by decision makers.

Here, the purpose of the SLVIA ES chapter is less about the level of impact (known to likely be reported as significant adverse effects) and more about providing transparent and clear documentation of the predicted effects so they are clear to all stakeholders, including the public and decision makers.

Based on the review of 76 previous EIAs for OWF, evidence suggests that the major variables involved in categorising an impact as Category A are:

- a. The proximity (and visibility) of the wind farm to the coast.
- b. The cumulative impact of a proposed wind farm and other wind farm developments in proximity.
- c. The presence of Protected Landscapes and seascape areas.
- d. The design (i.e. height, colour, lighting, layout) of the windfarm.

The location of a windfarm closer to shore (a) and adjacent to Protected Landscapes (b) increases the likelihood of significant adverse effects being reported, as does the presence of multiple windfarms with cumulative impacts (c). The design (d) is far less likely to be a key factor in determining Category A. However, there may be instances where topography or other factors such as layout, for example in terms of horizontal breadth, may be a key factor.

Where there is evidence arising from the factors listed above (primarily a-c), these should have been considered during the strategic assessment of wind farm leasing areas. Following site selection these factors can be revisited to inform a pre-scoping workshop to discuss the two main impacts arising from an OWF project with relation to SLVIA:

- Significant adverse impacts to seascape and coastal landscape character or Protected Landscapes arising from the presence of the operational windfarm.
- Significant adverse impacts to key views and visual amenity arising from the presence of the operational windfarm.

3.3 Step 2: Scoping Out Category C Impacts

In addition to the screening for Category A impacts, there is an opportunity to consult with the same stakeholders to identify any issues that are broadly acceptable, even without mitigation or further controls, referred to here as Category C impacts. These occur when the wind farm is not visible from the coast, or it is visible, but distant, and the closer areas of the coast are not Protected Landscapes or seascapes.

Category C impacts apply where there is clear evidence to support the rationale that the impact will have no, or negligible, effect on seascape, coastal landscape or visual amenity. They are considered unlikely to occur or are unlikely to result in significant adverse effects if they do occur. These impacts and effects should be scoped out of the assessment to reduce unnecessary assessment time and cost for all parties. Where there are differences of opinion, or uncertainty around assigning a Category C impact, they may need to be included in the scope of assessment. However, the inclusion of impacts for this reason should be rigorously minimised in order to avoid disproportionate and unnecessary reporting.

Examples of Category C impacts are set out in table 3. Where effects or impacts fall into this category, they should be set out in the scoping report and scoped out from further assessment and reporting in the ES. This scoping-out exercise will be strengthened if the developer can demonstrate compliance with recommendations of this ERN and show agreement in principle with key stakeholders from early engagement (for example at a pre-scoping workshop).

3.4 Step 3: Assessing Category B Impacts

Due to the nature of SLVIA impacts, many of them are not easily amendable to mitigation. Many potential impacts will fall into Category A or Category C, and they will either be unlikely to be significant (and should be scoped out of assessment) or are likely to be significant and not easily mitigated. There may be some cases where impacts fall between these two categories. This is likely to arise with wind farms that are theoretically visible, but relatively distant, and affect few sensitive sites or Protected Landscapes, but are not obviously Category A or C at the scoping phase. These will likely be Category B impacts for the purpose of scoping. Here, the EIA will provide further assessment to help determine the significance of the effect, following the normal GLVIA3 methodology.

The principles set out in relation to the work carried out in Wales by White S et al. on the effect of distance and height of turbine on magnitude of visual effects on sensitive receptors (see references) is important here. The focus of this study was on the debateable zone (Category B), being between low and moderate levels of effect. Under the ERN categories set out above, low and lower levels of effect would equate to Category C, and moderate or above would be Category A. The White S. et al work focused on Category B: the grey area of significance, around low to moderate levels of effect.

3.5 Pre-Scoping Workshop

A practical way to complete steps 1-3 above would be to arrange a pre-scoping workshop with key SLVIA stakeholders to review step 1 (a-d) to help determine what impacts are Category A, B or C. A pre-scoping workshop would not replace the formal Scoping Report, scoping responses and scoping opinion, but could help increase the likelihood of a smoother scoping process, improve stakeholder engagement, and increase the chance of successfully scoping out or scoping down the assessment of non-significant issues.

Where an existing windfarm is already in operation at a similar distance from the coast, stakeholders may benefit from visiting an operational example and speaking to communities at these locations. A site visit could be combined with a pre-scoping workshop.

Table 1 sets out the Category A impacts of OWF that are likely to have significant adverse effects on seascape, coastal landscape and visual impact, in some cases even with mitigation. These impacts should be carefully managed following the mitigation hierarchy, and are best avoided through project location siting and design.²² The consideration of alternatives and design process should also apply the mitigation hierarchy to avoid the impacts listed. Where a project proceeds with Category A impacts, it is likely to result in significant adverse effects, will likely be contested by key stakeholders, and will be a material consideration for decision makers.



Ben Barden, 2022

Table 1: Category A Impacts

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
ERN-SVI-A1	Significant adverse effects on seascape and coastal landscape character, or special qualities of Protected Landscapes during operation.	Compatibility of a site with the seascape or coastal landscape character and special qualities of a Protected Landscape should be considered during site selection and lease area selection, ideally at development area selection and early siting. Primary mitigation (i.e. of avoidance) will be through the OWF project location selection, and embedded mitigation through the project design (scale, layout, etc.). Secondary mitigation opportunities will be limited due to the nature of the impact. At EIA scoping, for assessing potential impacts to seascape or coastal landscape character, and special qualities of Protected Landscapes, an early assessment should be undertaken. This will determine if the introduction of an OWF at this location will be contrary to these receptors to such an extent as to cause a significant adverse effect. This assessment can build on or reference any	If the pre-scoping workshop indicates that key stakeholders believe the seascape or coastal landscape character, or Protected Landscape, is likely to be significantly affected, the scoping report should acknowledge this early on and indicate that secondary mitigation opportunities will be limited due to the nature of the impact. The focus of the EIA should be a proportionate report on the likely significant adverse effects on seascape or coastal landscape character, or Protected Landscapes special qualities. The scoping rationale should include: • A brief description of the seascape or coastal landscape character, or Protected Landscapes special qualities, and its sensitivity to an OWF project²³ • A brief description of the potential changes from an OWF project. • Methodology for further assessment of changes to the seascape or coastal landscape character, or Protected Landscape. • Outcomes of the pre-scoping workshop and proposed further	Mitigation options will be limited due the nature of the impact. However, any primary or embedded mitigation based on prevention, reduction, offsetting or strategic compensation committed to in the EIA should be clearly stated in the final project design and parameters. Any secondary measures should be detailed in mitigation plans in an oCEMP/EMP to ensure implementation.

27 ²³ Refer to relevant LCAs/SCAs and NCAs, given the project scale. MMO Seascape Character Assessments (MSCs) are also useful resources.

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
		earlier strategic review of this issue. A pre-scoping workshop can be carried out in advance of detailed visualisations, where the distance from shore²⁴ (or indicative ZTV or ZVI) demonstrates clear visibility. A workshop with key stakeholders can be held to discuss whether the presence of the windfarm in the seascape or coastal landscape, or Protected Landscape, is going to be contrary to the receptors' special qualities to the extent that it is likely to result in a significant adverse effect.	consultation with key stakeholders and regulators. Commitment to the application of standard mitigations regarding good design, turbine colour and lighting to further reduce visual effects, where possible.²⁵	
ERN-SVI-A2	Significant adverse visual effects during operation.	Primary mitigation (i.e. of avoidance) will be through the OWF project location selection, and embedded mitigation through the project design (scale and layout). Secondary mitigation opportunities will be limited due to the nature of the impact. Visual effects should be assessed where the site is proposed within close proximity to a coastline, and where there may be impacts regarding views, public rights of way and open access land. Other	If the pre-scoping workshop indicates that key stakeholders believe the visual effects on certain receptors are <i>likely to be significantly adverse</i>, the scoping report should acknowledge this early on and indicate that secondary mitigation opportunities will be limited due to the nature of the impact. The focus of the EIA should be a proportionate report on the likely significant adverse visual effects. The scoping rationale should include: A brief description of key affected viewpoints and receptors, and their sensitivity to an OWF project.	Mitigation options will be limited due the nature of the impact. However, any primary or embedded mitigation based on prevention, reduction, offsetting and/or strategic compensation committed to in the EIA should be clearly made in the final project design and parameters. Any secondary measures are to be detailed in mitigation plans in an oCEMP/EMP to ensure implementation.

²⁴ Typically, OWF less than 50km from the coast will have potential to be visible. See Sullivan, R. G., Kirchler, L. B., Cothren, J., & Winters, S. L. (2013).

²⁵ Noting that necessary shipping and navigation requirements based on health and safety will take precedence with regard to colour and lighting.

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
		areas where visual amenity may be affected are also relevant, that are not captured by an assessment of seascape or coastal landscape character, or Protected Landscapes. Primary mitigation is based largely on distance from the coasts, with visibility and visual impact generally agreed to be reduced by distance. A pre-scoping workshop can be carried out in advance of detailed visualisations where an indicative ZTV or ZVI demonstrates clear visibility. A workshop with key stakeholders can be held to discuss whether presence of the OWF is likely to result in significant effects.	• A description of the potential changes from an OWF project. This should draw on evidence from existing windfarms in similar circumstances that have been adversely affected by such changes. • Methodology for further assessment of visual impacts and visual amenity from views. • Outcomes of the pre-scoping workshop and proposed further consultation with key stakeholders and regulators. • Commitment to the application of standard mitigations regarding good design, turbine colour and lighting to reduce visual effects, where possible.²⁶	

Table 2 sets out the Category B impacts of OWF with potential to have significant adverse effects on seascape, landscape and visual impact without mitigation. These impacts should be carefully managed following the mitigation hierarchy.²⁷ With mitigations in place and appropriately secured through conditions, requirements and commitments, any residual effects should be reduced below a level where they would be considered significant adverse.

Table 2: Category B Impacts

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
ERN-SVI-B1	Potentially significant effects on seascape and/or coastal landscape character and/or special qualities of Protected Landscapes during operation.	There may be potential effects on seascape or coastal landscape character, or the special qualities of Protected Landscapes, identified through factors such as scale and visibility (i.e. distance from shore) of the operational windfarm. While the windfarm may be visible, it can be the case that it is unlikely to result in a significant adverse effect. At the scoping phase there may not be enough information to clearly determine if an impact is significant or not, particularly where the view is visible, but distant. As with Category A, a pre-scoping workshop can be carried out in advance of detailed visualisations where the distance from shore (or indicative ZTV or ZVI) demonstrates likely visibility. A workshop with key stakeholders can be held to discuss whether the presence of the windfarm is going to be contrary to the seascape or coastal landscape character, or the special qualities of a Protected Landscape, to the extent that it is likely to result in a significant	If the pre-scoping workshop does not generate a consensus on whether the seascape or coastal landscape character, or special qualities of a Protected Landscape will be <i>significantly affected or not</i>, then further assessment is likely to be required. The focus should be on a proportionate assessment necessary to reach a conclusion of significance or not, including: • Description of the seascape or coastal landscape character area, or special qualities of a Protected Landscape, and its sensitivity to an OWF project. • Description of the potential changes from an OWF and the capacity of the receptor to accommodate this change. • A focused methodology producing a proportionate approach to SLVIA, primarily aimed at providing information for the public and stakeholders, including realistic and accurate visualisation.	Mitigation options will be limited due the nature of the impact. However, any primary or embedded mitigation based on prevention, reduction, offsetting or strategic compensation committed to in the EIA should be clearly made in the final project design and parameters. Any secondary measures are to be detailed in mitigation plans in an oCEMP/EMP to ensure implementation.

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
		adverse effect, or an effect which is not considered significant.	- The outcome of the pre-scoping consultation with key stakeholders and regulators. - Commitment to the application of standard mitigations regarding good design, turbine colour and lighting to further reduce visual effects, where possible.²⁸	
ERN-SVI-B2	Potentially significant adverse visual effects during operation.	Primary mitigation will be through the OWF location selection and is largely based on distance from the coast. Visibility and visual impact are generally agreed to be reduced by distance. There may be potential visual effects and visual amenity identified through factors such as scale and visibility (i.e. distance from shore) of the operational windfarm. However, while the windfarm may be visible (and likely to result in some visual effects) this does not automatically result in a significant adverse effect on visual amenity. At scoping phase, there may not be enough information to clearly determine if an impact is significant or not, particularly where the OWF is visible, but distant.	If the pre-scoping workshop does not generate a consensus on whether visual amenity will be <i>significantly affected or not</i>, then further assessment is likely to be required. The focus should be on a proportionate assessment necessary to reach a conclusion of significance or not, including: - The main affected viewpoints and receptors, and their sensitivity to an OWF project. - Description of the potential changes from an OWF, including evidence from existing windfarms in similar circumstances that have accommodated these changes. - Outcome of pre-scoping consultation with key stakeholders and regulators. - A focused methodology producing a proportionate approach to the assessment of visual impacts, primarily aimed at providing information for the public and stakeholders, including realistic and accurate visualisation.	Mitigation options will be limited due the nature of the impact. However, any primary or embedded mitigation based on prevention, reduction or offsetting committed to in the EIA should be clearly made in the final project design and parameters. Any secondary measures are to be detailed in mitigation plans in an oCEMP/EMP to ensure implementation.

Ref	Generic impact	Information to support scoping		
		Rationale	Advice and evidence for scoping	Commitment required
		As with Category A, a pre-scoping workshop can be carried out in advance of detailed visualisations where the distance from shore (or indicative ZTV or ZVI) demonstrates likely visibility. A workshop with key stakeholders can be held to discuss if the presence of the windfarm is likely to result in a significant adverse effect on visual amenity, or an effect which is not considered significant.	Commitment to the application of standard mitigations regarding good design, turbine colour and lighting to further reduce visual effects, where possible. ²⁹	

Table 3 below sets out other aspects of OWF where there is clear evidence to support the rationale that the impact or aspect of an impact will have no, or negligible, impact on seascape, landscape or visual impact, and will not lead to any significant adverse effects. These impacts should be scoped out of the assessment to reduce unnecessary assessment time and cost on all parties.

Ref	Generic impact	Information to support scoping	
		Rationale	Advice and evidence for scoping
ERN-SVI-C1	Impacts on seascape or coastal landscape during <i>operation, construction and decommissioning</i> where the OWF project's above-sea-level infrastructure is <i>not visible</i> from the coast.	If the consensus from the pre-scoping workshop is that there will be no impacts on seascape or coastal landscape character, due to the lack of visibility (due to distance) from the coast, the rationale and outcomes from the workshop should be provided in the scoping report. It should recommend that the issue of seascape character <i>be scoped out of the EIA assessment</i> .	During scoping, reference should be made to any pre-scoping workshop, as well as this ERN and the rationales provided in this table. Attention should be drawn to the fact that the scoping out of these matters has already been agreed in principle by the endorsing parties to this ERN. This includes key statutory advisors and regulators for seascape and visual impacts.
ERN-SVI-C2	Impacts on views and visual amenity during <i>operation, construction and decommissioning</i> where the OWF project's above-sea-level infrastructure is <i>not visible</i> from the coast.	If the consensus from the pre-scoping workshop is that there will be no impacts on views or visual amenity, due to the lack of visibility (due to distance) from the coast, the rationale and outcomes from the workshop should be provided in the scoping report. It should recommend that the issue of views and visual amenity <i>be scoped out of the EIA assessment</i> .	
ERN-SVI-C3	Impacts on seascape or coastal landscape character from the <i>construction and decommissioning</i> of the OWF where the OWF project's above-sea-level infrastructure is <i>visible</i> from the coast.	Where the windfarm is visible from the shore, although there may be some impacts on seascape or coastal landscape character from vessels and offshore works during <i>construction and decommissioning</i> , these impacts are <i>temporary</i> and therefore unlikely to result in significant adverse effects. Therefore, these impacts <i>should be scoped out of the EIA assessment</i> .	
ERN-SVI-C4	Impacts on the views and visual amenity from the <i>construction and decommissioning</i> of the OWF where the OWF project's above-sea-level infrastructure is <i>visible</i> from the coast.	Where the windfarm is visible from the shore, although there may be some visual impacts from vessels and offshore works during <i>construction and decommissioning</i> , these impacts are <i>temporary</i> and therefore unlikely to result in <i>significant adverse impacts</i> . Therefore, these impacts <i>should be scoped out of the EIA assessment</i> .	

As set out in the above guidance and tables, improving scoping is key to efficient and proportionate assessment and reporting. The central role of scoping in delivering proportionate EIA is clearly advocated in the IEMA Proportionate EIA Strategy.³⁰ While the methodology for scoping an SLVIA is articulated in GLVIA3 (and associated guidance and clarifications), the scope of the EIA reporting could be further streamlined. Therefore, it will be necessary to put greater focus on evidence and early stakeholder engagement to provide sufficient confidence that EIA reporting can be more streamlined, without reducing the protection offered from appropriate SLVIA assessment.

Ultimately, it will be necessary to put greater focus on evidence and stakeholder engagement earlier on in the scoping process. For example, in Scotland, the Marine Directorate emphasises the importance of early pre-application meetings and a scoping workshop as part of its guidance for offshore renewable energy projects on marine licensing and consenting requirements.³¹

Recommendation 1 – Standardisation of Scoping

Adopt a UK-wide approach to scoping across all OWF ES and EIA reports by following the advice contained in Tables 1-3 of this ERN to standardise the approach and improve efficiency for all stakeholders.

Weigh the approach to scoping SLVIA towards likely significant adverse effects, with reduced scope for minor effects which are unlikely to result in significant adverse effects. Take a standardised approach to the scoping out of the seascape, coastal landscape and visual effects at distances greater than 50km, with variances to this only by exception, as needed.



Ben Barden, 2022

³⁰ IEMA (2017) Delivery Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice.

³¹ <https://www.gov.scot/publications/marine-licensing-and-consenting-offshore-renewable-energy-projects/>.

3.6 Consistency and Clarity of EIA Reporting

The review of 76 previous assessments identified a wide variety of reporting styles and content regarding impacts on seascape, landscape and visual impact. There are a number of drivers for this, including EIA requirements, good practice guidelines, house styles for developers, consultants and experts, legal advice, curatorial advice and comments from stakeholders.

This variance in reporting increases the burden on all stakeholders when reading and interpreting the reports, and can hinder the understanding of the impacts, especially for non-experts.

Improvements have been identified in the areas of:

- Chapter structure and accessibility.
- Clarity and consistency of impact reporting.
- Proportionate reporting.
- Standardised survey requirements.
- Improved monitoring and enforcement.

To address this, *OWEKH Evidence Review Note: Environmental Impact Assessment* sets out a recommended standard 12-section ES chapter structure. This ERN aligns with this structure and provides detailed guidance in **Annex B** on how SLVIA considerations can be integrated.

Given the wide variety of influences on style and content, it is important that all parties align with the requirements set out in this ERN to bring greater clarity and consistency in reporting across OWF projects.

3.6.1 Chapter structure and accessibility

The location of SLVIA impacts varies within ES and chapters between OWF projects. For example, for a reader to understand the impacts on the seascape, landscape, and views and visual amenities, they may have to read:

- A single chapter covering seascape, landscape and visual amenities.
- Two separate chapters, one covering seascape and visual amenity (offshore) the other covering landscape and visual impact assessment.
- A chapter on marine archaeology and cultural heritage covering a component of the visual effects on the setting of cultural heritage assets.
- A chapter on socio-economics, travel, recreation and tourism, covering a component of the visual effects on visitors and tourists.

Clearly this level of inconsistency between projects is not helpful to stakeholders and the public, particularly when people need to review multiple OWF as part of their role. There are no benefits from inconsistent chapter structures regarding SLVIA, but there are advantages from greater standardisation across projects, such as increasing the speed and ease of review.

Where specific circumstances lend themselves to taking an alternative approach to reporting, this should be explained in the Scoping Report, otherwise SLVIA authors in ES should move towards consistency of reporting.

3.6.2 Clarity of impact reporting

The use of impact classifications varies across OWF projects. While many projects use standard scales to describe impacts (i.e. no impact, negligible, minor, moderate, major, and combinations thereof), some have used a different scale entirely (e.g. the ES for Sheringham Shoal and Dudgeon used minimal-neutral, slight-minimal, slight-adverse, moderate-adverse, moderate, major-moderate and major). Others simply classify impacts as a binary decision of 'significant' or 'not significant' (e.g. East Anglia One and Two).

Each assessment can set out its methodology, and providing it is consistent within the chapter, it could be argued this is satisfactory. But for stakeholders working across multiple projects, including national statutory bodies, regulators and decision makers, variety complicates the process unnecessarily. As with chapter structure, there is real benefit to all stakeholders applying a consistent methodology across projects, to reduce the burden on reviewers and aid consistent understanding.

Further inconsistency is introduced through differences in the classification of 'significant effects'. Even where projects use the standardised scale, assessments sometimes use differing levels of significance. For example, in the review of recent OWF projects, ten classified 'moderate' effects as either 'significant', or 'potentially significant'. Nine of these that reported 'moderate' and 'significant' effects also reported 'moderate' but 'not significant' effects at the same time. This inconsistent use of terminology, including phrases such as 'potentially significant' (see Seagreen projects Alpha and Brava) or in referencing a gradient of significance, (e.g. major-moderate, moderate-slight or minor-moderate), can lead to confusion when determining what a 'significant effect' in EIA terms.

Standardised terminology used in other areas of EIA includes:

- **No impact:** There is no identified impact³²
- **Negligible:** An impact that is so inconsequential as to result in a negligible effect on any identified receptor. This is not a significant effect.
- **Minor:** An impact that by its nature (taking account of context, sensitivity of receptors, magnitude and severity of effect, etc) and considering mitigation, is unlikely to result in a significant effect.
- **Moderate:** An impact that by its nature (taking account of context, sensitivity of receptors, magnitude and severity of effect etc) has the potential to result in a significant effect. Typically, moderate impacts should be mitigated (following the mitigation hierarchy) and depending on the effectiveness of the proposed mitigation, the residual (post-mitigation) effect may or may not be significant. The determination of significance in these cases depends on the specific context and circumstances and should be informed by professional judgement with a clear rationale and evidence to support the assessment.
- **Major:** A substantial impact that by its nature (taking account of context, sensitivity of receptors, magnitude and severity of effect, etc) is likely to result in a significant effect, even taking account of mitigation. Residual (post-mitigation) impacts that are classed as major effects are likely to form a material issue in planning and will attract substantial scrutiny and challenge.

³² For example, the impact is lacking either a source, pathway or receptor by which an effect would arise.

The above approach is far from perfect, with questions around why any 'no impact' findings are ever included in EIA, as they should have been scoped out during the scoping phase or not included in the first instance. If there is a very small impact (negligible), it should also have been scoped out. These often appear when there was a pre-mitigation impact that was potentially significant, but post-mitigation the residual impact turned out to be negligible or no impact. Since the most recent (2017) update to EIA regulations, mitigation can be used in scoping to support the rationale for determining likely significant effects. Impacts that are known to be negligible with mitigation in place should therefore be scoped out of further assessment.

The remaining three categories of 'minor', 'moderate' and 'major' are commonly used across EIA chapters, with a general rule of thumb that minor impacts are (usually) not significant. In some EIA disciplines, moderate impacts are always considered significant by default, whereas in others, such as SLVIA, moderate impacts may or may not be significant. This depends on a range of factors that are weighed up through professional judgement by a competent expert (as set out in GLVIA3).

Some stakeholders advocate a five-point scale, not including 'no impact', with moderate being the midpoint, and another category included above major, sometimes called severe, however this is more the exception than the rule. Generally speaking, major or severe impacts are normally quite clear-cut, as are very minor or negligible impacts. Much of the disagreement is in the middle area where the severity of significance is unclear.

Experienced EIA and SLVIA practitioners are wary of over-reliance on basic matrices of magnitude and sensitivity, as they are an over-simplification, and do not take into account the contextual issues and nuances of a particular impact or effect. The onus is therefore on the practitioner to clearly state their reasoning and judgement, with supporting rationale and evidence to support their conclusion of significance.

Further inconsistency is introduced through the assessment of differing phases of the project. A standard EIA approach is to assess the significant effects felt during the construction, operation and maintenance, and decommissioning phases of the project. While many of the most recently assessed OWF ES chapters followed this approach, there were eight projects that did not give any summary of the effects during the construction or decommissioning phases, or that only stated the effects during the construction and decommissioning phases would be no greater than during the operation and maintenance phase.

For example, Pentland OWF projects states:

"The construction phase will be based around the installation of the WTGs which will have a comparable effect to the effect that will occur during the operational phase. Similarly, the effects during the decommissioning phase, when the WTGs will be uninstalled, will be no greater than the effects assessed in respect of the operational phase."

In this case, there is no summary of significant effects for these phases.

One OWF project (Beatrice) gave no detail on phases at all, and instead only considered the impacts across the project as a whole. In the cases where no effects were recorded for the construction and decommissioning phases, they appear to have been either scoped out of the assessment entirely, considered to involve no likely significant effect, or considered to be of no greater impact than effects during the operational phase and therefore not covered in detail within the ES.

The use of the words 'impact' and 'effect' differs depending on the project. They are sometimes used interchangeably, and sometimes have specific meanings, with 'impact' meaning 'cause or change', and 'effect' meaning 'consequence'. This lack of consistency further reduces clarity for all stakeholders.

Recommendation 2 – Consistency and Clarity of Reporting

Adopt a consistent and standardised approach across all OWF ES to make it easier for all stakeholders to access the reports and find relevant information.

Adopt a consistent and standardised approach to the terminology and description of seascape, landscape and visual impacts for all OWF ES to improve efficiency and clarity for all stakeholders.

Use standardised terminology and approaches that are sufficiently inclusive of standard terminology and approaches used in the NPPF/NPF4/NDF/SPPS, UK MPS, and that are sufficiently signposted and supported to be easily understood by generalists and planning officers who may not be experts in seascape, landscape and visual impact.

See **Annex B** for a standard chapter outline for seascape, landscape and visual impact.



Terence A R Watts, 2019

3.7 Proportionate Reporting

The potential (and actual) impacts on seascape, landscape and visual impact arising from an OWF have been studied in the UK for more than 25 years. For example, a visual impact assessment was included in the non-technical summary for the Gunfleet Sands OWF in 2002, but with very limited reporting (less than one page). Nineteen years later, for Round 3, the ES for East Anglia One offshore SLVIA section ran to 146 pages. Another five years on, in 2024, the Five Estuaries Offshore Wind Farm ES section on SLVIA was 393 pages long. The Rampion 2 SLVIA from August 2023 might hold the record for length, at 538 pages long.

As a part of the SLVIA process, site characterisation surveys and visits to viewpoints can be carried out. These are usually considered in combination with any existing relevant seascape or landscape character assessment. The number of viewpoints and areas included in a site characterisation survey varies, depending on what has been agreed with the statutory consultees, and the characteristics of the area. Likewise, the number of possible visual receptors varies between different OWF assessments. Viewpoints considered in detail within the SLVIA can range from a one or two, to more than 60 different views (see Rampion 2), in addition to seascape and landscape character assessments. This can result in an extremely high number of impacts for stakeholders to review and understand, and lead to increasingly long SLVIA chapters.

It is widely accepted that the scale of the latest windfarms is significantly larger and more complex than the early projects, and that assessment techniques have improved, as well as technology and our understanding of impacts. But many stakeholders, including ISEP (formerly IEMA)³³, the leading professional institute for impact assessment professionals, believe that the reporting for many EIA aspects has become disproportionate to the significance of the impacts.

3.7.1 Concise Reporting

There are a number of immediate and relatively straightforward steps that can be taken to reduce the length of Seascape, Landscape and Visual Impact ES chapters, while still maintaining robust EIA standards. *OWEKH Evidence Review Note: Environmental Impact Assessment* provides recommendations on overall chapter length and format for consistency and usability across all disciplines.

Building on that, this ERN gives aspect-specific guidance and recommendations:

- Present baseline information as concise summaries using tables and figures as necessary, and only when directly pertinent to the impact assessment. Provide necessary baseline data and supporting information as evidence through inclusion in the Seascape, Landscape and Visual Impact technical appendices.
- Use technical appendices where large tables and baseline data needs to be reported. Capture detailed assessment in the Technical Report, with key results summarised in the ES and referenced back to the Technical Report as necessary.
- Address setting and historic seascape character within the Marine Historic or the Seascape, Landscape and Visual ES chapter. There is no clear preference for where this should be included, but clear signposting across chapters will avoid duplication.
- Do not provide summaries or explainers of publicly available national laws, policies or guidance. These can be cross-referenced and looked up. If there is particular reliance on a specific key source document, rather than

³³ IEMA (2017) *Delivery Proportionate EIA: A Collaborative Strategy for Enhancing UK Environmental Impact Assessment Practice*.

- selectively quoting or reiterating large portions of the report, use clear referencing citing page numbers, paragraph numbers and section numbers. Hyperlinks should also be used to aid navigation to external sources.
- Start chapters with a clear executive summary of any significant effects written in full and using plain English, and without excessive use of acronyms or obscure terms. If no significant effects have been identified, state that clearly the chapter introduction.
- Where an SLVIA (for example to GLVIA3) has been undertaken in support of the EIA, it will form a key supporting document for the EIA chapter. However, by effectively referencing the SLVIA for detailed analysis and data, the main EIA chapter can focus on summarising key findings and conclusions.
- Aim for an ES chapter of no more than 30-40 pages to ensure clarity, brevity and conciseness. Remembering that the key goal of the ES is to communicate significant adverse effects, do not catalogue all of the non-significant effects in detail. An accompanying SLVIA and technical appendices can be used where large tables, multiple visualisations, large numbers of non-significant effects or baseline data needs to be reported.
- Many stakeholders, particularly the public, will focus on panorama style visualisations, which must be created according to strict guidelines. Visualisations are key element of the ES and need to be readily accessible, but they do not need to be included in the ES chapter. Use your judgement as to which visualisations are pertinent to the impact reporting and need to feature in the main ES chapter.
- *OWEKH Evidence Review Note: Environmental Impact Assessment* provides recommendations for overall chapter length and format for consistency and usability across all disciplines. This ERN builds on this with topic-specific guidance and recommendations.

3.7.2 Public Perception vs. Expert Judgment in SLVIA

While expert assessments of SLVIA provide a technical foundation for decision-making, public perception often plays a more influential role in determining the acceptability of OWF developments. It is important to distinguish between expert judgment and public perception. Public perception is subjective, inconsistent, and value-laden, and highly dependent on the individual. For example, two people may look at the same visualisation or operational wind farm with one concluding, "it is an industrial monstrosity destroying a cherished view" and the other, "it is a wonderful and uplifting symbol of human ingenuity and hope for a transition to clean energy". It is often the quantity of opinion, rather than quality of an individual opinion, that influences decision-making, for example where there is a clear consensus from a large proportion of a community.

In contrast, expert judgement is designed to be objective, using transparent criteria and indicators. It is systematically captured and consistently repeatable in different scenarios and by different experts following the same method. Weight should be given to the view of expert reviewers on this basis, as it is for other subject matters. That is not to say community views are not important, just that community consensus on the acceptability of visual effects from a wind farm is not the same as an expert judgement by a competent expert. Both are useful and provide important information for decision makers but have different purposes.

It is not uncommon for an expert analysis to conclude that visual effects are minimal or within acceptable thresholds, while at the same time. public opposition arises due to subjective concerns, emotional connections to the landscape, or misconceptions about the scale and visibility of the project.

To address this, enhanced public engagement strategies are essential. Traditional consultation methods, such as written reports and static photomontages, often fail to effectively communicate the real-world experience of OWF. Instead, the use of interactive digital tools, virtual reality (VR) simulations, and GIS-based dynamic visualisations can provide communities with a more intuitive understanding of how developments will appear from different viewpoints. Videos and documentaries of existing sites give more realistic portrayals and can include interviews with people who live in areas with windfarms to showcase real-world experience.

There is anecdotal evidence that communities originally opposed to windfarms often become accustomed to them over time, and opinions often change about the acceptability and levels of impact. Additionally, early-stage dialogue and participatory workshops can help identify areas of particular concern and contribute to project design in a way that minimises conflict.

By prioritising transparent communication and inclusive engagement, developers can better align public perception with technical assessments, reducing opposition and fostering greater acceptance of OWF projects. SLVIA reporting should not include additional information or over-assess the significance of impacts in order to better align with public concerns.



Picture courtesy of Principle Power

3.7.3 Use of Digital Reporting

The use of digital tools and methodologies in EIA offers significant opportunities to improve the clarity, efficiency, and proportionality of reporting in the context of OWF projects. By leveraging digital technologies, the OWF could streamline SLVIA, ensuring that reports focus on significant impacts while remaining accessible to diverse stakeholders.

The use of these digital techniques does not remove the need for clearly documented evidence with paragraph numbering for the purpose of records, and for reference during examination. Many Local Authority, regulator and statutory consultee systems are unable to handle or access new formats and have limitations regarding security protocols and legacy systems. Nevertheless, in addition to providing static PDFs, there are a number of additional techniques that can be deployed to improve accessibility, transparency, usability and understanding.

Recommendations for using digital impact assessment approaches to reporting are set out below and in *OWEKH Evidence Review Note: Environmental Impact Assessment*.

Table 3: Digital Approaches to SLVIA Reporting

Approach	Recommendations
Interactive and dynamic reporting	Provide interactive digital reports and interactive PDFs that enable users to navigate directly to relevant sections, such as mitigation measures or significant impacts.
	Use web-based platforms to host digital reports, integrating dynamic features like interactive maps, interactive timelines, and visualisations.
Enhanced use of GIS and mapping tools	Incorporate GIS-based impact mapping to visually represent spatial relationships between proposed OWF developments and seascape, coastal landscape and visual impacts.
	Use layered maps to display baseline data, key designations, viewpoints, receptors, and predicted impacts, allowing stakeholders to toggle between views. For example, a good spatial planning technique in the early strategic planning stages is sieve mapping and heat mapping to layer constraints and opportunities and show how a preferred site arose.
Clear and engaging visualisations	Use infographics, charts, and visual summaries to condense complex findings into understandable formats for experts and the public.
	Present mitigation strategies and post-consent monitoring plans through interactive flowcharts and dashboards.
Stakeholder accessibility and inclusivity	Ensure all digital outputs meet Web Content Accessibility Guidelines (WCAG) to accommodate diverse user needs, including disabilities.
	Develop intuitive user interfaces that allow non-specialists to explore key findings without technical barriers.
Integrated reporting and monitoring	Link post-consent reporting tools with real-time monitoring dashboards to provide updates on the effectiveness of mitigation measures post-consent. This ensures stakeholders remain informed and enhances transparency.
Templates and standards for digital reporting	Adopt industry-wide templates for digital reporting, ensuring consistency across OWF projects.
	Standardise methodologies for incorporating digital tools into EIAs, particularly for SLVIA, to reduce variability and improve comparability.

By embracing digital approaches to impact assessment, the OWF sector can ensure reporting on SLVIA is proportionate, accessible, and aligned with best practice, ultimately supporting sustainable development.

Recommendation 3: Proportionate Reporting and Enhanced Engagement

Adopt a proportionate approach to the reporting of SLVIA for all OWF ES in order to reduce the burden and improve clarity for all stakeholders.

Effective stakeholder engagement is essential to good EIA. Embrace digital tools wherever possible to present data in a more accessible way. It will aid public engagement by providing multiple ways to engage and understand the effects of a project, for example through film and documentary evidence.



Picture courtesy of Principle Power

4. Further Calls for Evidence and Research

There is need for more complicated, far-reaching and policy-based issues to be addressed through further studies or research.

4.1 Strategic Level Assessment for Foreseeable Significant Effects

This ERN highlights the difficulty of mitigating seascape, landscape and visual impacts once an OWF project has been proposed in a visible and sensitive location. Given these challenges, the most effective opportunity to address such impacts is at the strategic planning and zonal selection stage, before project-level EIA.

Stakeholders strongly support the adoption of a strategic-level approach to assessing SLVIA and have provided a number of useful insights and examples of best practice. Natural Resources Wales (NRW) emphasised that Protected Landscapes along the coast, such as National Parks and National Landscapes (formerly Areas of Outstanding Natural Beauty), should be prioritised in any strategic sensitivity assessment. These areas represent some of the most sensitive receptors due to their statutory purposes, high public visibility, and extensive coastal and marine settings.

Stakeholders note the importance of considering distance-decay effects, where the visual sensitivity of receptors generally decreases with increasing distance from the proposed development. This principle is particularly relevant when assessing the settings of Protected Landscapes, which may extend well beyond terrestrial boundaries into adjacent seascapes. It was suggested that the visibility of OWF from these sensitive coastal receptors should be a key determinant of acceptability at the strategic planning stage.

The Welsh Government's sieve mapping exercise, undertaken as part of the *Future Wales 2040* spatial policy framework, was cited as a practical and transparent example of how opportunities and constraints can be mapped to inform pre-assessed areas for wind energy generation. This approach helps to front-load the consideration of key environmental constraints, including visual, seascape and coastal landscape sensitivities, at a plan-making level. Also in Wales, siting principles recommended in NRW Report 330 include orientation of arrays to reduce frontal visibility from sensitive coasts, use of headlands to screen views, and selection of low-sensitivity seascapes. Early adoption of these siting strategies can reduce residual effects at source and avoid contentious locations.

Stakeholders identified the need to move beyond cumulative turbine counts and to develop clearer, policy-led thresholds for acceptable levels of seascape and coastal landscape change. As modern OWF grow in scale, individual turbines may no longer be the most meaningful unit of assessment. Instead, stakeholders suggest approach that considers the overall visual character of turbine groupings and the potential for multiple developments to be perceived as a single, visually dominant feature within a seascape or coastal landscape. This would support more robust and regionally consistent assessments of cumulative effects.

The development of strategic compensation frameworks where mitigation is not feasible has also been proposed. Drawing on some onshore examples such as the Hagshaw Wind Energy Cluster in Scotland, compensation schemes could deliver ongoing community benefits over the operational lifetime of a project. Ideally, such schemes would be governed by public bodies or community trusts, ensuring transparent oversight and relieving developers of the need to manage local benefit

arrangements directly. For this approach to be effective, any obligations would need to be agreed during the consenting stage and linked clearly to the assessment of unavoidable significant effects. The recipients of community benefits may not be as easily identifiable or attributable for offshore projects as they are for onshore projects.

Recent UK OWF projects show a trend towards integrating landscape enhancement or compensation schemes to address residual landscape and visual impacts that cannot be fully avoided or mitigated. For example, the Mona Offshore Wind Farm includes a Landscape Enhancement Scheme secured under Requirement 28 of its DCO, with a fund to compensate for remaining landscape effects.

Similarly, the Awel y Môr Offshore Wind Farm embeds a Landscape Enhancement Scheme under Requirement 26 of its DCO, focused on the Anglesey AONB, Eryri National Park and the Great Orme Heritage Coast.

These examples establish precedent that the final stage of the mitigation hierarchy – compensation – is being applied to seascape, landscape and visual impacts at the consenting stage of major OWF projects in the UK. Incorporating such mechanisms into the SLVIA framework provides the consenting authority and stakeholders with a clearer mechanism to address residual impacts in designated landscapes where effects are likely to be significant (see section 4.3).

OWEKH recommends the development of a national or regional strategic seascape and coastal landscape sensitivity analysis, led by The Crown Estate in collaboration with agencies such as Natural England, NRW, NatureScot, DAERA and Marine Scotland. This work could be integrated with wider spatial planning tools, leasing rounds, and cumulative effects frameworks. The resulting assessments would be made publicly available and form a consistent evidence base to inform both selection and the scoping of future project-level EIAs. This approach could offer greater certainty to developers, support more proportionate assessments, and ensure that the most valued seascapes, coastal landscapes and visual receptors are protected from unmanaged cumulative change.

When cumulative effects are identifiable in the spatial planning and wind farm zoning and leasing studies, it is a good time to begin discussions on potential for strategic compensation such as landscape enhancement schemes.

Recommendation 4: Strategic Approach to Risk Assessment

Integrate a strategic-level assessment of SLVIA sensitivity into the identification of leasing and plan-level development areas. This assessment will identify areas where proximity to coastlines, Protected Landscapes, or cumulative developments is likely to give rise to significant adverse effects, enabling early avoidance of high-sensitivity locations.

It will also inform site selection decisions and support stakeholders to make informed judgements about whether specific areas are appropriate to progress to project-level assessment. Where significant effects are identified but deemed acceptable at the strategic level, due to overriding national priorities or limited alternatives, this conclusion needs to be clearly documented.

Subsequent project-level EIAs will reference the strategic decision, avoiding unnecessary reassessment of unavoidable impacts and supporting more streamlined and proportionate evaluations. This will free up time to focus on determining the need for appropriate compensation and the use of landscape enhancement schemes.

4.2 Cumulative Effects

The cumulative effects assessment (CEA) is an essential component of EIA, requiring consideration of how the impacts of a proposed OWF project might interact with those of other developments in the same marine or coastal area. This typically includes both *inter-project cumulative effects*, arising from the combined influence of multiple developments on the same receptors, and *intra-project cumulative effects*, resulting from interactions between different types of impacts within a single project.

In practice, CEA for seascape, coastal landscape and visual impacts has proven complex and variable in quality. Current approaches often lack consistency in defining cumulative scenarios and do not always apply meaningful thresholds or criteria to distinguish acceptable and unacceptable levels of change. This is especially problematic in areas where multiple OWF are proposed in close proximity, leading to a progressive build-up of visual impacts that may go unaddressed at the strategic level.

It's clear that a more structured and regionalised approach to cumulative assessment is needed. Rather than focusing narrowly on turbine counts or linear summation of impacts, stakeholders recommend defining thresholds of acceptable seascape and coastal landscape change, for example, in relation to the number of developments visible in a key view or the proportion of a horizon affected. Such thresholds would allow for a more meaningful understanding of when additional developments would tip a seascape or coastal landscape from being moderately affected to significantly altered. This would help avoid cumulative impacts becoming significant after it is too late to intervene.

There's also a need for higher-level coordination of cumulative assessment. Stakeholders have told us that cumulative visual effects cannot be adequately addressed solely through project-by-project assessments. A regional overview is required to determine which seascapes and coastal landscapes may be suitable for visual change from large-scale OWF developments, and which should be protected from further encroachment. For example, in Wales, the embayed nature of the coastline, with distinct visual compartments defined by headlands and inlets, may offer clearer natural divisions for managing cumulative views. This may be less straightforward on flatter or more linear coastlines such as those in eastern England.

Further clarity is needed on the role of existing developments in the assessment baseline. As advised by the Planning Inspectorate and recognised in GLVIA3, operational developments should form part of the baseline scenario. This is a point of confusion for many stakeholders, as 'cumulative' here relates to projects happening at the same time, whereas in normal English usage, cumulative is temporal, or over time, which would imply the new project plus all existing projects. This is particularly important when dealing with the concept of carrying-capacities which are used in ecology and landscape assessments. Carrying capacity refers to the resilience of a system, and often there is a threshold above which a tipping point is reached where harm occurs.

Scenario 1 – One new wind farm proposed at location in proximity to two operational wind farms

For OWF EIA, where in the assessment should we consider carrying capacities, thresholds and tipping points?

Under current guidance, for an OWF being built in close proximity to two existing operational OWF, the assessment of impact on thresholds, tipping points and

carrying capacity of the landscape, seascape and visual effects would be in the main assessment, not in a cumulative assessment.

The new OWF is being proposed in a scenario where the baseline includes two existing OWF. It would be down to the competent experts, using best available guidance, policy and evidence to determine if, in that particular scenario, the presence of the other two OWF means the new OWF is compatible with the SLVIA. Or they may determine that the carrying capacity of the receiving environment and impacted receptors would reach or exceed a threshold or tipping point whereby the addition of the new OWF into the existing baselines scenario would cause significant adverse impacts.

Scenario 2 – Three new wind farms proposed in proximity

If there were three new OWF being proposed at the same time, or in an overlapping timeframe, where in the assessment should we consider carrying capacities, thresholds and tipping points?

In this case, the effect on carrying capacity, thresholds and tipping points would fall into the cumulative effects assessment of the EIA.

This is because the baseline scenario, i.e. the existing environment, does not include any of these proposed developments, so there is a risk that each individual project only reports the effects of its own proposals, and no consideration is made of the cumulative effects of all three wind farms on the environment. Under this scenario, the main assessment would focus solely on the effects of one proposed OWF on the existing baseline, not including the other wind farms, as they may not proceed. Following the main assessment, a cumulative effects assessment considers the scenario that all the projects proceed and how this might change the impacts and effects identified. It is at this point that additional effects (or rather an increase in the severity or magnitude of effect) may be identified that could result in a significant adverse effect. This is most likely where the combination of the impacts from all three projects are considered to create a tipping point or cross a threshold of the carrying capacity of the landscape, seascape or Protected Landscape to accommodate the change.

The consideration of cumulative effects is complex and will become an increasingly important consideration as OWF expand and grow to meet the targets for offshore wind deployment. It is therefore important that consistent approaches are taken and sufficient assessment and weight is placed on the cumulative effects assessment.

It's important to revisit how visual cumulative impacts are communicated. Rather than technical appendices with multiple viewpoint analyses, more intuitive methods such as heat mapping, sieve analysis, and regional scenario modelling will convey cumulative impacts more clearly for expert and non-expert audiences.

Recommendation 5: Regionalised and Threshold-Based Cumulative Effects Assessment

Assess cumulative seascape, coastal landscape and visual effects using a regional and threshold-based approach that goes beyond project-level aggregation. Commission a meta-review of existing evidence to identify areas at risk of cumulative visual saturation and define indicative thresholds of acceptable change.

In regional strategies, distinguish between seascapes and coastal landscapes that may accommodate future development, and those that require enhanced protection or enhanced compensation. This strategic framing will inform scoping, site selection, and consenting decisions at project and plan level. Once developed, incorporate standardised approaches and thresholds into future revisions of this ERN and associated guidance, including **Annex B**.

4.3 Addressing Unmitigated Adverse Effects and Exploring Strategic Compensation

Offshore wind proposals may give rise to significant seascape, coastal landscape or visual effects that cannot be fully avoided or mitigated at project level, even following application of the mitigation hierarchy. In such cases, it is essential to ensure transparent engagement with relevant stakeholders to explore appropriate and proportionate responses. This is especially important where the residual effects are likely to persist in the long-term or contribute to cumulative effects on Protected Landscapes or Heritage Coasts.

Many Protected Landscapes draw upon their seascape setting to contribute to the natural beauty for which they are designated and thereby protected. Adverse and unmitigable effects on the natural beauty of these landscapes will require an elevated level of compensation which goes beyond that agreed for non-designated landscapes.

Stakeholders consulted for this ERN stressed that, where significant residual effects remain, developers should explicitly present these effects within the ES, making a clear distinction between mitigated and unmitigated impacts. Early engagement and transparency with statutory consultees, marine planning authorities, local authorities, and other affected parties would also help ensure that potential concerns are understood and addressed. Developers are encouraged to explore opportunities for offsetting or compensating these effects at a strategic scale, drawing on insights from terrestrial planning and emerging approaches to natural capital and ecosystem services.

Incorporating strategic approaches to managing residual effects on seascape, coastal landscapes and visual resources is in line with evolving best practice. This includes integrating with relevant sections of marine plans, engaging with the concept of ecosystem services, and considering enhancement or stewardship of other seascape and coastal landscape areas where appropriate.

This could include:

- Funding or contributing to long-term stewardship of affected coastal landscapes.
- Supporting marine cultural heritage initiatives that improve public understanding of seascape change.
- Contributing to collaborative monitoring programmes that address landscape perception and change over time.
- Engaging with mechanisms being developed under the Offshore Wind Environmental Improvement Package (OWEIP) or sectoral offsetting pilots.

Strategic compensation for SLVIA effects is at an early stage of development in the UK marine planning system. Any such approaches must be proportionate, evidence-based, and developed collaboratively with regulators and affected communities.

Recommendation 6: Strategic Compensation

Where significant adverse SLVIA effects remain after mitigation, undertake early, collaborative consultation with regulators and stakeholders to explore proportionate, strategic responses. This might include identifying enhancement or stewardship opportunities that contribute positively to seascape character or understanding.

Report such measures transparently in the ES and link, where possible, to marine planning policy objectives or spatial frameworks.



Jason Hawkes, 2013

5. Summary of Recommendations

Building on the overarching recommendations in *OWEKH Evidence Review Note: Environmental Impact Assessment*, Sections 3 and 4 of this ERN set out the rationale for recommendations to improve the practice of assessment and management of the impacts of OWF projects on seascape, landscape and visual impact. This section consolidates all the recommendations from throughout the ERN into a single list for ease of reference.

The following recommendations are made for practitioners, developers, reviewers of EIAs for OWF projects regarding seascape, landscape and visual impact.

5.1 Standardisation of Scoping

Adopt a UK-wide approach to scoping across all OWF ES and EIA reports by following the advice contained in Tables 1-3 of this ERN to standardise the approach and improve efficiency for all stakeholders.

Weigh the approach to scoping SLVIA towards likely significant adverse effects, with reduced scope for minor effects which are unlikely to result in significant adverse effects. Take a standardised approach to the scoping out of the seascape, coastal landscape and visual effects at distances greater than 50km, with variances to this only by exception, as needed.

5.2 Consistency and Clarity of Reporting

Adopt a consistent and standardised approach across all OWF ES to make it easier for all stakeholders to access the reports and find relevant information.

Adopt a consistent and standardised approach to the terminology and description of seascape, landscape and visual impacts for all OWF ES to improve efficiency and clarity for all stakeholders.

Use standardised terminology and approaches that are sufficiently inclusive of standard terminology and approaches used in the NPPF/NPF4/NDF/SPPS, UK MPS, and that are sufficiently signposted and supported to be easily understood by generalists and planning officers who may not be experts in seascape, landscape and visual impact.

See **Annex B** for a standard chapter outline for seascape, landscape and visual impact.

5.3 Proportionate Reporting and Enhanced Engagement

Adopt a proportionate approach to the reporting of SLVIA for all OWF ES in order to reduce the burden and improve clarity for all stakeholders.

Effective stakeholder engagement is essential to good EIA. Embrace digital tools wherever possible to present data in a more accessible way. It will aid public engagement by providing multiple ways to engage and understand the effects of a project, for example through film and documentary evidence.

5.4 Strategic Approach to Risk Assessment

Integrate a strategic-level assessment of SLVIA sensitivity into the identification of leasing and plan-level development areas. This assessment will identify areas where proximity to coastlines, Protected Landscapes, or cumulative developments is likely to give rise to significant adverse effects, enabling early avoidance of high-sensitivity locations.

It will also inform site selection decisions and support stakeholders to make informed judgements about whether specific areas are appropriate to progress to project-level assessment. Where significant effects are identified but deemed acceptable at the strategic level, due to overriding national priorities or limited alternatives, this conclusion needs to be clearly documented.

Subsequent project-level EIAs will reference the strategic decision, avoiding unnecessary reassessment of unavoidable impacts and supporting more streamlined and proportionate evaluations. This will free up time to focus on determining the need for appropriate compensation and the use of landscape enhancement schemes.

5.5 Regionalised and Threshold-Based Cumulative Effects Assessment

Assess cumulative seascape, coastal landscape and visual effects using a regional and threshold-based approach that goes beyond project-level aggregation. Commission a meta-review of existing evidence to identify areas at risk of cumulative visual saturation and define indicative thresholds of acceptable change.

In regional strategies, distinguish between seascapes and coastal landscapes that may accommodate future development, and those that require enhanced protection or enhanced compensation. This strategic framing will inform scoping, site selection, and consenting decisions at project and plan level. Once developed, incorporate standardised approaches and thresholds into future revisions of this ERN and associated guidance, including **Annex B**.

5.6 Strategic Compensation

Where significant adverse SLVIA effects remain after mitigation, undertake early, collaborative consultation with regulators and stakeholders to explore proportionate, strategic responses. This might include identifying enhancement or stewardship opportunities that contribute positively to seascape character or understanding.

Report such measures transparently in the ES and link, where possible, to marine planning policy objectives or spatial frameworks.

6. Collaboration and Review

Through participation in the Seascape, Landscape and Visual Impact Technical Topic Group (TTG), representatives from the following organisations have contributed to this document.

Technical Topic Group representatives	
ABL Group	LUC
Abseline Landscape Planning	LDA Design
Natural England	Highland Council
Natural Resources Wales	The Crown Estate
National Trust	WSP

Document Update Roadmap

The ERN is a dynamic document designed to evolve with advancements in knowledge, technology, and regulatory frameworks. The following update schedule is proposed:

- Launch ERN as pilot for use on projects.

Short-term updates (6-12 months):

- Incorporate user feedback from pilot and update ERN.
- Assess the adoption rate of key recommendations and adjust where uptake is low.
- Launch updated and formal ERN.

Long-term updates (1+ years):

- Bi-annual meetings of the Seascape, Landscape and Visual Impact TTG will be held to review evidence and feedback.
- After 12 months the TTG will conduct a comprehensive review of the ERN's effectiveness, incorporating stakeholder surveys and case studies.
- The TTG will maintain the ERN as a live document, revising it on a regular and ad hoc basis to reflect new legislation, policy updates and stakeholder consensus.

7. References

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ANNEX A: Offshore Wind Farms

The following 79 OWF have undertaken EIAs and published information on the potential impacts in the ES and EIA reports. These assessments have informed the development of this ERN.

Atlantic Array	Kincardine
Awel y Môr	Lincs
Barrow	London Array I
Beatrice	Lynn
Beatrice Extension	Mona
Berwick Bank	Moray West
Blyth Offshore Demonstrator	Morecambe Offshore Windfarm Generation Assets
Burbo Bank	Morgan Offshore Wind Project
Burbo Bank Extension	Muir Mhor
Docking Shoal	Navitus Bay
Dogger Bank Creyke Beck	Nearr na Gaoithe
Dogger Bank South	Norfolk Boreas
Dogger Bank Teesside	Norfolk Vanguard East
Dogger Bank C	Norfolk Vanguard West
Dudgeon	North Falls
Dudgeon and Sheringham Shoal Extensions	North Hoyle
East Anglia One	Ormonde
East Anglia One North	Ossian
East Anglia Two	Outer Dowsing
East Anglia Three	Pentland
European Offshore Wind Deployment Centre (EOWDC)	Race Bank
Five Estuaries	Rampion
Forthwind	Rampion 2
Galloper	Rhyl Flats
Greater Gabbard	Robin Rigg
Green Volt	Salamander
Gunfleet Sands 1	Scroby Sands
Gunfleet Sands 3	Seagreen One A
Gunfleet Sands 3	Sheringham Shoal
Gwynt Y Môr	Teeside
Hornsea One	Thanet
Hornsea Two	Thanet Extension
Hornsea Three	Triton Knoll
Hornsea Four	Walney 1
Humber Gateway	Walney 2
Hywind	Walney 3
Inch Cape	West of Duddon Sands
Inner Dowsing	Westermest Rough
Kentish Flats	Whitecross
Kentish Flats 2 Extension	

ANNEX B: Recommended ES Structure and Format

This Annex provides topic-specific guidance for integrating SLVIA into the Environmental Statement (ES) using the standard 12-section chapter structure set out in the *OWEKH Evidence Review Note: Environmental Impact Assessment*. It is intended for technical authors preparing the SLVIA chapter, as well as EIA coordinators and reviewers seeking consistency across topics.

This table maps each of the 12 ES sections from *OWEKH Evidence Review Note: Environmental Impact Assessment* to the relevant SLVIA considerations. It is designed to support proportionate, evidence-based reporting that aligns with regulatory expectations and best practice in OWF EIA.

Chapter Section	SLVIA Considerations
1. Introduction	Briefly state that this chapter addresses seascape and coastal landscape character and visual impacts from changes to seascape and offshore views from coastal landscapes and designations. Outline the relationship with other ES chapters (e.g. marine historic environment) and confirm alignment with the scope set out in the EIA. (<i>Target length: 1 page.</i>)
2. Policy and Legislative Framework	Refer to relevant UK and devolved policies, marine plans and guidance documents (e.g. NPS EN-1 and EN-3, Marine Policy Statement, GLVIA3). Avoid lengthy quotations or duplication of public material – use references instead. (<i>Target length: 1-2 pages.</i>)
3. Study Area and Scope of Assessment	Define the spatial extent of the marine study area and the visual assessment zone. Clarify distinctions between the project area, the ZTV/ZVI study area and cumulative impact area. Note any scoping decisions, exclusions or overlaps with onshore coverage. (<i>Target length 1-2 pages.</i>)
4. Consultation	Summarise consultation with statutory and non-statutory stakeholders (e.g. NRW, Natural England, DAERA, Marine Scotland, local authorities). Highlight key issues raised and any changes to methodology, viewpoints or mitigation as a result. (<i>Target length: 1-2 pages.</i>)
5. Assessment Methodology	Describe the approach used to assess seascape character and visual amenity, including receptor sensitivity, magnitude of change and significance of effects. Confirm use of professional judgement, particularly where effects are borderline. (<i>Target length: 2-3 pages.</i>)
6. Baseline Environment	Present a concise summary of existing seascape and landscape character, Protected Landscapes, key viewpoints and visual receptors. Use tables, maps, and figures to reduce narrative length. Detailed technical data should be in appendices. (<i>Target length: 4-6 pages.</i>)
7. Design Parameters and Maximum Design Scenario (MDS)	Explain how design parameters (e.g. turbine height, layout, lighting) influence visual effects. Confirm the use of a Design Envelope and outline the parameters used for reasonable worst-case assessment. (<i>Target length: 1-2 pages.</i>)

Chapter Section	SLVIA Considerations
8. Assessment of Effects	Provide a clear, phase-by-phase assessment of predicted impacts during construction, operation and decommissioning, taking account of the assessment methodology and any issues that have been scoped out (e.g. construction and decommissioning effects). Include justification for significance conclusions. If no significant effects are expected, explain why. <i>(Target length: 4-6 pages.)</i>
9. Additional Assessments	Include any relevant cumulative, transboundary or interaction effects. Cumulative effects should be described in terms of perceptual thresholds (e.g. horizon saturation, number of visible developments) not just turbine counts. <i>(Target length: 2-3 pages.)</i>
10. Mitigation and Enhancement Measures	List all embedded and additional mitigation measures, including siting decisions, layout refinements, turbine colour and lighting design. Outline any stakeholder engagement (e.g. pre-scoping workshop) that influenced mitigation. <i>(Target length: 2-3 pages.)</i>
11. Residual Effects and Monitoring	Identify any residual effects after mitigation, clearly stating whether they are significant. Outline monitoring commitments, enforcement mechanisms and data reporting procedures. Outline any compensation measures, enhancements or community benefits. <i>(Target length: 1-2 pages.)</i>
12. Summary of Commitments	Provide a concise commitments table with: Description of each commitment. When and how it will be implemented. Mechanism for securing (e.g. DCO requirement, marine licence condition, oCEMP). Ensure consistency with project-wide commitment registers. <i>(Target length: 1-2 pages.)</i>
Appendices and Technical Outputs	Where appropriate, append or cross-reference: Desk-Based Assessments (DBA) of seascape character and viewpoints. Visualisation methodology and selected photomontages. Historic Seascape Character (HSC) assessments (where not included under marine heritage). Assessment of effects against special qualities of Protected Landscapes. Viewpoint rationale and stakeholder correspondence. GIS data layers or shapefiles supporting ZTV/ZVI analyses.

ANNEX C: Recommended Conditions and Requirements

This Annex provides a standardised framework for recording, tracking, and verifying SLVIA-related mitigation measures, commitments and post-consent requirements. It supports more consistent practice across OWF projects and aligns with the overarching guidance in *OWEKH Evidence Review Note: Environmental Impact Assessment*.

It is for use:

- At scoping, to demonstrate assumptions, mitigation measures and commitments that support a proportionate EIA scope.
- At application, to confirm how those measures have been embedded into project design and secured through DCO requirements or marine licences.
- During post-consent, to ensure implementation, monitoring and enforcement of SLVIA-related actions.

C1. Standard SLVIA Commitments

These commitments are recommended as standard practice at the scoping and pre-application stage to demonstrate early engagement, application of the mitigation hierarchy, and proportionality of assessment. They should be included in the ES and updated in the oCEMP.

1. **Minimum Distance from Shore:** For seascape and coastal landscapes that are considered particularly sensitive to adverse impacts from OWF, at the strategic plan level, avoid zoning development within 50km of shore unless justified by site constraints or policy drivers.
2. **Turbine Design Parameters:** Define a Maximum Design Scenario (MDS) including upper limits on turbine tip height, rotor diameter and lighting requirements.
3. **Turbine Colour:** Use Light Grey Turbine Colour (e.g. RAL 7035) to minimise contrast with sky and sea. This light neutral grey is the recognised industry standard for offshore wind turbines and is specified in UK maritime and aviation guidance (e.g. MCA MGN 654; IALA G1162). Research and design studies (e.g. DTI/ETSU 2005) have demonstrated that light neutral grey tones provide the lowest average visual contrast with sea and sky across the range of UK atmospheric conditions. Subsequent assessments (e.g. Sullivan et al. 2013; White et al. 2019) support this principle, confirming that turbine visibility is primarily governed by luminance contrast. While turbines may appear brighter or darker under varying light, RAL 7035 remains the most effective all-round solution for minimising visibility without compromising safety or navigational requirements.
4. **Lighting Minimisation:** Commit to minimising lighting (including intensity and direction) within statutory navigation and aviation safety constraints.

5. **Array Layout Principles:** Wherever practicable, adopt coherent and regular array layouts that produce an ordered and legible visual pattern within the seascape. From an SLVIA perspective, perceptual coherence and visual order generally reduce the sense of visual clutter and help integrate the development as a single designed element rather than a dispersed or chaotic feature. Regularity also ensures more predictable visual outcomes across viewpoints. In some locations, a degree of variation may be appropriate to respond to coastal form, cumulative context or seascape character. In such cases, departures from regularity should be clearly justified within the design narrative.
6. **Stakeholder Engagement on Key Viewpoints:** Agree viewpoints and sensitive receptors through pre-scoping workshops with LPAs, Statutory Nature Conservation Bodies (SNCBs), the Protected Landscape organisation relevant to the OWF (if not the LPA), and the public.
7. **Concise and Accessible Reporting:** Limit ES chapter to 30–40 pages, with technical detail in appendices, using tables and maps.
8. **Digital Outputs and GIS Layers:** In addition to static PDFs and maps, provide layered mapping of receptors, viewpoints, ZTVs and predicted visual effects in open data formats.
9. **Use of Dynamic Visualisation and Documentary Media:** In addition to static PDFs and maps, commit to producing engaging visualisations (e.g. fly-throughs, interactive GIS) for public understanding.
10. **Consideration of Strategic Compensation:** Where significant residual effects remain, explore opportunities for landscape stewardship, enhancement, education and cultural initiatives linked to seascape and landscape character.