

17. Cumulative Effects

Executive Summary

This chapter presents information required by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. As part of the Environmental Impact Assessment (EIA) process, this Environmental Statement (ES) chapter reports the Cumulative Effects that may arise as a result of the proposed development.

Cumulative effects result from multiple impacts on receptors over time. Cumulative effects are generally described as either:

- intra-cumulative – where multiple different impacts from the proposed development result in a significant effect on a single receptor or group of receptors; or
- inter-cumulative – where effects from several different developments combine together resulting in a significant cumulative effect.

An assessment of the intra- and inter-cumulative impacts of the proposed development has been undertaken for scoped in environmental disciplines. This was undertaken to determine whether there would be any predicted cumulative effects, and whether additional mitigation measures would be required to reduce any potentially significant cumulative effects.

The intra-cumulative has been carried out by identifying residual effects on the following receptors: residents and/ or the wider community, construction personnel, ecological sites, habitats, protected species, landscape features, historic environment, water environment. No intra-cumulative significant effects are anticipated as a result of the proposed development.

Four 'other developments' were assessed for potential inter-cumulative effects:

- Proposed Residential Development, Land east of Pilgrims Way, Roch, Pembrokeshire: The cumulative effects assessment is provided in Chapter 10 (Archaeology and Built Heritage) due to potential cumulative effects on the Grade I listed Roch Castle. The assessment concluded that no significant effects are likely. For all other EIA topics, significant inter-cumulative effects are not considered likely given the residential development does not constitute an EIA development. Additionally, given the residential development is approximately 3.5 km south-east of the proposed development and the small scale of the residential development (approximately 2.65 ha), significant cumulative effects are not expected from the proposed residential development.
- Newgale Coastal Adaptation Project: The cumulative effects assessment is provided in Chapter 5 (Transport and Access) due to potential cumulative effects associated with traffic volumes. The assessment concluded that there is insufficient information available on expected construction traffic volumes at the time of writing to assess potential cumulative effects. The appointed contractor will liaise with other local development projects throughout the construction phase of the proposed development to avoid any significant overlap in works activities as much as feasibly possible. This will reduce the likelihood of significant cumulative effects for transport and access. The Newgale Coastal Adaptation Project is expected to be subject to the same legislation and best practice guidance as the proposed development. Given this, and that the two projects are independent of each other, no cumulative effects are anticipated during construction and operation on all other EIA topics.
- High-Resolution Direction Finder (HRDF) Relocation: No significant cumulative effects are expected from the HRDF Relocation.



- National Grid Electricity Distribution (NGED) Cable Connection: NGED has confirmed that the Cable Connection will consist entirely of underground cable and will not constitute EIA development. The applicant understands that NGED will be likely to carry out its works to lay cables within the public highway under its permitted development rights (as an electricity undertaker) together with relevant authority under the New Roads and Street Works Act 1991. NGED has been liaising with the South Wales Trunk Roads Agent in relation to roads under their authority to manage traffic flow. Some areas of the Cable Connection will be located in third party land, however this has not been fully defined at the time of writing. Based on the information provided by NGED with regards to the proposed Cable Connection, no significant cumulative impacts are considered to occur in combination with the proposed development.

17.1. Introduction

- 17.1.1. This chapter presents information required by the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017³⁸⁵. As part of the Environmental Impact Assessment (EIA) process, this Environmental Statement (ES) chapter reports the Cumulative Effects that may arise as a result of the proposed development. This assessment includes a review of the existing baseline conditions, consideration of the potential impacts and identification of proportionate mitigation for likely significant adverse effects resulting from the proposed development.
- 17.1.2. The approach to this assessment follows the EIA Scoping Report (March 2023) submitted to Pembrokeshire County Council (PCC) and consultation outlined in Table 17.2, and has been prepared in accordance with the EIA Scoping Opinion (May 2023) for the proposed development from PCC.
- 17.1.3. The assessment in this chapter has been undertaken in accordance with the Nationally Significant Infrastructure Projects (NSIP): Advice on Cumulative Effects Assessment (CEA)³⁸⁶.
- 17.1.4. Cumulative effects result from multiple impacts on receptors over time. Cumulative effects are generally described as either:
- intra-cumulative – where multiple different impacts from the proposed development result in a significant effect on a single receptor or group of receptors; or
 - inter-cumulative – where effects from several different developments combine together resulting in a significant cumulative effect.
- 17.1.5. An assessment of the intra- and inter-cumulative impacts of the proposed development has been undertaken for scoped in environmental disciplines. This was undertaken to determine whether there would be any predicted cumulative effects, and whether additional mitigation measures would be required to reduce any potentially significant cumulative effects.
- 17.1.6. Chapter 3 (Proposed Development) contains a detailed description of the proposed development. This chapter is supported by the following appendix and figures, and includes cross-references to other chapters and figures where appropriate:
- Appendix 17.1 (Matrix 1 Long list of other existing and or approved development); and
 - Figure 17.1 (Future Developments and Local Development Plan Allocations).

17.2. Legislation and Policy

- 17.2.1. The national legislation and regulatory frameworks applicable in this assessment for cumulative effects are summarised in this section.

Legislation

- 17.2.2. The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017³⁸⁷ (the EIA Regulations) stipulates that an EIA must consider the cumulative effects of a proposed development.

³⁸⁵ Welsh Government (2017) The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. Available at: [The Town and Country Planning \(Environmental Impact Assessment\) \(Wales\) Regulations 2017](#)

³⁸⁶ UK Government Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment>

³⁸⁷ The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017



- 17.2.3. Schedule 4 paragraph 5 of the EIA Regulations requires ‘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’ and ‘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.’

National Policy

- 17.2.4. The Planning Policy Wales (PPW) 2024 sets out the Welsh Government’s planning policy framework for the whole of Wales, including the Welsh Government’s expectation for content and quality of planning applications and local plan policy. The PPW sets out the policy which the proposed development should comply with. It is also the basis for informing a judgement on the impacts of a development, for example whether the proposed development is consistent with the requirements of the PPW. Compliance of the proposed development with the PPW is detailed within the Planning Statement.
- 17.2.5. Future Wales: The National Plan 2040³⁸⁸, is the national development framework, setting the Welsh government’s direction for development in Wales to 2040. It demands that development and use of land contribute to improving the economic, social, environmental and cultural well-being of Wales. It considers how multiple developments interact over time and space and monitoring of cumulative change.
- 17.2.6. Further information on the policies relevant to each of the technical disciplines are presented in Chapters 5 to 16.

17.3. Methodology

- 17.3.1. The following section describes the methodology used to determine the likely significant effects on Cumulative effects as a result of the proposed development.

Scope of the Assessment

- 17.3.2. The Nationally Significant Infrastructure Projects (NSIP): Advice on Cumulative Effects Assessment (CEA)³⁸⁹ has been utilised for this assessment methodology as, whilst the proposed development is not considered to be an NSIP, the principles within the advice note can be applied to this project and it is considered the most appropriate and industry recognised guidance for cumulative assessments.
- 17.3.3. The assessment includes a review of existing baseline conditions, consideration of any potential cumulative effects, and whether mitigation measures would be required to reduce any potentially significant cumulative effects.
- 17.3.4. The term ‘other developments’ refers to existing and / or approved developments included in the inter-cumulative assessment. This refers to planned and consented developments, and relevant developments and land allocations in the Pembrokeshire County Council Local Development Plan adopted in 2013³⁹⁰.

³⁸⁸ Welsh Government, 2021, Future Wales: The National Plan 2040. Available at: <https://www.gov.wales/future-wales-national-plan-2040-0>

³⁸⁹ UK Government Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment - <https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment>

³⁹⁰ Pembrokeshire County Council, 2013. Pembrokeshire County Council Local Development Plan – Adopted 2013. Available at <https://www.pembrokeshire.gov.uk/adopted-local-development-plan>

- 17.3.5. The following sources of information have been used in this cumulative assessment:
- Information provided by Pembrokeshire County Council in July 2024 including the development proposals to be considered as part of the cumulative assessment; and
 - Pembrokeshire County Council Local Development Plan³⁹¹.

17.3.6. Chapter 14 (Climate Change and Carbon) has not been considered further within this assessment for inter-cumulative effects. This is already covered within Section 14.3 of Chapter 14 Climate Change and Carbon which is inherently cumulative. The global climate has been identified as the receptor for the purposes of the greenhouse gas emissions assessment. The receptor has a high sensitivity, given the severe consequences of global climate change and the cumulative contributions of all greenhouse emission sources. As no significant effect is expected from greenhouse gases on climate change, no intra-cumulative effects are expected on other discipline topics, as shown in Table 17.3.

Spatial Scope

17.3.7. The location of the application site and key environmental constraints can be found in Figure 3.1 (Environmental Constraints).

Intra-cumulative Effects

17.3.8. The EIA discipline topics that have been scoped into this ES have detailed their individual study areas for their assessment within their respective Chapters (Chapters 5 - 16), which are prescribed by discipline-specific EIA guidance. These study areas are outlined in the methodology section of each technical ES chapter, under 'Spatial scope'. The study areas are used in this chapter to identify mutual receptors between disciplines being impacted, which has the potential to result in a cumulative effect.

Inter-cumulative Effects

17.3.9. In line with NSIP guidance, the Zone of Influence (Zoi) for scoped in environmental disciplines has been established. The Zoi is unique to each environmental discipline topic and is the area within which significant cumulative effects may potentially occur. The Zoi for each environmental discipline is detailed in Table 17.1 and based on the spatial scope of Chapters 5 - 16.

Table 17.1: Study area for each environmental topic considered in the assessment of cumulative effects

Environmental Discipline	Study Area for each Environmental Topic
Transport and Access	<p>Study area determined based on the sensitive receptors and the operational and construction traffic flows expected. Study area includes:</p> <ul style="list-style-type: none"> • A487 (between U3017 and Newgale) • A487/C3010 junction; • C3010 (Pen Y Cwm to Rhydygele); • A487/U3017 junction; and • U3017 (between its junction with A487 to Brawdy Airfield).
Air Quality	250 m from the application site boundary.
Noise and Vibration	0.6 km
Biodiversity	10 km

³⁹¹ <https://www.pembrokeshire.gov.uk/local-development-plan>



Environmental Discipline	Study Area for each Environmental Topic
Landscape and Visual Impact	15 km
Archaeology and Built Heritage	5 km
Ground Conditions and Contaminated Land	1 km
Water Environment, Flood Risk and Drainage	1 km
Socio-economics	Ranging from Pembrokeshire to UK-wide
Heat and Radiation	N/A
Lighting	2.5 km

- 17.3.10. A ZoI of 30 km was selected surrounding the proposed development as this distance was determined by professional judgement and topic-specific guidance to be the maximum distance in which existing and / or approved developments would need to be located from the proposed development to potentially result in cumulative effects for certain technical disciplines. This also accounts for all study areas within the ES environmental topics. The application of threshold criteria to scope in / out existing and / or approved is explained further under ‘technical scope’ below.

Temporal Scope

- 17.3.11. Temporal scope refers to the timescale in which the CEA extends. For the purposes of this assessment, the temporal scope is defined as both the construction and operation phases, for both the intra-cumulative and inter-cumulative assessments. The construction and operation programme is outlined in Chapter 3 (Proposed Development).

Technical Scope

Intra-cumulative Effects

- 17.3.12. Intra-cumulative effects consider the in-combination effects where receptors experience multiple potential effects, of greater than negligible significance, from a range of impacts, which might collectively become significant, or of greater significance for a single receptor. These will be considered through the use of a matrix-based approach and in line with NSIP guidance. Where cumulative impacts are identified, mitigation has been considered and residual effects reported.

- 17.3.13. Receptors of the assessment have been identified and classified as follows:

- Residents and / or the wider community;
- Construction personnel (during the construction phase only);
- Ecological sites, habitats and protected species;
- Landscape features;
- Historic environment; and
- Water environment.

- 17.3.14. There is no available technical guidance on how to ‘combine’ effects, i.e. three negligible or minor adverse impacts on one receptor do not necessarily accumulate to be a moderate or major impact. Therefore, a professional judgement-based approach has been adopted to identify material changes to receptors as a result of cumulative impacts drawing on the findings of the EIA.



- 17.3.15. The prediction and evaluation of the significance of cumulative effects have been undertaken on a topic-by-topic basis, drawing on the findings of the individual assessments (i.e. topics scoped in to the EIA and presented in Chapters 5 - 16).
- 17.3.16. The combination of intra-cumulative effects has been presented in Table 17.3.
- 17.3.17. Some environmental topics included in this assessment are inherently cumulative due to the close and evident relationship between topics for certain impacts and receptors. Where ES chapters have already considered intra-cumulative effects on a single receptor and has been reported in the chapter, this cumulative assessment does not duplicate the assessment and reporting.

Inter-cumulative Effects

- 17.3.18. NSIP guidance sets out a staged approach for assessing potential inter-cumulative effects with 'other existing and / or approved development', which was adopted for this assessment:
- Stage 1: Establish the long list
 - A long list of existing and / or approved projects was initially based on the developments included in the traffic assessment, a search of the Pembrokeshire County Council planning portal and a check of the Pembrokeshire County Council Plan Site Allocations LPD for relevant allocations within 30 km of the proposed development.
 - Consultation was undertaken with the Local Planning Authority (LPA) on this list, with the intention that additional existing and/ or approved developments would be added where relevant based on consultation feedback and a desk-based study review of local and national planning websites.
 - Stage 2: Establishing the short list
 - A short list was established detailing which existing and / or approved developments from the long list are scoped into the cumulative assessment. The long list is detailed in Appendix 17.1, and the short list is provided within the assessment section. Existing and / or approved developments were screened in or out of the assessment following the approach detailed in NSIP guidance. Existing and / or approved developments scoped in and therefore included in the short list include:
 - i. Those within the Zol
 - ii. Those that meet the 'threshold criteria' established, to ensure the assessment is proportionate
 - iii. Additional recommended existing and / or approved developments from the LPA that are within the Zol. Consultation with the LPA has been undertaken to agree the final shortlist of developments.
- 17.3.19. Existing and / or approved developments are also assigned 'Tiers', determined by the level of information available for that development. Tier 1 existing and / or approved development have a higher level of information available such as a submitted planning application, or the development is under construction. Tier 2 existing and / or approved developments have a Scoping Report submitted to the Local Authority, and Tier 3 existing and / or approved developments are allocated in the Local Plan but do not have a Scoping Report or planning application submitted to the Local Authority. Tiers assigned to each existing and / or approved development is detailed in Appendix 17.1.
- 17.3.20. The following threshold criteria was used to screen out existing and / or approved developments from the assessment, documented in Appendix 17.1:
1. It has been determined by professional judgement that only existing and / or approved developments within 30 km of the proposed development should be included in the

assessment, as this was the largest Zol identified by the technical disciplines (Table 17.1).

2. Existing and / or approved developments were screened in only if there was deemed to be an overlap in the temporal scope of the construction and operation phases. The construction programme is outlined in Chapter 3 (Proposed Development).
3. Existing and / or approved developments were only screened if it was determined that the scale and nature of the development has the potential to result in a significant effect.
4. Stage 3: Information gathering
 - NSIP guidance details Stage 3 to include gathering detailed information to inform the Stage 4 assessment. The information includes:
 - Proposed design and location information;
 - Proposed programme of construction, operation and decommissioning; and
 - Environmental assessments that set out baseline data and effects arising from the existing development and/ or approved developments.
5. Stage 4: Assessment
 - NSIP guidance details Stage 4 to comprise the assessment of cumulative effects.
 - In accordance with the EIA Regulations, where significant effects are identified, the CEA ES Chapter will describe proportionate measures to avoid, prevent, reduce or, if required and possible, offset adverse effects. The resulting residual effects will then be reported.

17.3.21. Technical discipline Chapters (Chapters 5 – 16) have considered the potential cumulative impact with the existing and / or approved developments carried through to the shortlist. This assessment is included within each respective ES chapter.

Baseline

17.3.22. The methodology for the assessment is described under 'Technical Scope'.

Guidance & Industry Standards

17.3.23. In the absence of any industry- standard guidance for carrying out intra and inter - CEA in EIA, the assessment has been carried out in line with NSIP guidance relevant to NSIP. Whilst the proposed development is not considered to be an NSIP the principles within the advice note can be applied to other projects.

Consultation

17.3.24. An EIA Scoping Report was submitted to PCC in March 2023. A Scoping Opinion was received in response to the EIA Scoping Report (May 2023). The applicant's responses to the Scoping Opinion are contained in the Scoping Opinion Response, Appendix 2.1 (Scoping Opinion Response).

17.3.25. Consultation with PCC was conducted in July 2024 including on development proposals to be considered as part of the cumulative assessment.

17.3.26. Table 17.2 summarises the consultation that has been undertaken since the receipt of the EIA Scoping Opinion.

Table 17.2: Summary of Consultation

Consultee	Form of Consultation	Topics Discussed and Actions Agreed
PCC	Emails in May 2024	Agreed search radius for the long list of inter-cumulative projects. The radius was initially 10 km around the proposed development, however due to the few results within this radius, this was increased to 30 km.

Significance Criteria

Intra-cumulative Effects

- 17.3.27. As set out in the technical scope of this chapter, significance of intra-cumulative effects is a professional judgement-based approach, drawing on the findings of the EIA, interpretation of combined impacts on a single receptor and understanding of the sensitivity of the relevant key receptors.

Inter-cumulative Effects

- 17.3.28. Significance criteria is unique to each technical discipline and is detailed within the methodology sections of Chapters 5 - 16.

Assumptions and Limitations

- 17.3.29. The construction phase and operational phase assessments have been based on the proposed development description presented in Chapter 3 (Proposed Development) and the design presented in Figure 3.1 (Proposed Development Overview) and Figure 3.2 (Proposed Construction Overview) to establish a realistic worst-case assessment scenario.
- 17.3.30. A list of existing and/ or approved developments within 10km of the site to be considered in the assessment was originally agreed with PCC in July 2024. Since then, the applicant has undertaken a search for any other potential cumulative developments, and at a meeting with PCC on 14 November 2025 confirmed there were no further developments for inclusion in the cumulative assessment. The applicant has not been made aware of any other potential cumulative developments since this date.
- 17.3.31. Limitations to the assessment and uncertainty are in relation to the uncertainty of other developments where only limited information is publicly available. This limitation has been addressed as far as possible through consultation with PCC, and adopting a worst-case approach. This assumes that when the construction start and finish dates are not available for the other developments, then either part or all of the construction phase will fall within the same period as the proposed development construction activities. In addition, the use of professional judgement based upon experience of similar assessments has been applied.

17.4. Baseline Conditions

Intra cumulative effects

- 17.4.1. Baseline conditions for each technical discipline are described in the individual discipline Chapters 5 - 16.

Inter cumulative effects

- 17.4.2. The long list of existing and / or approved developments to be assessed and included are presented in Appendix 17.1.



17.5. Design Interventions and Controls

Design Interventions

- 17.5.1. The development of the proposed design has been an iterative process. The environment team has worked in close collaboration with the infrastructure design team to avoid or reduce environmental impacts through the proposed development design. This is referred to as design interventions. The principles of the design and mitigation hierarchy outlined in Chapter 2 (Methodology) have been followed. The first principle being to avoid potential adverse effects, if at all feasible, before seeking to minimise or mitigate for any unavoidable impacts. Design interventions/Embedded mitigation for the proposed development are reported in Chapter 3 (Proposed Development).
- 17.5.2. Scheme design interventions / principles adopted to avoid or prevent adverse environmental effects are set out within the Scheme Design Report. This includes general principles and specific commitments that will inform the detailed design of the scheme. Chapter 4 (Alternatives and Design Evolution) details the design alternatives that have been considered, including the environmental factors which have influenced the decision-making.

Controls

- 17.5.3. Controls are included in EIA topic chapters and the Environmental Management Measures Table contained within Appendix A of the Framework Construction Environmental Management Plan (CEMP). The Framework CEMP has been produced in support of the planning application to present the controls and mitigation identified in the assessments. The controls include best practice measures to protect the environmental receptors and controls to achieve compliance with any relevant legislation. The Framework CEMP will be developed into the Detailed CEMP for implementation during construction and is secured by an appropriately worded planning condition. Further information on the Framework CEMP is provided in Chapter 3 (Proposed Development).
- 17.5.4. No specific design interventions and controls beyond those set out in Chapters 5-16 were required for cumulative effects.

17.6. Potential Significant Effects

Intra cumulative effects

- 17.6.1. The predicted environmental effects for the construction phase and the operational phase of the proposed development are taken into consideration with the inclusion of the design interventions, controls and proposed mitigation from the preceding chapters of the ES.
- 17.6.2. Potential construction and operational intra-cumulative effects are described in Table 17.3. If there is no pathway of interaction between the ES topics and the receptors, this has been labelled as 'N/A' in the Table. As detailed in Table 17.2, no significant combined effects are expected from the proposed development.

Table 17.3: Intra-cumulative Effects

Receptors	Technical Disciplines												Significance of intra-project effects
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat	Lighting	
Construction													
Residents and / or the wider community	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	Significant residual adverse effects principally be limited to occasional elevated areas and transient views within the PCNP to the south of the site at distances of less than 8 km.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	Significant residual landscape and visual effects are expected. The nature of this specific effect is not considered likely to give rise to significant cumulative effects.
Construction personnel (during the construction phase only)	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	N/A	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	No significant cumulative effects as no significant residual effects are anticipated for all receptors assessed.
Ecological sites,	N/A	No significant	No significant	Enhancement and ongoing	N/A	No significant	No significant	No significant	N/A	No significant	No significant	No significant	No significant cumulative

Receptors	Technical Disciplines												Significance of intra-project effects
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat	Lighting	
habitats and protected species		residual effects anticipated for this receptor.	residual effects anticipated for this receptor.	management of grassland, scrub habitat, creation of hibernacula, creation of SuDs and tree planting will have a net benefit the fungi grassland, and faunal assemblages. No significant residual effects anticipated for this receptor.		residual effects anticipated for this receptor.	residual effects anticipated for this receptor.	residual effects anticipated for this receptor.		residual effects anticipated for this receptor.	residual effects anticipated for this receptor.	residual effects anticipated for this receptor.	effects as no significant residual effects are anticipated for all receptors assessed.
Landscape features	N/A	N/A	No significant residual effects anticipated for this receptor.	Tree planting for landscape and visual screening as per Figure 3.4 (Landscape and Ecology Proposals Plan) has a net benefit impact for biodiversity.	Significant residual adverse effects principally be limited to occasional elevated areas and transient views within the PCNP to the south of	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	Significant residual landscape and visual effects are expected. The nature of this specific effect is not considered likely to give rise to significant

Receptors	Technical Disciplines											Significance of intra-project effects	
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat		Lighting
				No significant residual effects anticipated for this receptor.	the site at distances of less than 8 km.								cumulative effects.
Historic environment	N/A	N/A	No significant residual effects anticipated for this receptor.	Fungi translocation mitigation strategy requires increased area of breaking ground and risk of impacting unknown archaeology. However, no significant residual effects anticipated for this receptor with mitigation in place.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	N/A	N/A	N/A	No significant residual effects anticipated for this receptor.	No significant cumulative effects as no significant residual effects are anticipated for all receptors assessed.
Water environment	N/A	N/A	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated	No significant residual effects anticipated	No significant residual effects anticipated	N/A	No significant residual effects anticipated	N/A	N/A	No significant cumulative effects as no significant residual effects are

Receptors	Technical Disciplines											Significance of intra-project effects	
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat		Lighting
						for this receptor.	for this receptor.	for this receptor.		for this receptor.			anticipated for all receptors assessed.
Operation													
Residents and / or the wider community	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	Significant residual adverse effects principally be limited to occasional elevated areas and transient views within the PCNP to the south of the site at distances of less than 8 km.	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	Significant residual landscape and visual effects are expected. The nature of this specific effect is not considered likely to give rise to significant cumulative effects.
Ecological sites, habitats and protected species	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant cumulative effects as no significant residual effects are anticipated for all receptors assessed.

Receptors	Technical Disciplines												Significance of intra-project effects
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat	Lighting	
Landscape features	N/A	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	Significant residual adverse effects principally be limited to occasional elevated areas and transient views within the PCNP to the south of the site at distances of less than 8 km.	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated for this receptor.	Significant residual landscape and visual effects are expected. The nature of this specific effect is not considered likely to give rise to significant cumulative effects.
Historic environment	N/A	N/A	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	No significant residual effects anticipated for this receptor.	N/A	N/A	N/A	N/A	N/A	No significant residual effects anticipated for this receptor.	No significant cumulative effects as no significant residual effects are anticipated for all receptors assessed.
Water environment	N/A	N/A	N/A	No significant residual effects anticipated for this receptor.	N/A	No significant residual effects anticipated	N/A	No significant residual effects anticipated	N/A	No significant residual effects anticipated	N/A	N/A	No significant cumulative effects as no significant residual effects are

Receptors	Technical Disciplines											Significance of intra-project effects	
	Transport	Air Quality	Noise	Biodiversity	Landscape and Visual Impact	Heritage	Ground Conditions	Water	Socio-economic s	Climate	Heat		Lighting
						for this receptor.		for this receptor.		for this receptor.			anticipated for all receptors assessed.

Inter-cumulative Effects

- 17.6.3. Inter-cumulative effects consider impacts from 'other developments'. Following the long list assessment in Appendix 17.1, four other developments met the criteria established in Section 17.3 to meet the shortlist:
- Proposed Residential Development, Land east of Pilgrims Way, Roch, Pembrokeshire;
 - Newgale Coastal Adaptation Project;
 - High-Resolution Direction Finder (HRDF) Relocation; and
 - National Grid Electricity Distribution (NGED) Cable Connection.

17.6.4. Details on why these projects are considered in this CEA is provided in Table A17.1 in Appendix 17.1.

17.6.5. Overall, no other developments meet the criteria to be shortlisted, and no likely significant inter-cumulative effects have been identified.

Proposed Residential Development, Land east of Pilgrims Way, Roch, Pembrokeshire

17.6.6. The Proposed Residential Development, Land east of Pilgrims Way, Roch, Pembrokeshire, is a proposed housing development located near the Grade I listed Roch Castle. The location of this project is shown on Figure 17.1 (Future Developments and Local Development Plan Allocations).

17.6.7. Given the specific nature, the cumulative effects assessment is provided in Chapter 10 (Archaeology and Built Heritage), concluding that that no significant effects are likely. For all other EIA topics, inter-cumulative effects are not considered likely given the residential development does not constitute an EIA development. Additionally, given the residential development is approximately 3.5 km south-east of the proposed development and the small scale of the residential development (approximately 2.65 ha), significant cumulate effects are not expected from the proposed residential development.

Newgale Coastal Adaptation Project

17.6.8. The Newgale Coastal Adaptation project is a proposed new stretch of road to be built inland to provide the primary route of the A487 between Penycwm and Roch Gate. The new road will effectively bypass Newgale beach. The 2.5 km stretch would link the existing road at Penycwm with a new roundabout near Roch. The location of this project is shown on Figure 17.1 (Future Developments and Local Development Plan Allocations).

17.6.9. The Newgale Coastal Adaptation Project is a separate initiative being promoted by PCC and is entirely independent of the proposed development. The Newgale Coastal Adaptation Project project is currently in the pre-application phase, with statutory pre-application consultation for Phase 1 having concluded in May 2025.

17.6.10. It is noted that the Newgale Coastal Adaptation Project has the potential to overlap with this proposed development to result in cumulative effects on transport and access. However, there is insufficient information available on expected construction traffic volumes at the time of writing to enable the traffic effects of the scheme to be taken account of in the assessment. Overlap would only likely happen on the A487 which is not considered to experience any significant effect solely based on the proposed development.

17.6.11. The Construction Traffic Management Plan will include feasible, appropriate, and safe methods of access for construction traffic to the Proposed Development as well as aiming to reduce impacts on residents, and pedestrians (including non-motorised users) as a result.



- 17.6.12. The appointed contractor will liaise with other local development projects throughout the construction phase of the proposed development to avoid any significant overlap in works activities, deliveries, abnormal loads and traffic management measures, as much as feasibly possible. This will reduce the likelihood of significant cumulative effects for transport and access and all other EIA topics.
- 17.6.13. With effective collaboration between PCC, the proposed development and Newgale Coastal Adaptation Project, no other significant cumulative effects are anticipated for other EIA topics. The Newgale Coastal Adaptation Project is expected to be subject to the same legislation and best practice guidance as the proposed development. Given this, and that the two projects are independent of each other, no cumulative effects are anticipated during construction and operation on air quality, noise and vibration, biodiversity, landscape and visual impacts, archaeology and built heritage, ground conditions and contaminated land, surface water quality, surface water hydromorphology, groundwater or flood risk, socio-economics and lighting. Further, no potential for significant cumulative landscape and visual impacts are anticipated from the construction and operation activities due to the minimal impacts expected from the Newgale Coastal Adaptation Project. There are no sources of heat and radiation from the Newgale Coastal Adaptation Project.

High-Resolution Direction Finder (HRDF) Relocation

- 17.6.14. Currently located within Cawdor Barracks, the Direction Finder (RDF) is a remote outstation providing bearing data to the Distress and Diversion Cell at the National Air Traffic Services (NATS) Swanwick to locate and support aircraft in distress³⁹². The project includes the installation of new HRDF equipment and the demolition of current (RDF) equipment.
- 17.6.15. The HRDF is being relocated because it is nearing the end of its operational life. The existing RDF cannot be demolished until a replacement is built and fully operational. The continuity of the NATS Distress and Diversion Service capability provided by the new HRDF is a requirement imposed by the UK Civil Aviation Authority (CAA) and out with the ability of the MOD to agree a gap in capability. Therefore, rebuilding the HRDF in its current location is not feasible, as it would result in a loss of capability during the transition. As such, the decision to relocate the HRDF to a different position on-site is driven by UK CAA operational requirements.
- 17.6.16. The location of this project is shown on Figure 17.1 (Future Developments and Local Development Plan Allocations). The current RDF building is centrally located on the airfield, just to the north of the runway crossing point within a fenced area. The new HRDF location is proposed to be at the north-west end of the airfield. The expected footprint of the of the new HRDF development is anticipated to be approximately 5 m by 5 m. The system comprises a 19" cabinet for electronics, a counterpoise mounted above the building which holds the ultra-high frequency antennas in place and a mast on which the very high frequency antenna array is mounted (Aquila, 2025).
- 17.6.17. The new HRDF will be operational before DARC construction begins, therefore there will be no overlap in construction thus no cumulative impacts resulting from construction traffic, noise, light, vibration or air emissions. As clearing of vegetation for the current RDF removal and new HRDF construction and operation is not required, cumulative impacts are not expected on water, geology, soils, cultural heritage, landscape or visual receptors, or other ecology or biodiversity receptors. Due to the small scale of the HRDF and the short construction timeframe (approximately one month), prolongation of impacts when considered with DARC is not expected to be significant.
- 17.6.18. Operational cumulative impacts associated with the new HRDF and the proposed development will most likely be related to landscape and visual impacts. The closest human

³⁹² Aquila (2025), Brawdy (Cawdor Barracks) Direction Finding System Relocation Survey Report. Aquila Air Traffic Management Services Limited, 2025.

receptors to the new HRDF will be neighbouring farmers, residential properties or Newgale Lodge, which are located greater than 200 m from the new HRDF. The new HRDF infrastructure will be low profile and not highly visible. When considering impacts in association with the DARC proposed development, the new HRDF is not likely to significantly increase effects on landscape and visual receptors due to the small scale of the project.

- 17.6.19. Therefore, no cumulative impacts from the current RDF removal and new HRDF construction and operation and the proposed development are expected.

National Grid Electricity Distribution (NGED) Cable Connection

- 17.6.20. NGED will deliver the electrical supply for the proposed development to an onsite substation following the Haverfordwest substation upgrade. The onsite substation is part of the proposed development, however the connection to this substation is not. The connection will consist of two 33 kV circuits hereby called the “Cable Connection”. Once the Cable Connection is constructed it will form part of the NGED distribution network, operated and maintained by NGED.
- 17.6.21. The Cable Connection route has not been defined however NGED has confirmed that it will consist entirely of underground cable and will not constitute EIA development. The applicant understands that NGED will be likely to carry out its works to lay cables within the public highway under its permitted development rights (as an electricity undertaker) together with relevant authority under the New Roads and Street Works Act 1991. NGED has been liaising with the South Wales Trunk Roads Agent in relation to roads under their authority to manage traffic flow. Some areas of the Cable Connection will be located in third party land, however this has not been fully defined at the time of writing.
- 17.6.22. As a result of the legal advice, and as agreed with PCC, the Cable Connection does not form part of the proposed development for the purposes of a planning application or EIA for the DARC development.
- 17.6.23. Given the Cable Connection does not constitute an EIA development, and that the two projects are independent of each other, no cumulative effects are anticipated during construction and operation on air quality, noise and vibration, biodiversity, landscape and visual impacts, archaeology and built heritage, ground conditions and contaminated land, surface water quality, surface water hydromorphology, groundwater or flood risk, socio-economics and lighting. Further, no potential for significant cumulative landscape and visual impacts are anticipated from the construction and operation activities due to the minimal impacts expected from the Cable Connection. There are no sources of heat and radiation from the Cable Connection.
- 17.6.24. Therefore, based on the information provided by NGED with regards to the proposed Cable Connection, no significant cumulative impacts are considered to occur in combination with the proposed development.

17.7. Mitigation and Enhancement

- 17.7.1. No significant cumulative effects have been identified so no further mitigation is required.

17.8. Residual Significant effects

- 17.8.1. Residual effects for both the intra-cumulative and inter-cumulative are **not significant**.

17.9. Monitoring

- 17.9.1. No additional monitoring is required for cumulative effects other than the monitoring proposed, where required, in the ES Chapters 5 – 16.



17.10. Summary and Conclusions

- 17.10.1. This chapter presents a summary of the findings of the cumulative assessment of the proposed development. The assessment took account of the potential for significant cumulative effects (both inter and intra effects).
- 17.10.2. For the inter-cumulative assessment, following the long list assessment in Appendix 17.1, four other developments met the criteria established in Section 17.3 to meet the shortlist; the Proposed Residential Development, Land east of Pilgrims Way, Roch, Pembrokeshire; the Newgale Coastal Adaptation Project; the HRDF Relocation; and the NGED Cable Connection. No significant inter-cumulative effects have been identified.
- 17.10.3. For the intra-cumulative assessment, the assessment has been carried out by identifying residual effects on the following receptors, presented within Chapters 5 - 16: residents and/ or the wider community, construction personnel, ecological sites, habitats, protected species, landscape features, historic environment, water environment. No intra-cumulative significant effects are anticipated as a result of the proposed development.