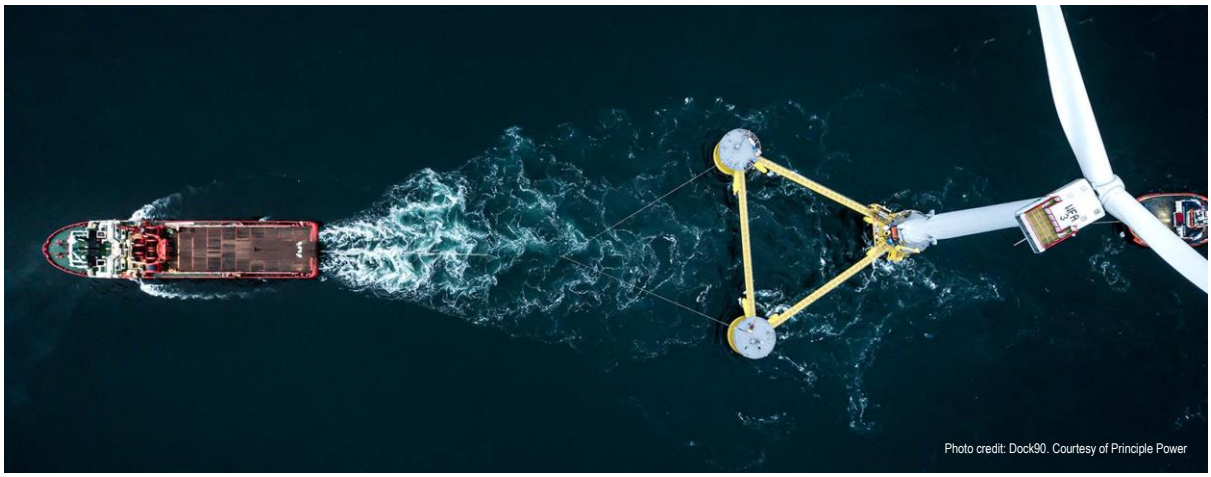

Project Erebus Environmental Statement
Technical Appendix 21.1: LANDMAP

Table of Contents

Annex 21.1 **LANDMAP**

21.1 Introduction

21.1.1.1 LANDMAP, also referred to by Natural Resources Wales (NRW) as 'the Welsh landscape baseline', is a GIS (Geographical Information System) based landscape resource and dataset *'where landscape characteristics, qualities and influences on the landscape are recorded and evaluated into a nationally consistent dataset*.' NRW has recently updated their guidance on the use of LANDMAP in LVIAs. The previous Guidance Note 3 is now titled Guidance Note 46 (GN46) 'Using LANDMAP in Landscape and Visual Impact Assessment (LVIA)' Jan 2021.

21.1.1.2 LANDMAP comprises five spatially related datasets, or aspect layers, as follows:

- Geological Landscape*: 'Considers the physical, primarily geological, influences that have shaped the contemporary landscape.'*
- Landscape Habitats: *'Focuses on recording habitat features, characteristics and their spatial relationships within the context of the wider landscape.'*
- Visual & Sensory: *'Maps landscape characteristics and qualities as perceived through our senses, primarily visually.'*
- Historic Landscape: *'Landscape characteristics that depend on key historic land uses, patterns and features.'*
- Cultural Landscape Services: *'Describes the links between landscape and people, from the way in which cultural, or human activity shapes the landscape, to the way in which culture shapes the way we respond to landscape.'*

21.1.1.3 LANDMAP divides these five aspect layers into aspect areas for which characteristics are described and each aspect area is given an evaluation score which are defined as -

- *'Outstanding: nationally important;*
- *High: regional or county importance;*
- *Moderate: local importance*
- *Low: little or no importance'*

21.1.1.4 The LANDMAP guidance defines a four-step filtering process to ascertain the aspect areas that are required to be assessed in the LVIA. The filtering approach varies depending on the aspect layers being considered and the guidance divides the approach into two distinct groups:

- Geological Landscape, Landscape Habitats and Cultural Landscape Services - the initial search area (Filter 1) includes the aspect areas that immediately overlap or are adjacent to the site boundary. Filters 2, 3 and 4 relate to the relationship to other aspect areas, theoretical visibility and evaluation scoring. This filtering process has been carried out in detail within Table 1.
- Visual & Sensory and Historic Landscape - the initial search area (Filter 1) includes the aspect areas that lie within the 3km radius study area for the proposed Substation. This is based on the table of search and study areas provided in the GN46 guidance. Filters 2, 3 and 4 relate to theoretical visibility, evaluation scoring and high sensitivity visual receptors. This filtering process has been carried out in detail within Table 2.

21.1.1.5 Aspect areas for all five aspect layers are mapped in Volume 2 Figures 21.9 - 21.13.

21.2 Geological Landscape, Landscape Habitats and Cultural Landscape Services.

21.2.1 Preliminary assessment

Table 1 – Preliminary assessment of LANDMAP Geological Landscape, Landscape Habitats and Cultural Landscape Services aspect areas

Filter 1 / 2 - Initial Search		**Filter 3** **ZTV – Yes / No**	**Filter 4** **Evaluation**	**preliminary assessment**
Aspect Area UID	**Aspect Area name**			
Filter 1 -Aspect Areas that overlap or are adjacent to the Proposed Development. Filter 2 - Geological aspect areas that have a special relationship with Filter 1 areas.		Retain aspect areas that have theoretical visibility indicated on the ZTV	Retain aspect areas that are evaluated as outstanding or high	Included in detailed LANDMAP assessment or not and description of which elements this relates to.
Geological Landscape See Figure 21.9a-b				
PMBRKGL231	Greenhill (power station)	Yes	Low	No, not evaluated as outstanding or high.
PMBRKGL233	Angle	No	Moderate	No, not evaluated as outstanding or high.
PMBRKGL234	Hundleton	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKGL235	Broomhill - Brownslade Burrows	No	Outstanding	Yes, the cable route passes through the edges of this aspect area.
PMBRKGL237	West Angle Bay - Freshwater West coast	No	Outstanding	Yes, the Landfall lies within this aspect area.
Landscape Habitats See Figure 21.10a-b				
PMBRKLH142	Broomhill Burrows	No	Outstanding	Yes, the cable route passes through the edges of this aspect area.

Filter 1 / 2 - Initial Search		Filter 3 ZTV – Yes / No	Filter 4 Evaluation	preliminary assessment
Aspect Area UID	**Aspect Area name**			
PMBRKLH376	West Angle Bay - Freshwater West	No	Outstanding	Yes, the Landfall lies within this aspect area.
PMBRKLH584	Southern coast of Daugleddau	No	High	No, whilst this aspect area lies adjacent to the Landfall, it would be undisturbed by the Proposed Development.
PMBRKLH608	N. of Castlemartin	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKLH874	West Angle Bay - Freshwater West	No	High	No, one of the Landfall options crosses this aspect area, however, it is an HDD option which would pass under it and therefore avoid any physical disturbance.
PMBRKLH940	Angle Bay - West Angle Bay	No	Moderate	No, not evaluated as outstanding or high.
Cultural Landscape Services See Figure 21.11a-b				
PMBRKCLS126	Angle	No	N/A	No. Construction effects associated with the onshore cable corridor and landfall would only be evident for localised parts of this aspect area and these temporary effects are not considered to alter its underlying cultural attributes.
PMBRKCLS122	Catlemartin	Yes	N/A	No, the onshore substation would occupy land at the eastern edges of this aspect area, however, given the substantial level of existing industrial and electrical infrastructure already found within and at the edges of this aspect area, potential effects are not considered to alter the

Filter 1 / 2 - Initial Search		Filter 3 ZTV – Yes / No	Filter 4 Evaluation	preliminary assessment
Aspect Area UID	**Aspect Area name**			
				underlying cultural attributes of the aspect area.
PMBRKCLS172	Industry/Milford Haven	Yes	N/A	No, the installation of onshore export cable would not have significant effects on the underlying cultural attributes of this industrial aspect area.
PMBRKCLS178	Wooded Valley	Yes	N/A	No, no potential for significant effects. Whilst the aspect area is immediately adjacent to aspect area PMBRKCLS122 in which the onshore substation would be located the onshore substation would have limited influence on this valley aspect area, which would retain its peaceful well wooded qualities.
PMBRKCLS137	St Ann's Head	No	N/A	No. Construction effects associated with the landfall would only be evident for localised parts of this aspect area and these temporary effects are not considered to alter its underlying cultural attributes.

21.2.2 Detailed Assessment

Table 2 – Detailed assessment of LANDMAP Geological Landscape, Landscape Habitats and Cultural Landscape Services aspect areas

Aspect Area UID and Name	Sensitivity	Magnitude of Change	significance
Geological Landscape See Figure 21.9a-b			
PMBRKGL235 Broomhill - Brownslade Burrows	Taking account of the overall Outstanding LANDMAP evaluation, value is considered to be High. The cable route would affect an exceptionally small portion of this aspect area and susceptibility is considered to be Low. Sensitivity is considered to be Medium-Low.	Disturbance to the ground for this aspect area would arise during construction of the cable route. Only an exceptionally small area of ground would be disturbed as a result of the construction activity and disturbed areas and open trenches would be returned to existing conditions at completion. The magnitude of change is considered to be Negligible.	Cable route construction effects: **negligible adverse** and **not significant** Effect is short term and reversible.
PMBRKGL237 West Angle Bay - Freshwater West coast	Taking account of the overall Outstanding LANDMAP evaluation, value is considered to be High. The landfall would only affect a small portion of this aspect area and can be largely reinstated, and susceptibility is considered to be Low. Sensitivity is considered to be Medium.	Disturbance to the ground at West Angle Bay would arise during construction of the landfall elements of the proposed Development including the following options: 1 - HDD under the beach into the field to the east of the beach car park; 2 – HDD to above the cliff south of West Angle Bay; or, 3 - to open trench across the beach area. The disturbance is of a temporary nature and disturbed areas and open trenches would be returned to existing conditions following the completion of the construction activity. The magnitude of change is considered to be Medium-Low.	Landfall construction effects: **moderate-minor adverse** and **not significant** Effect is short term and reversible.
Landscape Habitats See Figure 21.10a-b			
PMBRKLH142 Broomhill Burrows	Taking account of the overall Outstanding LANDMAP evaluation, value is considered to be High. The cable route would affect an exceptionally small portion of landscape habitat of this aspect area and susceptibility is considered to be Low.	Potential effects in this aspect area are limited to physical effects resulting from the onshore export cable construction within a small corner of this aspect area. The onshore cable corridor would pass through grazing land in this aspect area and the larger areas of dune grassland to the south would be unaffected by the Proposed Development. Once construction is completed disturbed land will be returned to its existing	Onshore export cable construction effects: **negligible adverse** and **not significant**

Aspect Area UID and Name	Sensitivity	Magnitude of Change	significance
	Sensitivity is considered to be Medium-Low.	condition. The magnitude of change is considered to be Negligible.	Effect is short term and reversible.
PMBRKLH376 West Angle Bay - Freshwater West	Taking account of the overall Outstanding LANDMAP evaluation, value is considered to be High. The landfall would only affect a small portion of this aspect area and susceptibility is considered to be Low. Sensitivity is considered to be Medium.	Potential effects in this aspect area are limited to physical effects resulting from the cable route construction activities. The aspect area is intertidal and covers the beach area and the rocks below the cliffs. The landfall elements of the Proposed Development including the following options: 1 - HDD under the beach into the field to the east of the beach car park; 2 – HDD to above the cliff south of West Angle Bay; or, 3 - to open trench across the beach area. The disturbance is of a temporary nature and disturbed areas and open trenches would be returned to existing conditions following the completion of the construction activity. Within this intertidal area of West Angle Bay, the physical effect on landscape habitats would be minimal and the magnitude of change is considered to be Low.	Cable route construction effects: **minor adverse** and **not significant** Effect is short term and reversible.

21.3 Visual & Sensory and Historic Landscape

21.3.1 Preliminary assessment

Table 3 – Preliminary assessment of LANDMAP Visual & Sensory and Historic Landscape aspect areas

Filter 1 – aspect areas within search area		**Filter 2** **ZTV – Yes / No**	**Filter 3 / 4[1]** **Evaluation**	**preliminary assessment**
Aspect Area UID	**Aspect Area name**			
Include all aspect areas within 3km of the proposed Substation		Retain aspect areas that have theoretical visibility indicated on the ZTV	Filter 3 - Retain aspect areas evaluated as outstanding or high	Included in detailed LANDMAP assessment or not and description of which elements this relates to.
Visual and Sensory See Figure 21.13a-b				
PMBRKVS061	Castlemartin	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKVS067	Pembroke Dock	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKVS068	Hill Mountain	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKVS090	Industry/Milford Haven	Yes	Low	No, not evaluated as outstanding or high.
PMBRKVS091	Wooded Valley	Yes	High	No, no potential for significant effects. Whilst there is limited theoretical visibility from this narrow aspect area, actual visibility of the proposed Substation would be further

[1] Filter 4 – Retain all filter 3 aspect areas that are within the study area plus those aspect areas outside the study area but might contain highly sensitive visual receptors within the search area.

Filter 1 – aspect areas within search area		Filter 2 ZTV – Yes / No	Filter 3 / 4[1] Evaluation	preliminary assessment
Aspect Area UID	**Aspect Area name**			
				restricted limited due to the wooded characteristic of the aspect area.
PMBRKVS098	Estuarine Mud	Yes	High	No, no potential for significant effects. This aspect area is heavily influenced by the existing industrial context of Milford Haven. Potential effects of the onshore substation from this aspect area would largely be limited due to distance. Where the aspect area is closer to the onshore substation the ZTV shows more limited visibility and intervening landscape elements further restrict actual visibility.
Historic Landscape See Figure 21.12a-b				
PMBRKHL43875	Pembroke Dock	Yes	High	Yes, the onshore substation is visible from this aspect area across the Pembroke River.
PMBRKHL43879	Gulf Oil Refinery	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKHL43882	Pembroke Power Station	Yes	Low	No, not evaluated as outstanding or high.
PMBRKHL43914	Carew Milton and Nash	Yes	Outstanding	No, no potential for significant effects. The onshore substation is visible from the western parts of this aspect area, however, the key historical aspects of the area are found further to the east which has more restricted visibility of the Proposed Development.
PMBRKHL43915	Hundleton & Maiden Wells	Yes	Moderate	No, not evaluated as outstanding or high.

Filter 1 – aspect areas within search area		Filter 2 ZTV – Yes / No	Filter 3 / 4[1] Evaluation	preliminary assessment
Aspect Area UID	**Aspect Area name**			
PMBRKHL43916	Texaco Oil Refinery	Yes	Moderate	No, not evaluated as outstanding or high.
PMBRKHL43920	Rhoscrowther	Yes	High	Yes, the onshore substation lies within this aspect area and potential visibility is found across its eastern area.
PMBRKHL46189	Castlemartin Corse	No	High	No, no theoretical visibility.
PMBRKHL46190	Castlemartin - St Twynells		High	No. No potential for significant effects. The ZTV shows theoretical visibility of the onshore substation within this aspect area is of limited extent and actual visibility is further limited by distance and landscape elements in neighbouring aspect areas that intervene.
PMBRKHL46191	Orielton	Yes	Outstanding	No. No potential for significant effects. The ZTV shows theoretical visibility of the onshore substation within this aspect area is of limited extent and actual visibility is further limited by distance and landscape elements in neighbouring aspect areas that intervene.

21.3.2 Detailed Assessment

Table 4 – Detailed assessment of LANDMAP Visual & Sensory and Historic Landscape aspect areas

Aspect Area UID and name	Sensitivity	Magnitude of Change	significance
Visual and Sensory - (no Visual and Sensory aspect areas considered to require detailed assessment following preliminary assessment[2])			
Historic Landscape See Figure 21.12a-b			
PMBRKHL43875 Pembroke Dock	Taking account of the overall High LANDMAP evaluation, value is considered to be High. The proposed Substation is only visible from a small portion of this aspect area at distance and susceptibility is considered to be Low. Sensitivity is considered to be Medium.	The onshore substation would be seen from Pennar, which is a small part of this aspect area, see also viewpoint 5. From the remaining areas of Pembroke Dock, which forms the focus of the aspect area and its historic characteristics, there is no visibility of the onshore substation. From Pennar, the onshore substation would appear as a distant structure within a similar context to the large scale electricity infrastructure associated with Pembroke Power Station to the west on the opposite side of the Pembroke River. As a result, the onshore substation would only have a very small and indirect influence on the key historic characteristics of this aspect area. Taking all of this into account, the magnitude of change is considered to be Negligible during construction and operation (year 1 and year 15).	Onshore substation Construction and operational (year 1 and year 15) **negligible** and **not significant** Effect is adverse, long term and reversible.
PMBRKHL43920 Rhoscrowther	Taking account of the overall High LANDMAP evaluation, value is considered to be High. The Proposed Development would have a direct influence on this aspect area local to the site and an indirect association with the agricultural context of the site and surrounding fields.	The aspect area's historical characteristics are largely defined by the historic pattern of the landscape of agricultural fields and scattered settlement. The introduction of the onshore substation would remove part of the field at the substation site from agricultural use and alter the localised agricultural context of immediately surrounding fields. Overall, the Proposed Development	Onshore substation Construction and Operational (year 1) **moderate** and **not significant**

[2] The preliminary assessment is in line with LANDMAP Guidance Note 046.

Aspect Area UID and name	Sensitivity	Magnitude of Change	significance
	Susceptibility is considered to be Medium-Low. Sensitivity is considered to be Medium-High.	would have a minimal influence on the pattern of the landscape and any disruption to field boundaries would be restored following completion of construction activities. Taking all of this into account, the magnitude of change is considered to be Low-Medium during construction and operation in year 1, reducing to Low in year 15 once the substation planting has matured and the pattern of the surrounding landscape is fully restored.	Operational (year 15) **moderate-minor** and **not significant** effect is adverse, long term and reversible.