LLŶR FLOATING OFFSHORE WIND PROJECT

Llŷr 1 Floating Offshore Wind Farm

Environmental Statement

Volume 6: Appendix 5A – Approach to Cumulative Effects Assessment

August 2024

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Document Status

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Acronyms and abbreviations

Acronym or Abbreviation	Definition	Acronym or Abbreviation	Definition
CEA	Cumulative Effects Assessment	NRW	Natural Resources Wales
EIA	Environmental Impact Assessment	PEDW	Planning and Environmental Decision Wales
ES	Environmental Statement	SMNR	Sustainable Management of Natural Resources
MCAA	Marine and Coastal Access Act	WNMP	Welsh National Marine Plan
MPS	Marine Policy Statement	ZoI	Zone of Influence

Glossary of project terms

Term	Definition
The Applicant	The developer of the Project, Llŷr Floating Wind Limited.
Array	All wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure within the Array Area, as defined, when considered collectively, excluding the offshore export cable(s).
Array Area	The area within which the wind turbine generators, inter array cables, mooring lines, floating sub-structures and supporting subsea infrastructure will be located.
Floventis Energy	A joint venture company between Cierco Ltd and SBM Offshore Ltd of which Llŷr Floating Wind Limited is a wholly owned subsidiary.
Landfall	The location where the offshore export cable(s) from the Array Area, as defined, are brought onshore and connected to the onshore export cables (as defined) via the transition joint bays (TJB).
Llŷr 1	The proposed Project, for which the Applicant is applying for Section 36 and Marine Licence consents. Including all offshore and onshore infrastructure and activities, and all project phases.
Marine Licence	A licence required under the Marine and Coastal Access Act 2009 for marine works which is administered by Natural Resources Wales (NRW) Marine Licensing Team (MLT) on behalf of the Welsh Ministers.
Offshore Development Area	The footprint of the offshore infrastructure and associated temporary works, comprised of the Array Area and the Offshore Export Cable Corridor, as defined, that forms the offshore boundary for the S36 Consent and Marine Licence application
Offshore Export Cable	The cable(s) that transmit electricity produced by the WTGs to landfall.
Offshore Export Cable Corridor (OfECC)	The area within which the offshore export cable circuit(s) will be located, from the Array Area to the Landfall.
Onshore Development Area	The footprint of the onshore infrastructure and associated temporary works, comprised of the Onshore Export Cable Corridor and the Onshore

Term	Definition
	Substation, as defined, and including new access routes and visibility splays, that forms the onshore boundary for the planning application.
Onshore Export Cable(s)	The cable(s) that transmit electricity from the landfall to the onshore substation
Onshore Export Cable Corridor (OnECC)	The area within which the onshore export cable circuit(s) will be located.
proposed Project	All aspects of the Llŷr development (i.e. the onshore and offshore components).
Onshore Substation	Located within the Onshore Development Area, converts high voltage generated electricity into low voltage electricity that can be used for the grid and domestic consumption.
Section 36 consent	Consent to construct and operate an offshore generating station, under Section 36 (S.36) of the Electricity Act 1989. This includes deemed planning permission for onshore works.

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5. APPENDIX 5A: APPROACH TO CUMULATIVE EFFECTS ASSESSMENT (CEA)

5.1. Introduction

1. This appendix of the Environmental Statement (ES) details the methodology used for the assessment of cumulative effects of the Llŷr project (hereafter the proposed Project), the justification for the approach taken and details the long list of projects, plans and activities that have been considered within the assessments. The general approach to the cumulative assessment is described in **Chapter 5: EIA Approaches and Methodologies, Section 5.8,** with further detail provided within this document, in **Section 5.4.**

2. As set out in PINS Advice Note 17 (PINS, 2019), cumulative effects derive from project-specific impacts which, when considered together with the impacts of other developments (existing and approved), could result in a new or different effect, or an effect of greater significance than the effects of the proposed Project when considered in isolation. The cumulative effects assessment (CEA) for the proposed Project was undertaken for each specialist topic and is included within the corresponding chapters of the ES. In Volume 2 (Terrestrial environment) and Volume 3 (Marine environment), the cumulative effects between the proposed development and other "screened in" projects are described within each topic chapter (see **Chapters 7 to 28**). Cumulative landscape, seascape, and visual effects (described in **Chapter 7** and **Chapter 23)** are also provided in **Appendix 7C: Cumulative Landscape and Visual Impact Assessment** and **Appendix 23E: Cumulative Seascape, Landscape and Visual Impact Assessment.**

3. The CEA for the proposed Project has been conducted based on the best available data from other plans, projects, activities and associated information found in the public domain, or which has been provided to the proposed Project through consultation. The assessment assumes that publicly available information is accurate and has also been informed by feedback received pre-application from a range of stakeholders to identify changes in information which may be relevant to the assessment (see **Section 5.4.1**).

4. The CEA was conducted in line with recommendations from statutory consultees provided in the Scoping Opinion.

5. A summary of stakeholder engagement which has informed the CEA is provided in **Section 5.3.**

5.2. Legislation and Policy Context

5.2.1. Legislation

6. The proposed Project is seeking a Section 36 consent with deemed Planning Permission under the 1989 Electricity Act from the Welsh Ministers, administered by Planning and Environment Decisions Wales (PEDW), and a Marine Licence under the 2009 Marine and Coastal Access Act issued by Natural Resources Wales Marine Licensing Team (NRW MLT). As discussed in **Chapter 2: Regulatory and Planning Context**, the proposed Project is required to undergo an Environmental Impact Assessment (EIA) as part of an application for Section 36 consent.

7. The 2007 Marine Works Regulations (Environmental Impact Assessment) require Applicants to assess the proposed Project's cumulative effects with other plans and projects. The 2017 amendment to the EIA Regulations provides subsequent detail on the inclusion of CEA within an ES. Schedule 4 paragraph 5 states the need for:

> *"A description of the likely significant effects of the development on the environment resulting from, inter alia:*
>
> *(e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected, or the use of natural resources*
>
> *The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development."*

8. The requirement is reiterated in the UK Marine Policy Statement (Her Majesty's Government, 2011), which states:

> *"When considering potential benefits and adverse effects, decision makers should also take into account any multiple and cumulative impacts of proposals, in the light of other projects and activities."*

And:

> *"The marine plan authority will need to consider the potential cumulative impact of activities and, using best available techniques, whether for example:*
> *The cumulative impact of activities, either by themselves over time or in conjunction with others, outweigh the benefits;*
> *A series of low impact activities would have a significant cumulative impact which outweighs the benefit; or,*
> *An activity may preclude the use of the same area/resource for another potentially beneficial activity".*

5.2.2. Policy

NSIP guidance

9. The following guidance for Nationally Significant Infrastructure Projects (NSIPs) is considered relevant to the proposed Project: the 2023 Overarching National Policy Statement (NPS) for Energy (EN-1) and the 2023 NPS for Renewable Energy Infrastructure (EN-3).

10. The most relevant sections of the EN-1, 2023 and EN-3 2023 for the cumulative effects assessment are summarised in the table below.

Table 5A-1. EN-1 and EN-3 Assessment Provisions Relevant to Cumulative Effects Assessment

NPS Reference (2023)	NPS Requirement
EN-1 4.3.3	*The ES should consider the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, transboundary, short, medium, and long-term, permanent and temporary, positive and negative effects at all stages of the project, and also of the measures envisaged for avoiding or mitigating significant adverse effects. For guidance on the assessment of cumulative effects, the PINS Advice Note 17 regarding Cumulative Effects Assessment (August 2019) to be used.*
EN-1	*The impacts of more than one development may affect people simultaneously, so the applicant should consider the cumulative impact on health in the ES where*

NPS Reference (2023)	NPS Requirement
4.4.5	*appropriate.*
EN-1 4.12.15	*The Secretary of State should be satisfied, before consenting any potentially polluting developments, that the effects of existing sources of pollution in and around the site are not such that the cumulative effects of pollution when the proposed development is added would make that development unacceptable, particularly in relation to statutory environmental quality limits.*
EN-1 5.5.40	*Any assessment of aviation or other defence interests should include potential impacts of the project upon the operation of CNS infrastructure, flight patterns (both civil and military), other defence assets and aerodrome operational procedures. It should also assess the cumulative effects of the project with other relevant projects in relation to aviation and defence.*
EN-3 2.6.89	*Where cumulative effects on intertidal habitats are predicted as a result of the cumulative effects of multiple cable routes, it may be appropriate for applicants of various schemes to work together to ensure that the number of cables crossing the intertidal zone are minimised and installation and decommissioning phases are coordinated to ensure that disturbance is also reasonably minimized.*
EN-3 2.6.92	*Where necessary, assessment of the effects on marine mammals should include details of: (…) duration of the potentially disturbing activity including cumulative/inter-related effects with other plans or projects*
EN-3 2.6.120	*Where cumulative effects on subtidal habitats are predicted as a result of the cumulative effects of multiple cable routes, it may be appropriate for applicants for various schemes to work together to ensure that the number of cables crossing the subtidal zone is minimised and installation/decommissioning phases are coordinated to ensure that disturbance is reasonably minimised.*
EN-3 2.6.157	*The navigation risk assessment will for example necessitate: (…) cumulative and inter-related risks associated with the development and other developments (including other wind farms) in the same area of sea.*
EN-3 2.6.169	*The applicant should have regard to the likely overall effect of the development in question and to any cumulative effects of other relevant proposed, consented and operational offshore wind farms.*

UK Marine Policy

11. The requirement for CEA is reiterated in the UK Marine Policy Statement (MPS). The MPS sets out the framework for preparing Marine Plans which detail priorities for future development, inform sustainable use of marine resources and help marine users understand their environment (HM Government, 2021). The MPS states that when considering potential benefits and adverse effects, decision makers should consider any multiple and cumulative impacts of proposals, in the light of other projects and activities (HM Government, 2011). The MPS also states:

"The marine plan authority will need to consider the potential cumulative impact of activities and, using best available techniques, whether for example:

- *The cumulative impact of activities, either by themselves over time or in conjunction with others, outweigh the benefits;*
- *A series of low impact activities would have a significant cumulative impact which outweighs the benefit; or*
- *An activity may preclude the use of the same area/resource for another potentially beneficial activity"*

Welsh National Marine Plan

12. The Welsh Government has developed the first marine plan for Welsh inshore and offshore waters, the Welsh National Marine Plan (WNMP). The Plan was developed in accordance with the Marine and Coastal Access Act (MCAA) 2009, the UK MPS and the Maritime Spatial Planning Directive.

13. The WNMP states that environmental impacts should be assessed both individually and cumulatively. The below policies are particularly relevant to assessment of cumulative effects for the proposed Project.

Table 5A-2 WNMP policies relevant to the assessment of cumulative effects

WNMP Reference	WNMP Policy Descriptions
Overarching Plan Objective 1	Support the sustainable development of the Welsh marine area by contributing across Wales's well-being goals, supporting the Sustainable Management of Natural Resources (SMNR) through decision making and by taking account of the cumulative effects of all uses of the marine environment.
GOV_01: Promoting Good Governance	Proposals should demonstrate that they have assessed potential cumulative effects and should, in order of preference: • Avoid adverse effects; and/or • Minimise effects where they cannot be avoided; • Mitigate effects where they cannot be minimised. If significant adverse effects cannot be avoided, minimised, or mitigated, proposals must present a clear and convincing case for proceeding. Proposals that contribute to positive cumulative effects are encouraged.

14. Further detail on legislation and policy relevant to the CEA are set out in **Chapter 2: Regulatory and Planning Context**.

5.2.3. Guidance

15. In addition to the UK NPS, MPS and WNMP, the following guidance and advice has been used to inform the scope of the cumulative effects assessment, and to assist with the identification and mitigation of potential significant effects:

- **Planning Inspectorate (PINS) Advice Note Seventeen: Cumulative effects assessment relevant to NSIPs**: Although the proposed Project is not defined as a nationally significant infrastructure project, the approach set out in this advice note is relevant. This has been applied when undertaking a staged process of identification and assessment of other planned developments within the assessment (Planning Inspectorate, 2019);

- **Strategic Framework for Scoping Cumulative Effects:** A framework for scoping cumulative effects of marine activities across the strategic, regional, and individual project level (MMO, 2014). The framework aims to provide a consistent approach to the identification and consideration of cumulative effects that can be applied at the strategic level across all relevant MMO functions. The framework is underpinned by an evidence database constructed during this work which identifies activities taking place in the marine environment, the pressures that they exert, and the receptors which may potentially be sensitive to those pressures. This has been considered by this assessment when undertaking the staged process set out below; and
- **Renewable UK Cumulative Impact Assessment Guidelines: Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms:** This report considers a number of practical solutions in order to overcome the challenges of cumulative impact assessments. These include defining what a meaningful assessment is, and tackling challenges on scoping, data, assessment and monitoring and mitigation (Renewable UK, 2013).

16. With regards to cumulative effects, PINS Advice Note 17 presents a four-stage approach to CEA that is adopted for the purposes of this ES, as described in **Figure 5A-1** and **Table 5A-3.**

17. Projects scoped into the CEA will be classed among three tiers of development, as per **Table 5A-4**. Such tiers reflect the licensing and the development status of each project based on PINS Advice Note 17. Projects that were built and operational at the time that survey data was collected are generally classified as part of the existing baseline environment. Operational projects that are built but have ongoing effects, or projects that are only partially completed at the time of data collection, are also included within the CEA.

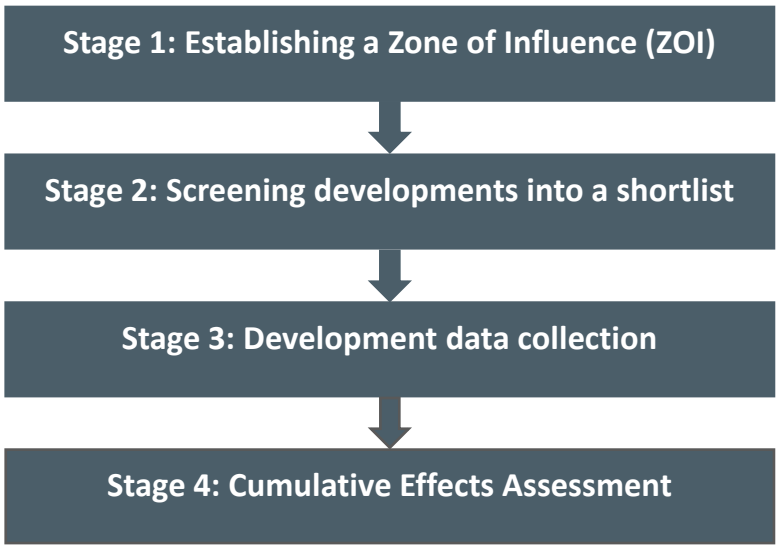


Figure 5A-1. Process of a CEA - four-stage approach

Table 5A-3. The stages of the CEA as recommended by PINS Guidance Note 17

Stage of CEA	Further Details
Stage 1: Establishing '*other existing developments and approved*	Define an initial spatial and temporal ZoI for each key identified significant effect in the ES (described within each topic chapter - see **Chapters 7 to 28**). This will inform which

Stage of CEA	Further Details
developments' and associated Zones of Influence (ZoI).	developments within the vicinity of the proposed Project should be included in the CEA.
Stage 2: Screening the long list of '*existing and approved development'* into a shortlist	Adopts a pragmatic approach as suggested in the RenewableUK Guiding Principles whereby associated developments with '*significant cumulative effect*' identified in CEA Stage 1 are screened and shortlisted for further assessment and consultation. The shortlist includes developments that have already had consent from NRW and PEDW or in the initial planning application phases whereby there is sufficient detail to undertake comprehensive CEA Stages 3 and 4. Tier 1 and 2 (**Table 5A-1**) existing and approved developments must be included in the CEA with requirement for Tier 3 developments to be included in the CEA being less detailed / stringent.
Stage 3: Development data collection	Collect relevant information and data from the list of shortlisted developments from publicly available sources and public consultations. This information should include details on the design, construction, operation, and decommissioning plans of the developments in the shortlist as well as information regarding the significant environment effects of the development.
Stage 4: Cumulative Effects Assessment	After relevant development information is collected for each development included in the shortlist a CEA can be carried out and potentially be updated if any new developments within the vicinity are given consent by NRW and PEDW. Assumptions and limitations regarding the supporting information collected in Stage 3 should be included in the CEA and worst-case scenarios should also be defined. PINS also stress that any CEA should be '*proportionate*' and '*pragmatic*'.

Table 5A-4. A summary of project development tier descriptions for use in the CEA. (PINS, 2019)

Project Tier	Description
Tier 1	Under construction. Permitted application(s), whether under the Planning Act 2008 or other regimes, but not yet implemented. submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined.
Tier 2	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has been submitted.
Tier 3	Projects on the Planning Inspectorate's Programme of Projects where a scoping report has not been submitted. Identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals. Identified in other plans and programmes (as appropriate) which set the framework for future consents / approvals, where such development is reasonably likely to come forward.

18. As part of Stage 1, the types of major developments in the wider study area that should be taken into consideration in the assessment, in line with PINS Advice Note 17 and feedback from NRW (A) during pre-application consultation, are set out below:

    - Projects started but not yet completed /under construction;
    - Consented / permitted development(s) not yet started;
    - Ongoing projects subject to repeated authorisations (e.g. annual licences);
    - Submitted application(s) not yet determined;
    - Projects not requiring consent, but which have been approved by the competent authority concerned;
    - Proposals in adopted plans and proposals in draft plans published for consultation;
    - Allocations or other forms of proposals in adopted development plans;
    - Allocations or other forms of proposals in draft development plans published for consultation;
    - Projects on the National Infrastructure Planning Portal's Programme of Projects;
    - Projects identified in the relevant development plan (and emerging development plans - with appropriate weight given as they move closer to adoption), recognising that much information on any relevant proposals will be limited; and
    - Projects identified in other plans and programmes (as appropriate) which set the framework for future development consents / approvals, where such development is reasonably likely to come forward.

19. With consideration of relevant guidance and advice received, projects that were built and operational at the time that the data was collected were excluded from the CEA, as they were considered as part of the baseline conditions. The only exception to this is operational wind farm projects, which were considered to assess collision risks and displacement impacts, in relation to ornithology receptors (see **Section 5.4.1** and **Chapter 22: Ornithology**). In accordance with PINS Guidance Note 17, a "cut-off date" should also be defined for inclusion of these developments within the CEA. Any developments at such an early stage (e.g. pre-scoping) which resulted in insufficient information being available to allow cumulative effects to be reasonably understood by the cut-off date were also omitted from the CEA. This is further described in **Section 5.4.1**.

5.3. CONSULTATION

20. The CEA approach and methodology (together with the Stage 1 long list, presented in **Annex 5A: Stage 1 Long List**) have been subject to consultation between the Applicant, NRW and various statutory and non-statutory authorities and stakeholders through the scoping and pre-application stages. This process has identified aspects of the proposed Project that have the potential to result in cumulative effects during the construction, operation and maintenance and decommissioning phases. A summary of comments raised, and responses provided related to the CEA is provided in

21. **Table** 5A-5**.** Additional consultation undertaken in relation to individual topics is described within relevant ES chapters (**Chapters 7 to 28**), as applicable**.**

Table 5A-5. Consultation relating to Cumulative effects assessment

Consultee	Consultation type and date	Summary of Comment raised	How issue has been addressed and location of response in chapter
Scoping			
Pembrokeshire County Council	Scoping Consultation (May 2022)	Raised feedback in relation to concerns regarding the number of cable route projects across the Angle Peninsula and significant infrastructure near Pembroke Power Station, noting that likely cumulative construction and operational effects need to be robustly addressed as part of the EIA.	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the cumulative effects assessments, described within **Chapters 7 to 28.**
Pembrokeshire County Council	Scoping Report for Transport (2022)	Enquiry about the use of Erebus traffic data in our report.	Agreed to use Erebus EIA traffic figure data if appropriate growth rate used.
Pembrokeshire Coast National Park	Scoping Consultation (May 2022)	Advised that effects of cable landfall and onshore works be considered in combination with other projects.	These have been included, as applicable, within the cumulative effects assessments, described within **Chapters 7 to 16**.
Trinity House	Scoping Consultation (May 2022)	Advised that a Navigation Risk Assessment should form part of the ES, and include comprehensive vessel traffic analysis in accordance with MGN 654, an assessment of cumulative and inter-related effects on shipping routes and patterns and assessment of the potential 'corridor' between the array areas, including future traffic patterns.	These impact pathways have been included within the cumulative effects assessment of shipping and navigation, described within **Chapter 25, Section 25.11**.
Maritime and Coastguard Agency	Scoping Consultation (July 2022)	Asked for shipping to be included in the cumulative and in combination effects given shipping route proximity to the potential project site and other project sites. Advised that special attention be paid to Projects Valorous and Erebus in this respect.	These impact pathways have been included within the cumulative effects assessment of shipping and navigation, described within **Chapter 25, Section 25.11**. The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA.
RSPB Cymru	Scoping Consultation (May 2022)	Sought clarification on the potential for interaction with the Greenlink interconnector cable. Noted the following additional cumulative projects: Llywelyn offshore wind, Gwynt Glas offshore wind, White Cross offshore wind, Petroc offshore wind and projects in Irish territorial waters such as the Emerald Project (offshore wind).	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA.

Consultee	Consultation type and date	Summary of Comment raised	How issue has been addressed and location of response in chapter
		Advised use of the Developments of National Significance Register, Local Development Plans, Transport Plans and National Policy Statements to identify additional cumulative projects for consideration.	
Joint Nature Conservation Committee (JNCC)	Scoping Consultation (May 2022)	Recommended that operational projects (such as operational wind farms) are considered in the cumulative effects assessment.	Operational wind farms were considered in the cumulative effects assessment of marine ornithology, described within **Chapter 22, section 22.11**.
		Noted that developments within foraging range of those SPAs scoped in for Likely Significant Effect should be included within the inter-related assessment.	These impact pathways have since been included, as applicable, within the cumulative effects assessments of terrestrial and marine ecology, described within: **Chapter 8** (**section 8.11**), **Chapter 19** (**section 19.11**), **Chapter 20** (**section 20.11**), **Chapter 21** (**section 21.11**) and **Chapter 22** (**section 22.11**).
		Identified additional projects for consideration: Round 4 preferred projects, Burbo Bank OWF, Burbo Bank Extension, Gwynt y Môr, Awel y Môr, Rhyl Flats, Robin Riggs, Walney, Arklow Bank, Celtic Interconnector (cable project).	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA.
NRW Advisory	Scoping Consultation (July 2022)	Advised the following: (i) Focus on cumulative effect on spawning and nursery grounds, including underwater noise effects; (ii) Inclusion of developments within SPA colony foraging range; and (iii) Inclusion of operational windfarms in the cumulative assessment.	The cumulative effect of the project associated with the loss of spawning and nursery grounds, as well as underwater noise effects are discussed in ES **Chapter 20, section 20.11.** Operational wind farms were considered in the cumulative effects assessment of marine ornithology, described within ES **Chapter 22, section 22.11**. All projects within the BDMPS were also included in the CEA assessment, as well as projects located

Consultee	Consultation type and date	Summary of Comment raised	How issue has been addressed and location of response in chapter
			within seabird foraging range from the focal Pembrokeshire breeding colonies (SSSP SPA, Grassholm SPA and Castlemartin SSSI).
		Advised that all developments within the Marine Mammals MU be scoped into the cumulative effects assessment (increase scoping boundaries and ZoI). Additional projects should also be investigated based on the screening exercise and MU overlay.	Marine mammal MU has been considered as part of the cumulative effects assessment, described within ES **Chapter 21, section 21.12.**
		Advised that the long list of projects and plans, identification of potential cumulative impacts for each receptor, and screening and assessment criteria be further developed. Recommend that strategic plans such as TCEs Aggregates, Floating Offshore Wind and R4 plans also be considered in cumulative assessment.	The approach, methodology and scope of the CEA has been updated to address the points raised during the scoping consultation. This is described in the present document.
		Recommended inclusion in CEA of all developments within foraging range of scoped in SPAs. Advised inclusion of Morlais Tidal Energy Development Zone, Project TIGER, Whitecross FLOW and Awel y Mor in cumulative assessment with relevant MU populations. Recommended that Rhoscrowther Wind Farm, Project Erebus and Project Valorous be included in the SLVIA cumulative assessment. Recommend that consideration be given to strategic plans, Round 4 projects and other offshore wind projects (e.g. Emerald Project).	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA.
Pre-application			
NRW Advisory	SLVIA Technical Consultation (April 2023)	Advised that NRW would expect to see a similar level of assessment as Erebus for potential for cumulative effects.	The overall LVIA study area was agreed with NRW during consultation. This area was used to determine the ZoI where potential cumulative effects were assessed in **Chapter 7, section 7.11** and **Chapter 23, section 23.11**.

Consultee	Consultation type and date	Summary of Comment raised	How issue has been addressed and location of response in chapter
NRW Advisory	Written response to request to review proposed CEA long list (July 2023)	Requested the inclusion of additional plans and projects that NRW believe warrant consideration in developing the Llŷr project CEA. Requested to confirm that the CEA screening was undertaken following the PINS Advice Note 17 "4-stage approach" and that points such as zones of influence criteria, rationale for inclusion of projects, data confidence assessments, overlap of the long-lost with the construction, operation, and decommissioning periods for Llŷr were given consideration. Advised that the CEA should be carried out by receptor as the zone of influence will not be the same for all receptors.	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA. Methodology follows PINS Advice Note 17 "4-Stage approach" (detailed in **Section 5.4**) and identified potential cumulative impacts for each receptor. The cumulative effects assessment undertaken for each specialist topic and is included within the corresponding chapters of the ES (**Chapters 7 to 28**).
NRW Marine Licensing Team	Written response to request to review proposed CEA long list (August 2023)	Provided a list of additional Plans and Projects to be included in the Llŷr project CEA, and correction towards the status of some of the marine licenses listed.	The recommended projects have been added and/or corrected on the CEA long list (**Annex 5A: CEA Long List**) for consideration within cumulative effects assessment to marine receptors, described within ES **Chapters 17 to 28**.
Pembrokeshire County Council	Meeting 02 February 2023	Raised concerns regarding timing of works with Erebus mitigation proposals (e.g. hedgerow replanting).	The CEA for terrestrial ecology and Biodiversity was assessed in **Chapter 8**, **section 8.11**. It included the cumulative effects of the Erebus project.
Pembrokeshire County Council	Request to review proposed CEA long list (July 2023)	Provided ten additional plans and projects that PCC believed needed to be included in the Llŷr project CEA.	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within cumulative effect to terrestrial receptors, assessments described within ES **Chapters 7 to 16**.
Stena Line	Regular Operator consultation 16 June 2023	Noted that other proposed projects either directly adjacent or transboundary may have a cumulative impact on operations and requested that these should be evaluated collectively in the NRA.	Cumulative effects including in relation to commercial routeing have been considered in ES **Chapter 25, section 25.11**.

Consultee	Consultation type and date	Summary of Comment raised	How issue has been addressed and location of response in chapter
Irish Ferries	Regular Operator consultation 18 July 2023	Noted that there are increased concerns around shifting traffic in the cumulative scenario.	Cumulative effects including in relation to commercial routeing have been considered in ES **Chapter 25, section 25.11**.
Royal Yacht Association (RYA)	Hazard Workshop 22 August 2023	Expect that yachtsman will pass between the Array Area and Erebus particularly where this may allow the avoidance of tanker routeing.	Cumulative effects including in relation to recreational transits with Erebus in situ have been considered in **Chapter 25, section 25.11**.
NRW Advisory	Written response to request to review proposed CEA approach and updated CEA long list (Jan 2024)	A list of additional Plans and Projects to be included in the Llŷr project CEA was provided. Provided general comments to proposed approach and methodology, as well as topic specific inputs for the following subjects: marine physical processes, seawater and sediment benthic ecology, , fish and shellfish ecology, marine mammals and ornithology, terrestrial and seascape landscape and visual.	The recommended projects have been added to the CEA long list (**Annex 5A: CEA Long List**) for consideration within the CEA. Inputs provided to the CEA methodology have been included in the present document. Technical / topic specific inputs have been included within the respective cumulative effects assessment of required topics, described within **Chapters 7**, **17**, **18**, **19**, **20**, **21**, **22** and **23.**

22. Stakeholder feedback on the proposed scope of the ES has been incorporated into the CEA. Information gathered on the projects, plans and activities screened in for assessment have been collated and input into Stage 1 of the CEA.

23. Further details of the consultation process and associated responses are presented in **ES Chapter 6: Consultations and Stakeholder Engagement**, and in **Appendix 5C: EIA Scoping Opinion Responses**.

5.4. Methodology

24. Cumulative effects are those effects upon receptors that arise from the proposed Project alongside all existing, and/ or reasonably foreseeable projects, plans and activities that could result in cumulative effects with any element of the proposed Project. The approach for CEA has been developed through the application of standard guidance and consultation with statutory consultees (described **in Section 5.3**).

25. The CEA has considered the effects on environmental resources and receptors that would likely occur from the incremental changes arising from the proposed Project in conjunction with other planned developments. The process has been guided by the following considerations:

- Understanding the temporal and spatial limits of the effects associated with the proposed Project and those of other planned developments;
- The sensitivity, value or importance of the environmental resources or receptors and their susceptibility to effects;
- Whether different types of effect would occur and interact in a way that alters their significance;
- Whether effects would be temporary or permanent, what their timescale would be, and whether the frequency of such effects would be intermittent or constant;
- Whether effects would require any additional mitigation measures to reduce their significance; and
- The degree of certainty and confidence relating to the effects.

26. PINS Advice 17: Cumulative Effects Assessment (2019) suggests that CEA follows a four-stage process (see **Table 5A-6**). The aim of this approach is to accurately determine relevant projects and associated relationships with scoped in receptors identified in the ES, to be included within the CEA.

Table 5A-6 PINS Advice 17 Stages of the CEA process

CEA Stage	Activity
Stage 1: Establishing the Long List	Determine a zone of influence (ZoI) via desk study for each topic receptor scoped into the ES. This will establish a *long list* of projects within each ZoI that will be shortlisted in Stage 2. This list of plans and projects/activities is drawn up through a desk study of planning applications, development plan documents, relevant development frameworks and any other available sources to identify 'other development' within the ZoI. Information on each project (location, development type, status, etc.) is documented, along with the certainty or tier assigned to the 'other development' (i.e. confidence it will take place in the current form and when it will take place in relation to the project). PINS notes that the project should then consult with the relevant planning authority/ authorities and statutory consultees regarding the long list.
Stage 2: Establishing the Short List	Screening of the long list identified in Stage 1, to establish a short list for the CEA. Screening is based on the criteria presented in the Scoping Report and subsequent comments by the regulator and statutory consultees. PINS has provided inclusions/ exclusion threshold criteria, against which the potential for 'other development to give rise to significant cumulative effects by virtue of overlaps in temporal scope, the scale and nature of the 'other developments' and /or receiving environment, or any other relevant factors is assessed. From this assessment, a shortlist of 'other developments' to be included in the CEA is produced. It is noted that documented information on each of the 'other developments' is likely to be high level at this stage, outlining the key issues to take forward.
Stage 3: Information Gathering	Gathering of all information available on short listed projects generated in Stage 2. At this stage, all available data and information about the shortlisted projects that will be included in the CEA is collected to inform the assessment. This should utilise the most current information for each project in the public domain and assess the assumptions and limitations of the information collected on each shortlisted project.

CEA Stage	Activity
Stage 4: Cumulative Assessment	Each of the shortlisted projects are reviewed in turn by the different receptor topics to assess whether cumulative effects may arise and the nature of those effects (i.e. beneficial or adverse). The significance of the effects on environmental receptors is established within each ES technical chapters. Where significant adverse cumulative effects are identified, mitigation measures are also considered within the CEA alongside the mechanism to secure that mitigation, e.g. consent condition requirements.

27. The following sections describe the approach taken to completing Stages 1 to 3, incorporating the development of the long list (**Annex 5A: CEA Long List**), tiering of projects and the development of the topic-specific shortlists. These shortlisted projects have been considered in detail in each of the topic-specific chapters of the ES. The short listed projects and Stage 4 (Cumulative Assessment) is presented in detail within ES **Chapters 7 to 28**.

5.4.1. Stage 1: Determine a ZoI and establish the CEA long list

28. As set out above, under the first stage of the CEA, a long list of relevant projects, plans and activities with the potential to act cumulatively with the proposed Project has been developed. These have been identified through a desktop study using data sources including the PINS website[1], The Crown Estate website[2], NRW webpage[3], Wales Planning and Environmental Decisions website[4], Wales Marine Planning portal[5], Pembrokeshire County Council webpage[6], Pembrokeshire Coast National Parks Authority webpage[7], Scottish Government's Marine Directorate[8], UK Marine Energy Database (UKMED)[9] as well as developer and project websites, press releases and relevant opensource databases[10] and information provided during consultation. The identified long list is presented in **Annex 5A: CEA Long List.**

29. The Planning Inspectorate (2019) recommends that the *spatial* and *temporal* impacts of a project be determined to assist in identifying the long list of other developments likely to result in significant cumulative effects. An initial search area from the proposed Project was defined for all developments based on a receptor/topic specific maximum ZoI.

30. For both terrestrial and marine topics, the long list was produced based on the defined search area determined by the receptor/topic specific ZoIs and these are summarised in **Table 5A-7** for terrestrial receptors (located above Mean Low Water Springs (MLWS)) and

31.

32.

[1] https://infrastructure.planninginspectorate.gov.uk/projects/wales/
[2] https://www.thecrownestate.co.uk/
[3] https://naturalresources.wales/permits-and-permissions/?lang=en
[4] https://www.gov.wales/planning-and-environment-decisions-wales
[5] https://www.gov.wales/marine-planning-portal
[6] https://www.pembrokeshire.gov.uk/planning-applications
[7] https://www.pembrokeshirecoast.wales/planning/
[8] https://marine.gov.scot/
[9] https://www.renewableuk.com/page/UKMED2
[10] TGS 4C/ Offshore database (https://www.4coffshore.com/windfarms/united-kingdom/)

33.

34. Table 5A-8 for marine receptors (located in the marine environment up to Mean High Water Springs (MHWS)). These initial ZoI ranges were based on the maximum extents of potential impact pathways arising from the proposed Project on each receptor group and hence are considered to be precautionary. The extent of the ZoIs was further screened at Stage 2: Establishing the short list, depending on topic-specific criteria. Further details on the rationale behind the ZoI extents and topic specific guidance used is provided in corresponding technical ES **Chapters 7 to 28,** as informed by appropriate evidence and consultation.

35. A temporal scope threshold was also applied to identify the long list of projects. Construction of the proposed Project is anticipated to take place in 2027 / 2028, with construction expected to occur concurrently or fall within one year of the programmed construction for cumulative construction effects to arise. Existing projects and projects that will be completed before the commencement of the Llŷr construction activities are considered as part of the baseline conditions, reported in each relevant Chapter the ES, as applicable. As above, the exception to this is operational wind farm projects, which were considered in the cumulative effects assessment for ornithology receptors, as requested by the JNCC (see

36. **Table** 5A-5) in **Chapter 22 Ornithology, section 22.11**.

37. CEA was undertaken for any new projects submitted for scoping by 31st October 2023. This allowed sufficient time for a comprehensive identification and screening of the projects (stage 2), collection of meaningful data and assessment of potential cumulative effects (stages 3 and 4). However, where projects come forward following the cut-off date it is understood that additional information may be requested during the determination period. Those projects that had not submitted a scoping report by this date or for which there was insufficient information available to allow cumulative effects to be reasonably understood by this date were not to be considered in the CEA. A small number of developments that did not meet the criteria described above were included in the CEA long list, following the direct request from NRW for its inclusion.

Table 5A-7 Proposed ZoI for the CEA for terrestrial topics (ES Volume 2)

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
Landscape and Visual	3 km from the terrestrial substation areas of search and 1 km from terrestrial cable route corridor. (described in **Chapter 7, section 7.11**)	• ZoIs established are consistent with the overall LVIA study area agreed with NRW. The area was defined by professional judgement and good practice guidance, including Visual Representation of Wind Farms (NatureScot, 2017).
Ecology and Biodiversity	5 km buffer from onshore development area and 10 km for sites designated for bats (described in **Chapter 8, section 8.4.3** and **section 8.11)**	• Although the ZoI for national and local statutory nature conservation designations (e.g. SSSIs), non-statutory nature conservation designations (e.g. SINCs) and protected and notable species is up to 2 km from the onshore development area, a precautionary 5 km from the onshore development area for international statutory nature conservation designations (e.g. SPAs, Ramsar sites, SACs) was used as maximum ZoI. • The maximum spatial extent of potential effects ZOI identified within this assessment are determined by the core sustenance zones (CSZs) for different bat species, which has been determined by the Bat Conservation Trust (BCT). A maximum of 10 km for designated sites where bats are an interest feature, to ensure impacts on commuting and foraging habitats for nationally/ internationally important populations are captured in the assessment.
Water Environment	1 km buffer from onshore development area and 2 km if immediately adjacent to watercourses) (described in **Chapter 10, section 10.4.10** and **section 10.13)**	• Based on any surface water catchments and flood risk areas that overlap with the terrestrial project activities. Up to 2 km if other developments are immediately adjacent to watercourses.
Geology and Hydrogeology	250 m from the boundary of the onshore development area. This will be extended for hydrogeology to 1 km	• The ZoI is considered appropriate to assess any influence that potential land contamination may have on developments or local sensitive receptors. .

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
	from the boundaries . (described in **Chapter 11, section 11.4.3)**	
Agriculture and Soils	Onshore development area (described in **Chapter 12, section 12.4.3)**	• No buffer was applied as the impacts to soils and agricultural land only occur on the land that is directly impacted by the terrestrial scheme.
Historic environment and cultural heritage	500 m from the edge of the RLB, expanding to 3 km buffer for designated heritage assets) (described in **Chapter 9, section 9.11.2)**	• Impacts on heritage assets during construction within 500m of the red line boundary (RLB). • The ZoI was expanded to 3 km from the boundary of the RBL, to examine the potential effect on the setting of surrounding designated receptors (scheduled monuments and listed buildings). This is based on professional judgement on previous experience and is considered to represent a proportionate approach, focused on potential for significant cumulative effects.
Air Quality	250 m buffer from terrestrial project boundary (described in **Chapter 14, section 14.4.9)**	• The 250 m buffer is the maximum distance over which fugitive dust effects from construction and demolition activities would be expected to affect human receptors.
Noise and Vibration	1 km from the terrestrial project boundary (described in **Chapter 15, section 15.10.2)**	• The area for which construction and decommissioning noise impacts are expected is 300 m from the proposed Project site (based on guidance in BS 5228-1). However, for the operational substation sites, ZoI is based on the extent of operational noise effects, which is set at 1 km. • This distance of 1km is based on professional judgement and AECOM's previous experience of energy projects and ensures that all potential impacts are captured. This is supported by the significant attenuation over the 1 km distance which result in low residual noise levels. It is considered to represent a proportionate approach, focused on potential for significant cumulative effects.
Traffic and Transport	Along B4320, Well Hill / A4139, B4319 to Clay Lane, Clay Lane, C3101, Goldborough Road and A4075. (described in **Chapter 13, section 13.3.3)**	• Projects of regional significance(*) within highway network provided between Pembroke and the Onshore Substation, export cable installation sites and landfall site, on which all construction trips are expected to pass and on which the Proposed Development is expected to have the greatest impact.
Socio-economics, Recreation and Tourism	Pembrokeshire Local Authority (described in **Chapter 16, section 16.11.2**)	• Most of the effects considered in this chapter examine local and regional socio-economic, recreation and tourism effects. As such, the proposed ZoI is the Pembrokeshire Local Authority, as this ensures the cumulative

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
		assessment considers schemes of regional and local significance.

Notes:
(*) Regional significance in the case of transport is generation of large numbers of vehicle movements that are required to utilise the strategic road network in order to access the site, either during operation, construction or decommissioning.

Table 5A-8 Proposed ZoIs for the CEA for marine topics (ES Volume 3)

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
Physical Environment	Marine area encompassing one mean spring tidal excursion ellipse* from any part of the offshore development area, including the Array Area and offshore export cable corridor (OfECC). (described in **Chapter 17, section 17.4.3 and section 17.11**).	• The mean spring tidal excursion is representative of the larger tidal ranges throughout the year. Includes all subtidal areas and coastlines that might realistically be affected by direct or indirect changes to physical processes potentially caused by the proposed Project (and therefore also the extent of potential cumulative effects with any other development). This approach is consistent with the guidance set out in Brooks et al. (2018) and in NRW Guidance GN041 (NRW, 2020). The distance up/down drift from the landfall, that littoral processes could theoretically be impacted by proposed Project infrastructure, has been defined through consideration of coastal sub-cell information set out in the Lavernock Point to St Ann's Head Shoreline Management Plan. • The distance from the Array Area that wave blockage impacts could theoretically be detected has been informed by expert judgment, drawing upon (amongst other things), the evidence base from analogous projects and consideration of the prevailing wave directions.
Marine Water and Sediment Quality	Marine area encompassing one spring tidal ellipse distance* from any part of the proposed Offshore Development Area boundary, including the Array Area and OfECC. (described in **Chapter 18, section 20.4.5** and **section 20.11**).	• Includes the extent of one tidal excursion from any part of the proposed Offshore development area boundary. This encompasses the distance over which any sediment plume would travel in relation to the proposed Project activities and outlines the area in which any deleterious substances could enter the environment from within the proposed Project boundary and be dispersed to levels that would no longer be a cause for concern.
Benthic Ecology	14.5 km from the Offshore Development Area boundary (described in **Chapter 19, section 19.11.2).**	• The most wide-ranging impacts to benthic ecology receptors relate to an increase in suspended sediment concentration, its dispersal and deposition as a result of seabed disturbance during construction. The ZOI for this pathway is determined by the nature of the sediment and the potential for it to be transported away from the site of disturbance.

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
		• The nature of the sediment in the proposed Offshore Development Area, which is generally coarse in nature and rapidly settles back to the seabed. However, disturbance from other projects may occur in finer sediments and so the maximum ZOI for CEA is taken to be 14.5 km.
Fish and Shellfish	62 km from the Offshore Development Area boundary (described in ES **Chapter 20, section 20.11.2).**	• The maximum predicted ZoI for the Project is based on potential low-level behavioural response to underwater noise effects. This distance was calculated as part of the Project specific underwater sound modelling for impact piling. • Certain projects located further from the ZoI but considered to overlap with migratory routes of certain fish species have been considered
Marine Mammals	Species specific marine mammal management units (MMMU) (described in ES **Chapter 21, section 21.12.2).**	• ZoIs established are consistent with the area agreed with NRW and JNCC. It recognises the highly mobile and transient nature of marine mammal species and the potential implications of local impacts on wider species populations.
Ornithology	Biologically Defined Minimum Population Scales (BDMPS) (described in ES **Chapter 22, section 22.11).**	• ZoIs established are consistent with the area agreed with NRW and JNCC. The ZoI for ornithology recognises the highly mobile and transient nature of seabirds and is informed, in part, by their distribution at sea (i.e. Waggitt et al, 2020) and foraging ranges from breeding colonies (i.e. Woodward, et al., 2019).
Seascape Landscape and Visual	45 km from the outer extent of the wind turbine generators (WTGs)/ Array Area. (described in **Chapter 23, section 23.11).**	• ZoI is established are consistent with the overall SLVIA study area agreed with NRW. The area was defined by professional judgement and good practice guidance, including Visual Representation of Wind Farms (NatureScot, 2017)
Marine Archaeology	Spatial extent of the offshore development area for direct impacts, and 1 km around the Array Area and 500 m either side of the OfECC as it narrows towards the Pembrokeshire coast for indirect impacts (described in ES **Chapter 24, section 24.4.6** and **section 24.11).**	• Given the highly localised nature of direct impacts on marine archaeological receptors, the ZoI for cumulative assessment is considered to be the spatial extent of the offshore development area of the Proposed Project within UK waters; and • Indirect impacts relating to burial of marine archaeological assets through sediment transport pathways.
Shipping and Navigation	50 nautical mile (nm) (92.6 km) radius from the array area	• This wide area reflects the large potential (ZoI) of the proposed Project in respect to shipping and navigation receptors and provides comprehensive local context to relevant routes

Receptor Group	Maximum ZoI	Justification of ZoI for CEA
	(described in ES **Chapter 25, section 25.11.2).**	and vessel traffic movements within and in proximity to the proposed Project. • The maximum distance is 50 nm from the array since offshore wind farms can alter vessel routeing over a wide area.
Commercial Fisheries	ICES divisions 7g (Celtic Sea) and 7f (Bristol Channel) (described in ES **Chapter 26, section 26.4.3).**	• The ZoI for commercial fisheries is considered to be representative of fishing grounds exploited by the fleets active across the study area.
Aviation and Radar	150 km radius from the array area (described in ES **Chapter 27, section 26.4.3** and **Volume 6, Appendix 27A: Aviation and radar technical study**).	• The ZoI encapsulates the array area and any other offshore wind farms in the south-eastern Celtic Sea that could have potential effects on identified civil, military aviation, airport, and radar stakeholders..
Other Sea Users	50 km buffer from the Offshore Development Area boundary (described in ES **Chapter 28, section 26.4.3**).	• The ZoI identifies other users of the sea who may be directly or indirectly affected by the proposed Project up to Marine High Water Springs (MHWS).

Notes:
(*) For the purpose of this project, the tidal excursion distance on a mean tide in the proposed Project Array Area is considered to be approximately 6 - 8 km. The tidal excursion distance on a mean tide 20 km offshore (representing the middle of the ECC) is approximately 8 - 10 km. The tidal excursion distance on a mean tide nearshore around the landfall and outside of Milford Haven is approximately 14 km.

38. The ZoIs presented above were considered appropriate and proportionate for use within the CEA and were used to develop the long list. Where relevant, the ZoIs were discussed and agreed with consultees during pre-application consultation meetings, as detailed in **Table 5A-7** and **Table 5A-8. Volume 5: Figure 5A-1, Volume 5: Figure 5A-2 and Volume 5: Figure 5A-3**, provide a visual representation of the proposed developments identified for the CEA long list, within the terrestrial and marine assessment areas. These areas cover the majority of the receptor groups with the exception of *Socio-economics, Recreation and Tourism*, *Commercial Fisheries, Marine Mammals* and *Ornithology*, and given their significantly larger ZoI assessment areas. Visual representations for these receptors are shown in the ES **Chapters 16, 21, 22** and **26**.

5.4.2. Stage 2: Shortlisting of the long list of projects

39. Following the identification of the long list of projects in Stage 1, these were reviewed and screened in each ES technical Chapter, to identify which projects were to be taken forward into the CEA, i.e. establishing the short list. Shortlisting was informed by factors including availability of published information regarding the likely environmental impacts and effects of the proposed Project; the geographical proximity (i.e. spatial overlap); and whether the proposed Project occurs at the same time (i.e. temporal overlap).

40. All plans, projects and activities in the long list were screened based on the potential impacts of each in combination with the proposed Project, depending on topic-specific criteria.

Therefore, the plan, project or activity may be screened out for assessment in relation to one receptor topic of the ES but may be screened in for another. This process therefore provides a receptor specific CEA.

41. During shortlisting, several projects were discounted from further consideration. The process for screening the longlist into a series of topic-specific shortlists is summarised in **Figure 5A-2.** Projects which were *screened out* included:

    - Projects, plans or activities included as part of the baseline environment (and hence not applicable for consideration in the CEA);
    - Projects for which no potential impact-receptor pathway exists;
    - Projects for which no potential spatial effect interaction exists;
    - Projects for which no potential temporal effect interaction exists; and/or
    - Projects with low data confidence which is described further below.

42. The availability of information necessary to conduct a CEA will depend on the status of the other developments. Only projects which are well described and provide enough information on which to base a meaningful and robust assessment can be included in the CEA. Hence, the level of confidence in the data and detail that was publicly available was also considered during the screening process. Where information was too limited and/or the level of confidence in the data available was not deemed to be sufficient, projects have been screened out of further assessment in the CEA, as the available information did not allow for meaningful assessment to be undertaken[11].

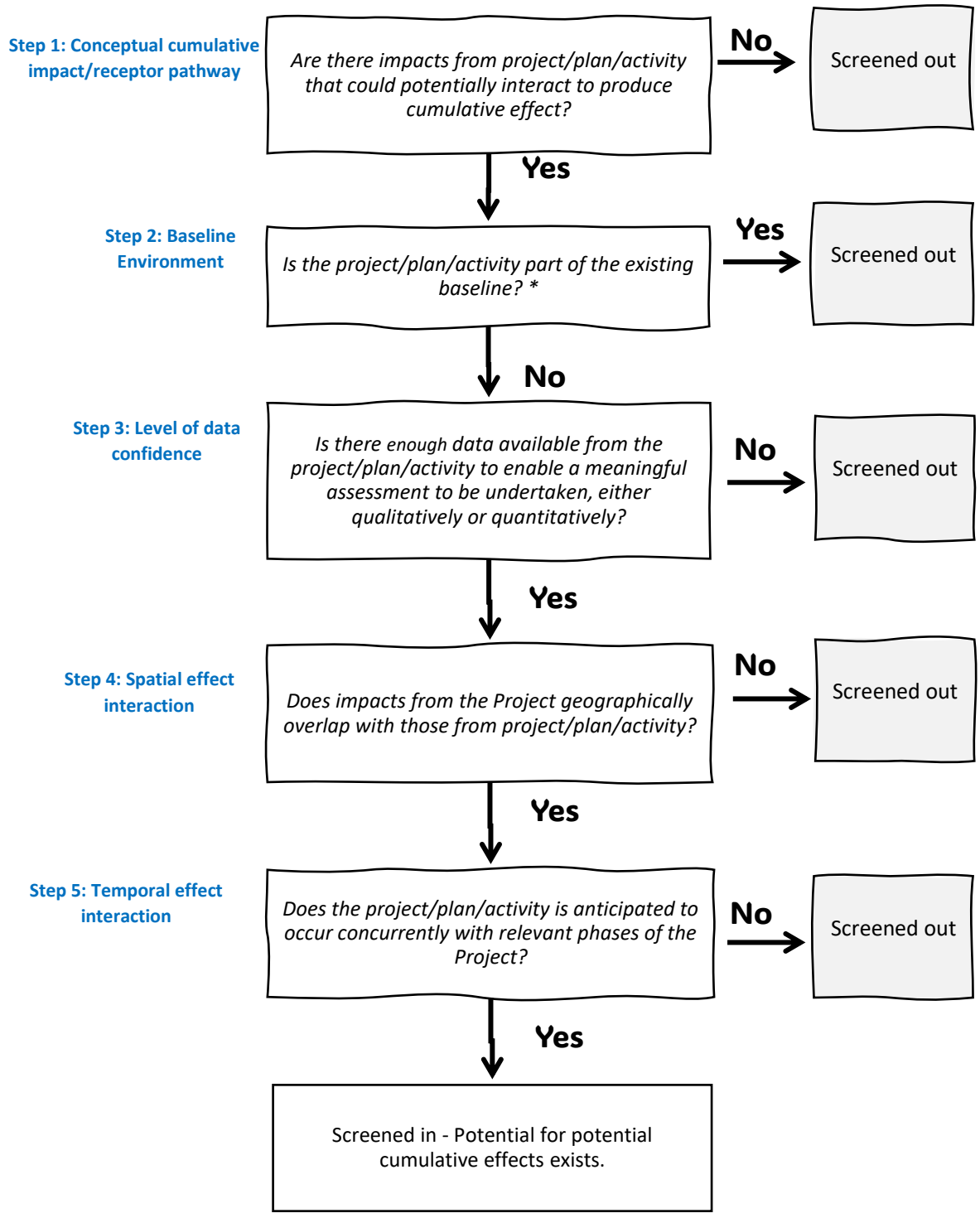
43. Projects considered to have *high data confidence* included those to which available information was deemed sufficient and was published in the public domain and confirmed as being 'accurate' by relevant authorities (e.g. Crown Estate, Planning Inspectorate).

44. *Medium data confidence* projects included those to which available information was deemed sufficient and were published in the public domain, but not confirmed as being 'accurate' by relevant authorities/stakeholders.

45. If there was *low data confidence* in relation to a development screened into the CEA project long list (e.g. no information was available on construction timelines or there were limited project details), the proposed Project was screened out of the CEA project short list in stage 2 of the CEA, as the limited information available would not allow for a meaningful cumulative assessment to be undertaken.

46. For each environmental topic, the identified short list of developments has been filtered to include those developments within the topic specific ZoI that have the potential to lead to cumulative effects. The final short list of developments screened in for CEA is presented in each topic chapter of the ES (see **Chapters 7 to 28**).

[11] It should be noted that best efforts have been made to either source publicly available information or contact appropriate developers prior to the decision to scope out a project based on lack of information. This process is in line with the guidance (MMO, 2014) and ensures that only cumulative effects for which there is a high degree of confidence are appraised.



Note
(*) Projects that are Operational, but which were considered as having an ongoing effect that is not considered part of the baseline environment were also screened in. For example, Operational wind farms were considered in the cumulative effects assessment of marine ornithology.

Figure 5A-2 Schematic representation of CEA longlist screening criteria undertaken per receptor.

5.4.3. Stage 3: Development Data Collection

47. Stage 3 of the CEA involved data gathering and review of all available information relating to the shortlisted developments, to enable a meaningful CEA to be undertaken. This included review of information sources, such as published scoping reports, environmental appraisals, and Environmental Statements. Where information was not readily available, consultation with regulators and relevant stakeholders was undertaken in order to gather the most accurate and up to date project information.

48. Information gathered on the projects, plans and activities screened in has been collated and input into Stage 4 of the CEA, which has been carried out by topic specialists on a receptor-by-receptor basis within the CEA section of each relevant ES chapter (**Chapters 7 to 28**).

5.4.4. Stage 4: Cumulative Effect Assessment

49. The potential environmental impacts of each shortlisted project, identified during Stage 2, were reviewed against those identified in the assessment of impacts for the proposed Project and appraised as to whether cumulative effects may arise. Only the impacts pathways that were assessed for the proposed Project were taken forward within the CEA.

50. For the purposes of this assessment, potential effects that have been concluded to be of negligible or neutral significance (in EIA terms) for the proposed Project in isolation were assumed to make no material contribution to any potential cumulative effect. However, professional judgement was applied and feedback from consultees was considered in topic specific CEAs to define which projects and potential impact pathways should be scoped out of the CEA. Overall, any effects of greater than negligible significance for the proposed Project alone have been considered cumulatively.

51. The assessment of significance for cumulative effects has been determined, based on the significance criteria outlined in **Chapter 5: EIA Approaches and Methodologies, Table 5-6.** Where a variation to the methodology and/or significance criteria was deemed appropriate, these are fully described in the respective topic chapters (see **ES Chapters 7 to 28**).

5.5. References

European Commission, 1999. *Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions*. [Online]. Available at: https://tethys.pnnl.gov/sites/default/files/publications/European-Commission-1999.pdf [Accessed: 20 March 2023].

HM Government. 2011. *UK marine policy statement*. [Online]. Available at https://www.gov.uk/government/publications/uk-marine-policy-statement [Accessed 20 April 2023].

HM Government. 2021. *Marine Plans in England.* [Online]. Available at https://www.gov.uk/government/collections/marine-planning-in-england [Accessed 20 April2023].

MMO. (2014). A strategic framework for scoping cumulative effects (MMO 1055). [Online] Available at https://www.gov.uk/government/publications/a-strategic-framework-for-scoping-cumulative-effects-mmo-1055 [Accessed 15 November 2023]

NRW, 2022. *Environmental Impact Assessment for marine activities.* [Online]. Available at: https://naturalresources.wales/permits-and-permissions/marine-licensing/environmental-impact-assessment/?lang=en [Accessed: 20 March 2023].

PINS, 2018. *Advice Note Nine: Rochdale Envelope.* [Online]. Available at: Advice Note Nine: Rochdale Envelope | National Infrastructure Planning (planninginspectorate.gov.uk) [Accessed: 20 March 2023].

PINS, 2019. *Advice Note Seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects*. [Online]. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/ [Accessed 20 April 2023].

Renewable UK. 2013. *Cumulative Impact Assessment Guidelines: Guiding Principles for Cumulative Impacts Assessment in Offshore Wind Farms.* [Online]. Available at: https://nerc.ukri.org/innovation/activities/energy/offshore/cumulative-impact-assessment-guidelines/ [Accessed 20 April 2023].