Awel y Môr Offshore Wind Farm

Category 6: Environmental Statement

Volume 3, Chapter 13: Onshore Conclusions

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AWEL Y MÔR
Offshore Wind Farm

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Abbreviations and acronyms

TERM	DEFINITION
AyM	Awel y Môr Offshore Wind Farm
ATR	Active Travel Route
BOAT	Byway Open to all Traffic
CIEEM	Chartered Institute of Ecology and Environmental Management
CoCP	Code of Construction Practice
CTMP	Construction Traffic Management Plan
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EMF	Electromagnetic Fields
ES	Environmental Statement
EPSL	European Protected Species Licence
FCA	Flood Consequence Assessment
GCN	Great Crested Newt
HDD	Horizontal Directional Drill

TERM	DEFINITION
LAI	Local Area of Influence
LSA	Local Study Area
NVMP	Noise and Vibration management Plan
OnSS	Onshore Substation
ORAR	Off Road Access Route
OCOCP	Outline Code of Construction Practice
PEIR	Preliminary Environmental Information Report
PPEIRP	Pollution Prevention and Emergency Incident Response Plan
PRoW	Public Right of Way
SMP	Soil Management Plan
WTG	Wind Turbine Generator

13 Onshore conclusions

13.1 Introduction

1 This chapter of the Environmental Statement (ES) presents a summary of the key environmental issues associated with the onshore aspects of the Awel y Môr Offshore Wind Farm (AyM), as identified in the environmental impact assessment work carried out to date. The content of this summary section is taken from the individual topic-specific chapters contained in Volume 3 of the ES.

2 The potential effects of the proposed development were identified and then assessed by considering both the magnitude of impact (which may include spatial extent, duration, and frequency) and the sensitivity of the receptor (which may consider vulnerability, recoverability, and importance of the receptor) for each potential impact.

3 The significance of effect was judged according to a matrix such as that illustrated in Table 2 of Volume 1 Chapter 3: Environmental Impact Assessment (EIA) Methodology (application ref: 6.1.3). Effects arising, both adverse and beneficial, were graded on a scale ranging from 'Negligible' to 'Major'. Effects rated as 'Moderate' or 'Major' are considered to be 'significant' in EIA terms and will usually require mitigation. Effects rated as 'Minor' or 'Negligible' are not considered to be significant in EIA terms. However, there are exceptions to this for certain topics such as in Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.3.5), where the ecological evaluation and impact assessment approach is based on CIEEM Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (CIEEM, 2018, updated in September 2019), which are widely regarded as industry best practice. Where such variations to the standard approach have been adopted, this is clearly set out within the individual topic chapter.

4 In order to provide a full summary of the potential effects to the onshore components of AyM, all impacts have been listed in summary tables below in Section 13.3.

5 Where proposed, additional mitigation measures to address the key issues are included and the significance of the residual effect is provided. There are a range of embedded mitigation measures (built into the project design) which have been drawn from the impact assessment process, described within the Schedule of Mitigation (application ref: 8.11). The assessment of effects has therefore taken into account of all measures that form part of the proposed development process and to which Awel y Môr Offshore Wind Farm Limited (the Applicant) is committed.

13.2 EIA outcomes

6 The EIA process has been carried out with reference to accepted methods covering the approach to defining baseline conditions, methods for assessment, definitions and criteria for identifying potential impacts, and ascribing significance levels to potential effects.

7 Consultation has also played a key role in this, with stakeholders and statutory bodies inputting to the methodologies and scope of assessments to ensure that all relevant issues have been fully considered. This ES is a detailed summary of the assessments carried out to date and the ES clearly identifies significant effects, where these are considered likely to occur, and any necessary mitigation measures to reduce such effects.

13.3 Key conclusions of the assessment

8 Based on the results of the EIA undertaken against the worst-case scenario and reported in this ES, the onshore components of the proposed AyM development are predicted to result in a limited number of significant adverse effects. These are listed in the following tables along with additional proposed mitigation measures, where appropriate, and the residual significance of effect once the proposed mitigation has been applied.

13.3.2 Landscape and visual

Table 1: Summary of predicted construction effects on landscape and visual receptors from onshore infrastructure.

RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF CHANGE	EFFECT
CONSTRUCTION			
Physical landscape effects			
Agricultural Land	Medium – Low	Medium – Low	Minor (Not Significant)
Hedgerows	Medium	Medium – Low	Moderate-Minor (Not Significant)
Taller hedgerows and hedgerow trees found along the onshore ECC.	Medium – High	Medium	Moderate (Significant)
Trees within the OnSS site area.	Medium – High	High	Major (Significant)
Coastal Landscape	Medium	Low	Minor (Not Significant)
Landscape character effects (OnSS)			
A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes)	Medium	High	Moderate-Major (Significant)
C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills)	Medium	Medium - Low	Moderate-Minor (Not Significant)
Bodelwyddan Park RHPG	Medium - High	Medium - Low	Moderate (Not Significant)
Visual effects (cable route and landfall)			
Wales Coast Path, NCR 5	Medium - High	Low	Moderate-Minor (Not Significant)
Visitors to the Robin Hood Holiday Park	Medium	Medium - Low	Moderate-Minor (Not Significant)
Chester to Holyhead railway line	Medium	Medium	(Not Significant)
PRoW to the south of Rhyl between the B5119 and A547 (including the North Wales Path)	Medium - High	Medium	Moderate (Significant)
Bryn Celyn Cottages	High	Low Section C western option: Medium - Low	Moderate-Minor (Not Significant)

RECEPTOR	SENSITIVITY OF RECEPTOR	MAGNITUDE OF CHANGE	EFFECT
Bryn Cwnin Farmhouse	High	Negligible	Minor (Not Significant)
Bryn-y-wal Farm,	Medium – High	Medium - Low	Moderate (Not Significant)
Cwybr Bach	Medium – High	Medium - High	Moderate – Major (Significant)
Plas Lorna;	Medium - High	High	Major (Significant)
Cwybr Fawr	Medium	Medium	Moderate (Not Significant)
Faenol-Bropor	High	High	Major (Significant)
Bridlepath (PRoW 201/9) to the north of the OnSS zone	Medium	High	Moderate – Major (Significant)
B5381 Glascoed Road	Medium	High	Moderate – Major (Significant)
Waen Meredydd	Medium	Medium-High	Moderate (Significant)
visual effects (OnSS)			
Viewpoint 1 - Bridlepath near Faenol-Bropor	Medium	High	Moderate-Major (Significant)
Viewpoint 2 - St Asaph, Business Park	Medium - Low	Medium - Low	Minor (Not Significant)
Viewpoint 3 – Glascoed Rd	Road Users Medium - Low	High	Moderate (Significant)
	Residential Medium - High	High	Major (Significant)
The Denbighshire Memorial Park and Crematorium	Medium - High	High	Major (Significant)
Viewpoint 4 - A55	Medium - Low	Medium	Moderate-Minor (Not Significant)
Viewpoint 5 - Minor Rd, Groesffordd	Medium - High	Medium	Moderate (Significant)

Table 2: Summary of predicted operational effects on landscape and visual receptors from onshore infrastructure.

RECEPTOR	SENSITIVITY	MAGNITUDE OF CHANGE	EFFECT	MAGNITUDE OF CHANGE	RESIDUAL EFFECT
		YEAR 1	YEAR 1	YEAR 15	YEAR 15
OPERATION					
Landscape character effects (OnSS)					
A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes)	Medium	Medium - High	Moderate and (Significant)	Medium	Moderate (Not Significant)
C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills)	Medium	Medium - Low	Moderate-Minor and (Not Significant)	Low	Minor (Not Significant)
Bodelwyddan Park RHPG	Medium - High	Medium - Low	Moderate and (Not Significant)	Low	Moderate-Minor (Not Significant)
Visual effects (OnSS)					
Viewpoint 1 - Bridlepath nr Faenol-Bropor	Medium	High	Moderate-Major and (Significant)	Medium - High	Moderate (Significant)
Viewpoint 2 – St Asaph, Business Park	Medium – Low	Medium	Minor and (Not Significant)	Medium	Minor (Not Significant)
Viewpoint 3 – Glascoed Rd	Road Users Medium – Low	Medium – High	Moderate and (Significant)	Low	Minor (Not Significant)
	Residential Medium - High	Medium - High	Moderate-Major and (Significant)	Low	Moderate-Minor (Not Significant)
The Denbighshire Memorial Park and Crematorium	Medium - High	Medium - High	Moderate-Major and (Significant)	Low	Moderate-Minor (Not Significant)
Viewpoint 4 - A55	Medium - Low	Medium	Moderate-Minor and (Not Significant)	Low	Minor (Not Significant)
Viewpoint 5 – Minor Rd, Groesffordd	Medium – High	Medium	Moderate and (Significant)	Medium - Low	Moderate (Not Significant)

13.3.3 Socio Economic

Table 3: Summary of predicted effects on Socio Economic Receptors

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Employment (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not significant)
Employment (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not significant)
The economy (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not significant)
The economy (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not significant)
Community Facilities Local Area of influence (LAI)	Negligible (Beacon Baptist Church, St Illud's RC Church, Ysgol Bryn Hedydd, Sea Bank Surgery, Rhuddlan Clinic, and The Rhuddlan Surgery); and Low (for North Wales Bowls Centre, Festival Church Prestatyn and, Parish Church of St Mary)	Medium	Working hours Rolling construction Noise and Vibration Management Plan (NVMP) Perimeter fencing	Minor adverse (Not significant)
Healthcare Services Local Study Area (LSA)	Negligible	Medium	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor adverse (Not significant)
OPERATION				

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Employment (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	*Minor beneficial* (not significant)
Employment (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	*Minor beneficial* (not significant)
The economy (North Wales)	Low	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Moderate beneficial (significant)
The economy (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (not significant)
DECOMMISSIONING				
It is assumed that the residual effect for all socio-economic receptors will mirror (but are likely to be lower in magnitude) to the project's construction phase. Based on the assessment, it is anticipated that the decommissioning of AyM will have a *minor beneficial* (i.e. not a significant effect) on the North Wales economy.				
CUMULATIVE EFFECTS				
Impact of construction on employment (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)
Impact of construction on employment (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)
Impact of construction on the economy (North Wales)	Low	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Moderate beneficial (Significant)
Impact of construction on the economy (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Impact of construction on demand for healthcare services Local Study Area (LSA)	Low	Medium	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor adverse (Not Significant)
Impact of operations on employment (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)
Impact of operations on employment (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)
Impact of operations on the economy (North Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)
Impact of operations on the economy (Wales)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 3: Socio-economics (application ref: 6.3.3)	Minor beneficial (Not Significant)

13.3.4 Tourism and recreation

Table 4: Summary of predicted effects on Tourism and recreation receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Impact of construction on onshore recreation	Landfall construction negligible to low depending on receptor; Cable installation – no change (River Clwyd), negligible (Bruton Park, NCN84 and North Wales Path), low (cycleways and PRoWs).	High - NCN5, Wales Coast Path , Bruton Park/ Maes Bruton and Footpaths 206/30 & 206/29. NCN84 and North Wales Path; Low or Medium – Ffrith Beach, Ffrith Park, Link Path, A548 Cycleway, Byway open to all traffic (BOAT) 206/44, Footpaths 206/20 and 201/12, Pentre Lane, Bridleways 206/12, 201/10 and 201/9.	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant) effect on all onshore recreation receptors identified.
Impact of construction on offshore recreation	Landfall construction – negligible; Turbine foundation and seabed preparation – low; Installation of turbine and (offshore) substation foundations – medium; Installation of export and array cables – medium; and Installation of WTG and offshore substation(s) – medium.	Low – bathing, water sports, scuba diving and recreational sailing.	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant) for all offshore receptors.
Impact of construction activity on tourism receptors	Negligible – Ffrith Park/ Ffrith Beach Arena Park, Rhuddlan Local Natural Reserve, Pen-Y-Ffrith Caravan Park, Astrobowl and Rhyl Golf Club; Low – North Wales Bowls Centre, Rhuddlan Castle and Rhuddlan Golf Course;	Low – North Wales Bowls Centre, Rhyl Golf Club, Ffrith Park/ Ffrith Beach Arena Park, Pirate Island Golf, Rhuddlan Local Natural Reserve, Lyons Robin Hood Holiday Park, New	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant) for Pirate Island Golf, Astrobowl, Lyons Robin Hood Holiday Park, New Pines Holiday Home Park, North Wales Bowls Centre, Rhuddlan Castle, and Rhuddlan Golf Club;

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
	Medium – *Pirate Island Golf*	Pines Holiday Home Park and Rhuddlan Golf Club; and Medium – Rhuddlan Castle and Astrobowl		Negligible (Not Significant) for Rhyl Golf Club, Pen-Y-Ffrith Caravan Park, Ffrith Beach Touring Caravan Park, Ffrith Park/ Ffrith Beach Arena Park, ad Rhuddlan Local Natural Reserve.
Impact of construction activity on volume and value of the tourism economy	Negligible on local impact area as a whole Rhyl, Prestatyn, Kinmel Bay and Abergele – negligible Abergele to Rhos-on-Sea (including Colwyn Bay) – negligible; and Great Orme and Llandudno – low in short term only	High	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse on local impact area as a whole (Not Significant) Moderate adverse (Significant) for Great Orme and Llandudno in short term only. Minor adverse (Not Significant) for Rhyl, Prestatyn, Kinmel Bay and Abergele; and Abergele to Rhos-on-Sea.
Impact of construction activity on displacement of tourism visitors	Low (overall) Mostyn – negligible; Rhyl – negligible; Conwy – negligible; Port Penrhyn – low; and Holyhead – negligible.	Medium	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	(Overall) Minor adverse (Not Significant) Minor adverse (Not Significant) for Mostyn, Rhyl, Conwy, Port Penrhyn and Holyhead
OPERATION				
Impact of operational activity on onshore recreation	Generally negligible increasing to low when repairs are required	Same as per construction phase	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Generally negligible/ minor adverse (Not Significant), increasing to moderate adverse (temporarily Significant) on local (i.e. affected) receptors if repairs are needed.
Impact of operational activity on offshore recreation	Generally negligible, with potential to increase to low when repairs are required	Same as per construction phase	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant) for scuba diving.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
				Negligible (Not Significant) for bathing, water sports and recreational sailing.
Impact of operational phase on visitor receptors	Generally negligible, with potential to increase to low when repairs are required	Same as per construction phase	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant) for all receptors.
Impact of operational phase on the volume and value of tourism economy	Negligible for the Rhyl, Prestatyn, Kinmel Bay and Abergele area and the Abergele to Rhos-on-Sea (including Colwyn Bay) area Low for the Llandudno and Great Orme area in short term and negligible in longer term	High	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor (Not Significant) for the Rhyl, Prestatyn, Kinmel Bay and Abergele area and the Abergele to Rhos-on-Sea (including Colwyn Bay) area *Moderate* adverse (Significant) for the Llandudno and Great Orme area in the short term; *Minor* in the longer term (Not significant).
DECOMMISSIONING				
It is assumed that the residual effect for all tourism and recreation receptors will mirror (but are likely to be lower in magnitude) to the project's construction phase. Based on the assessment, it is anticipated that the decommissioning of AyM will have the following significant residual effects: ▲ A moderate residual effect on NCN5 and the Wales Coast Path (onshore recreation); ▲ A moderate residual effect on Rhyl Golf Club (tourism receptors).				
CUMULATIVE EFFECTS				
Cumulative impact of construction on onshore recreation receptors	Negligible	Low to high (for equivalent receptors in the assessment of AyM).	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)
Cumulative impact of construction on offshore recreation receptors	Negligible	Low to high (for equivalent receptors in the assessment of AyM).	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Cumulative impact of construction on the volume and value of tourism economy	Negligible	High	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)
Cumulative impact of construction on the displacement of tourism visitors	Low	Medium	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)
Cumulative impact of operational activity on onshore recreation	Negligible	Low to high (for equivalent receptors in the assessment of AyM).	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)
Cumulative impact of operational phase on volume and value of the tourism economy	Negligible	High	None beyond measures proposed in Volume 3, Chapter 4: Tourism and Recreation (application ref: 6.3.4)	Minor adverse (Not Significant)

13.3.5 Onshore biodiversity and nature conservation

Table 5: Summary of predicted effects on onshore biodiversity and nature conservation receptors.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
CONSTRUCTION			
S7 habitat: coastal sand dune (Route Section B)	c. 0.1 ha of coastal sand dune habitat, west of North Wales Bowl Centre at Y Ffrith would be temporarily lost.	The re-establishment of dune grassland habitats from turf salvaged from specific areas or the creation of dune grassland via reinstatement of appropriate soils and seeding.	Significant, temporary adverse at a regional level in the short term. Not significant in mid-term (to be confirmed following further development of mitigation/ compensation measures).
S7 habitat: Hedgerows (Route Sections B-G)	Permanent loss of c. 540m of hedgerow including 8 mature trees at the OnSS footprint, temporary loss of parts of 128 other hedgerows, including c. 41 mature trees. This includes three that are "Important" under the Hedgerows Regulations 1997.	Onshore ECC Replanting/ reinstatement with a species-rich, locally appropriate native mixture including heavy standard trees at a 3:1 ratio for any lost. OnSS footprint Residual effects will be offset via replanting of 770m and including heavy standard trees at a 3:1 ratio for any lost. Further details are included within the Outline Landscape and Ecological Management Plan (OLEMP) (application ref: 8.4).	Significant permanent and temporary adverse at a local level in the short term until the proposed mitigation is sufficiently mature and becomes established. Not significant in mid-term once proposed mitigation has matured and become established as this allows time for new/ replacement hedgerows to establish. Residual effects as a result of hedgerow loss at the OnSS will be offset via compensatory planting of 770m of new hedgerow.
S7 habitat: Lowland Fen (Route Section C)	0.12 ha of lowland fen at The Flash would be temporarily lost.	Topography including hydrological connection reinstated following work to ensure water retention. Area allowed to revegetate naturally.	Not significant in short term (to be confirmed following further development of mitigation/ compensation measures).
S7 habitat: Coastal and floodplain grazing marsh including part of the Clwyd Estuary and Adjacent Fields Local Wildlife Site (LWS) (Sections D & E)	11 ha of coastal and floodplain grazing marsh (fields and ditches), the majority of which is also part of Clwyd Estuary and Adjacent Fields LWS, will be temporarily lost.	A range of measures relating to vegetation clearance and other construction works are proposed in Section 5.9 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5) with further details provided in the Outline Construction Method Statement (CMS) (application ref: 8.13.1) and OLEMP (application ref: 8.4)	Not significant in short term.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
Plant species (at coastal dune habitat)	Temporary loss of coastal habitat at Y Ffrith, west of North Wales Bowls Centre, potentially supporting locally important plant species (refer to Habitat and Hedgerow Survey Report at Annex 5.2 (application ref: 6.5.5.2) for details).	As for coastal sand dune habitat in Table 15 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5)	Potentially significant, temporary adverse at a county level in the short term until the proposed mitigation is sufficiently mature and become established. Not significant in mid-term once proposed mitigation has matured and become established.
Fish: Atlantic salmon, brown trout, European eel	Disturbance to European eel that may use water courses, including ditches, that are subject to trenching work within the Order Limits. Accidental pollution from diffuse or point sources associated with construction.	Trenching work at smaller water courses and ditches will not take place at night and will include measures such that eels cannot become trapped within the work area. Refer to embedded mitigation at Section 5.9 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5) for measures to reduce pollution risks.	Not significant in the short term.
Invertebrates (using coastal dune habitat)	Temporary loss of coastal habitat.	As for coastal sand dune habitat in Table 15 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5)	Potentially significant, temporary adverse at a county level in the short term until the proposed mitigation is sufficiently mature and become established. Not significant in mid-term once proposed mitigation has matured and become established.
GCN and common toad	Permanent loss of 5 ha of terrestrial habitat and temporary loss of 10.56 ha of terrestrial habitat directly adjacent to Great Crested Newt (GCN) breeding ponds, also used by common toads, at SABP (Route Section F). Temporary loss of terrestrial habitats directly adjacent to GCN breeding ponds also used by common toads along the route.	GCN EPSL required from NRW in advance of work within 250m of GCN potential breeding pond. The EPSL application and Method Statement will include the measures that will be implemented. Refer to embedded mitigation at Section 5.9 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5) for measures to reduce pollution risks. Further details are included within the OLEMP (application ref: 8.4).	No significant effect is likely on the local conservation status of any of the metapopulations present following the implementation of mitigation measures. The project would help toward restoring the favourable conservation status in the medium- long term, due to the provision of additional aquatic and terrestrial habitats managed for the benefit of the species for the lifetime of the project.

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
	Temporary habitat fragmentation/isolation resulting in functional loss of terrestrial habitat and breeding ponds. Accidental killing and injury. Accidental pollution to breeding ponds from diffuse or point sources associated with construction.		
Reptiles	Temporary habitat loss at the TCC at Y Ffrith or other locations where habitat is potentially suitable. Accidental killing and injury.	Mitigation for GCN will also reduce risks to reptiles. Reasonable avoidance measures would be used at Y Ffrith and elsewhere where necessary, to reduce the risk of committing an offence under the protecting legislation. Refer to the OLEMP (application ref: 8.4) for further details.	No significant effect is likely.
Breeding Birds	Permanent loss of 5 ha of habitat at the OnSS used by small numbers of notable passerine species. Temporary loss of habitat for small numbers of notable passerine species along the onshore ECC. Disturbance to a Schedule 1 bird species (barn owl) along the onshore ECC during construction. Inadvertent destruction or damage to active nests (all wild bird species).	A range of measures relating to vegetation clearance and other construction works are proposed in Section 5.9 of Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.5.5). Proposed habitat creation and management at the OnSS will provide suitable habitat for a range of notable passerine species. Further details of proposed measures are provided in the Outline CMS (application ref: 8.13.1) and OLEMP (application ref: 8.4)	No significant effect on the local conservation status is likely following the implementation of mitigation measures
Non-Breeding Birds (Landfall and River Clwyd, including birds forming part of the Clwyd Estuary and Adjacent Fields LWS population)	Landfall Temporary loss of up to 2.4 ha of intertidal habitat Y Ffrith. Disturbance, both from noise and visual sources could displace waterbirds.	Piling (if required at the landfall) would either take place outside the winter period (October to March) or would utilize less noisy, vibro-piling technology. HDD (or other trenchless techniques) pits and other working areas at the landfall and River Clwyd crossing would be fenced, where required.	Landfall – not significant

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
Bats	Loss of up to 41 trees that have potential roost features. Permanent loss of flight lines and foraging habitat at the OnSS area. Temporary fragmentation of hedgerow flight lines and loss of foraging habitat elsewhere along the onshore ECC.	An NRW EPSL will be required in advance of work that could affect roosting bats. Key principles that will be followed to mitigate and compensate for impacts are described in the OLEMP (application ref: 8.4). One of the key principles is that there will be no net loss of bat roosting habitat. Measures to mitigate for temporary loss/fragmentation of flight lines and foraging habitat include reinstatement of hedgerows and use of "dead hedges" at discrete locations during construction (refer to OLEMP (application ref: 8.4) for details).	No significant effect is likely on the local conservation status of bat populations as a result of temporary habitat loss following the implementation of mitigation measures. Residual effects as a result of permanent loss of roost trees (at the OnSS and along the Onshore ECC) and permanent loss of hedgerow at the OnSS will be offset via compensatory measures at the OnSS, detailed in the OLEMP (application ref: 8.4).
Badger	No known setts will be directly affected, either via disturbance or damage. Temporary loss of foraging habitat along the onshore ECC, permanent loss of c. 5 ha of foraging habitat at the OnSS. Accidental killing and injury. The project is not predicted to significantly adversely affect the local population due to the abundance of adjacent unaffected agricultural grassland. However, in view of the species' legal protection mitigation measures are proposed.	Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation.	No significant effect is likely.
Otter	No known holt sites will be affected, either via disturbance or damage. Temporary fragmentation of foraging areas/routes. Accidental killing and injury.	Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation. These would be broadly similar to those described for badger (above). If pre-construction survey identifies new holts or resting places then a licence may be necessary	No significant effect on the local conservation status is likely following the implementation of mitigation measures

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
		from NRW depending on the nature of any impact. Further details are included in the OLEMP (application ref: 8.4).	
Water Vole	Based on current survey data there will be no impacts on water vole. If it is later confirmed to be present, then impacts could include - Temporary loss of foraging and sheltering habitat. - Temporary fragmentation of foraging areas/routes. - Accidental killing and injury.	Pre-construction surveys and reasonable avoidance measures would be used to reduce the risk of committing an offence under the protecting legislation If pre-construction survey identifies active burrows, then mitigation would include scheduling of work to avoid sensitive periods of the water vole life cycle and deterrence or, if necessary, removal of water vole from areas where there is risk of injury or death in advance. Further details are included in the OLEMP (application ref: 8.4).	No significant effect on the local conservation status is likely following the implementation of mitigation measures, if required.
Other S7 Mammal Species: hedgehog, brown hare, polecat.	Temporary loss of foraging and sheltering habitat, permanent loss if present at the substation area. Temporary fragmentation of foraging areas/routes. Accidental killing and injury.	Reasonable avoidance measures would be used to minimize impacts. Refer to embedded mitigation at Section 5.9 and the OLEMP (application ref: 8.4).	Not significant
OPERATION			
All important ecological features	Disturbance or damage to features due to planned maintenance at the OnSS and along the ECC. Disturbance or damage to features due to operational noise and lighting at the OnSS. Disturbance or damage to features due to unplanned maintenance on the ECC.	Preparation of an EMS, which would include specific measures to avoid potential impacts to protected/ notable species or sensitive habitats. Unplanned maintenance would be subject to any necessary consents and consultation with the relevant nature conservation bodies prior to work taking place.	Not significant
DECOMMISSIONING			

IMPORTANT ECOLOGICAL FEATURE	POTENTIAL IMPACTS	PRELIMINARY MITIGATION/ COMPENSATION	SIGNIFICANCE OF RESIDUAL EFFECT
All important ecological features	Similar to construction, but in most cases impact magnitude will be much lower than during construction.	Similar to construction, where necessary.	Not likely to be significant
CUMULATIVE EFFECTS			
All important ecological features	Impacts upon protected or notable species or upon their resting or breeding sites. Habitat fragmentation and species isolation. Spread of INNS. Accidental pollution.	n/a	Not significant

13.3.6 Ground Conditions and Land Use

Table 6: Summary of predicted effects on ground conditions and land use receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Impact on soil quality - cable route installation	Negligible	Medium	Outline SMP provided as part of the outline CoCP	Minor adverse (Not Significant)
Impact on soil quality – onshore substation	Low	Medium	Outline SMP provided as part of the outline CoCP	Minor adverse (Not Significant)
Impact on soil quality – Transition Joint Bays (TJBs)	Negligible	Medium	Outline SMP and Outline PPEIRP provided as part of the outline CoCP	Minor adverse (Not Significant)
Impact on soil quality - trenchless crossings	Negligible	Low	Outline PPEIRP provided as part of the outline CoCP	Negligible adverse (Not Significant)
Contamination risk to construction workers and human receptors	Negligible	High	Outline PPEIRP provided as part of the outline CoCP	Minor adverse (Not Significant)
Impacts on areas of mineral safeguarding	Negligible	Low	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible adverse (Not Significant)
OPERATION				
Impact on soil resource - cable route installation	Low to Medium	Negligible	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible to Minor adverse (Not Significant)
Impact on soil resource - OnSS	Medium	Negligible	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Minor adverse (Not Significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Impact on soil resource - Landfall infrastructure	Medium	Negligible	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Minor adverse (Not Significant)
Impacts on soil quality - OnSS	Medium	Negligible	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Minor adverse (Not Significant)
Impacts on areas of mineral safeguarding	Negligible	Low	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible adverse (Not Significant)
DECOMMISSIONING				
Decommissioning of cable route	Negligible	Low to high	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible to minor adverse (Not Significant)
Decommissioning of OnSS and TJBs: Land Quality	Negligible	Low to medium	None beyond measures proposed in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible to Minor adverse (Not Significant)
CUMULATIVE				
Potential cumulative effects on land use arising from the proposed care home are predicted to remain as low resulting in an effect of *minor adverse* and therefore not significant in EIA terms. The proposed solar farm is temporary and is a reversible feature, once decommissioned the site's former agricultural use can be restored. Therefore, no further assessment in relation to cumulative effects is therefore required.				

13.3.7 Hydrology, Hydrogeology and Land Use

Table 7: Summary of predicted effects on hydrology, hydrogeology and flood risk.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Onshore ECC installation: water quality of watercourses	Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse(not significant)
Onshore ECC installation: water quality for near shore coastal waters and the Clwyd transitional waters	Negligible	Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Onshore ECC installation: groundwater quality	Negligible to Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Negligible to Minor Adverse (not significant)
Onshore ECC installation: flood risk from construction activities	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref:8.13) and Onshore ECC Flood Consequence Assessment (FCA) (Annex 7.1, Application ref 6.5.7.1)	Negligible Adverse (not significant)
OnSS construction: water quality in watercourses	Low	Low	None in addition to mitigation within the Outline CoCP (application ref:8.13)	Minor Adverse (not significant)
OnSS construction: groundwater quality	Negligible	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref:8.13)	Negligible to Minor Adverse (not significant)
OnSS construction: flood risk	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref:8.13) and ONSS FCA (Annex 7.2, Application ref 6.5.7.2)	Negligible Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
OnSS TCC construction: flood risk	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Negligible Adverse (not significant)
Trenchless crossing works: surface water quality	Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Trenchless crossing works: groundwater quality (landfall trenchless crossing)	Low to Medium	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Trenchless crossing works: groundwater quality	Negligible to Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Negligible to Minor Adverse (not significant)
Trenchless crossing works: Flood risk	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13	Negligible Adverse (not significant)
Trenchless crossing works: Flood risk from TCC	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13	Negligible Adverse (not significant)
Landfall installation: near-shore coastal water	Negligible	High	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Landfall installation: surface water quality	Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Landfall installation: trenchless crossing on groundwater quality	Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)
Landfall installation: groundwater quality	Low	Low to Medium	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Minor Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Landfall installation: Watercourse Flood risk	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Negligible Adverse (not significant)
Landfall installation: Tidal Flood risk	Negligible	Low	None in addition to mitigation within the Outline CoCP (application ref: 8.13)	Negligible Adverse (not significant)
OPERATION				
Permanent Onshore ECC infrastructure: water quality and flood risk	Negligible	Low to Medium	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible to Minor Adverse (not significant)
OnSS: flood risk	Negligible	Low	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible Adverse (not significant)
OnSS: water quality	Negligible	Low to Medium	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible to Minor Adverse (not significant)
Permanent Landfall infrastructure: water quality and flood risk	Negligible	Low to Medium	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible to Minor Adverse (not significant)
DECOMMISSIONING				
Decommissioning of Onshore ECC on flood risk and water quality	Negligible	Low to Medium	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible to Minor Adverse (not significant)
Decommissioning of OnSS: flood risk	Negligible	Low	None beyond measures proposed in Volume 3, Chapter 7: Hydrology	Negligible Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
			and Flood Risk (application ref: 6.3.7)	
Decommissioning of OnSS: water quality	Negligible	Low to Medium	None beyond measures proposed in Volume 3, Chapter 7: Hydrology and Flood Risk (application ref: 6.3.7)	Negligible to Minor Adverse (not significant)

13.3.8 Onshore Archaeology and Cultural Heritage

Table 8: Summary of predicted effects on onshore Archaeology and Cultural Heritage receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Disturbance to assets identified on foreshore	High	Low to Medium	Preservation by record	Minor Adverse (not significant)
Disturbance to ridge and furrow Identified on LiDAR (Direct Effect)	High	Low	Preservation by record	Minor Adverse (not significant)
Extant ridge and furrow earthworks (Direct Effect)	High	Low	Preservation by record	Minor Adverse (not significant)
Potential Roman Road and associated activity (Direct Effect)	High	Low to Medium	Preservation by record	Minor Adverse (not significant)
Potential Geoarchaeological Deposits (Direct Effect)	High	Medium	Preservation by record	Minor Adverse (not significant)
Geophysical Anomalies of potential archaeological origin (Direct Effect)	High	Low to Medium	Preservation by record	Minor Adverse (not significant)
Unknown archaeological remains (Direct Effect)	High	Unknown	Preservation by record	Unknown (not significant)
Historic Hedgerows (Direct Effect)	Medium	Low	Minimise hedgerow removal as far as possible and reinstate hedgerow following completion of construction phase	Negligible Adverse (not significant)
Bryn Cwnin Farmhouse and L-Plan Range of Farm buildings (Indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible Adverse (not significant)
Tyddyn Isaf (Indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore	Negligible Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
			Archaeology and Cultural Heritage (application ref: 6.3.8)	
Barn to NW Faenol-Bropor Farmhouse (Indirect effect)	Low Adverse	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Minor Adverse (not significant)
Bodelwyddan Castle (Indirect effect)	Low Adverse	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Minor Adverse (not significant)
Bryn Celyn Lodge (Indirect effect)	No effect predicted	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible Adverse (not significant)
Rhuddlan Chain Home Radar Station (Geophysical anomaly) (Direct Effect)	Medium	Medium	Preservation by record	Minor Adverse (not significant)
OPERATION				
Archaeological Assets (Direct Effect)	No impact	Low to Medium	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	No effect predicted
Historic Hedgerows (Direct effect)	No impact	Medium	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	No effect predicted
Barn to NW of Faenol-Bropor (Indirect effect)	Minor Adverse	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Minor Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Bodelwyddan Castle (Indirect effect)	Minor Adverse	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Minor Adverse (not significant)
Bryn Celyn Lodge (Indirect effect)	No impact predicted	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	No effect predicted
Beaumaris Castle (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Conwy Castle and Town Walls (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Penrhyn Castle (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Slate Landscapes of NW Wales (component part 1) (indirect effect)	Negligible	Very High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Gwrych Castle (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Trwyn Du (Penmon) lighthouse (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Puffin Island Tower and remains of church and monastic settlement (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Puffin Island Telegraph Station (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Pen y Dinas Hillfort (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Bangor Pier (Indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Menai Bridge (indirect effect)	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)
Llandudno Conservation Area (indirect Effect)	Minor Adverse	Medium	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Minor Adverse (not significant)
Llandudno Pier (indirect effect)	Moderate Adverse	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Moderate adverse (significant)
Historic Landscape in Wales (HLW)s 23, 28, 30 and 33	Negligible	High	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	Negligible (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
DECOMMISSIONING				
Archaeological Assets (Direct effect)	No effect predicted	Low to Medium	None beyond measures proposed in Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8)	No effect predicted
Historic Hedgerows (Direct effect)	No effect predicted	Low	Hedgerows (which are those reinstated after construction) will again be reinstated. Any associated archaeological impact will have already been mitigated in relation to the construction effects, and no additional impact is anticipated. No mitigation is proposed or considered necessary	No effect predicted
Heritage Assets (indirect effect on Setting from removal of onshore and offshore infrastructure)	No effect predicted (setting effectively restored)	Low to High	None proposed or considered necessary	No effect predicted
CUMULATIVE EFFECTS				
No cumulative effects reported				

13.3.9 Traffic and Transport

Table 9: Summary of predicted effects on traffic and transport.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTORS	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Driver delay and severance - increase in vehicle movements	Low adverse	Negligible	Measures within Outline Construction Management Plan (CTMP) and the Outline Travel Plan (OTP) (provided appendices to Volume 8, Document 3)	Negligible adverse (not significant)
Driver delay and severance - use of open trenching	Negligible to low/medium	Negligible to high	Measures within Outline CTMP	Negligible adverse to Minor adverse (not significant)
Community severance	Negligible adverse	Low and high	None beyond measures proposed in Volume 3, Chapter 9: Traffic and Transport (application ref: 6.3.9)	Minor adverse (not significant)
Vulnerable road users and road safety	Negligible to low adverse	Low and high	Measures within Outline CTMP	Minor adverse (not significant)
Dust and dirt	Negligible to low adverse	Low and high	Measures within Outline CTMP	Negligible to Minor adverse (not significant)
Dangerous loads	Negligible	Low and medium	Any measures identified in Abnormal Load Assessment Report (ALAR) to be prepared post consent.	Negligible and Minor adverse (not significant)
Users of ATRs and PRoWs	Negligible to high	Low to very high	Measures within Outline PAMP (Appendix 8 of the Outline CoCP (application ref: 8.13.8))	Negligible to minor adverse (not significant)
DECOMMISSIONING				
Likely traffic and transport impacts associated with decommissioning activities.	Comparable to construction, perhaps lesser if underground cables remain in situ.			

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTORS	MITIGATION MEASURES	RESIDUAL EFFECT
CUMULATIVE EFFECTS				
No assessment required				

13.3.10 Airborne Noise and Vibration

Table 10: Summary of predicted effects on airborne noise and vibration receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL MAGNITUDE OF IMPACT	RESIDUAL LEVEL OF EFFECT AND SIGNIFICANCE
CONSTRUCTION					
Noise levels generated from landfall construction	High (daytime) High (weekend)	Medium (daytime, weekend)	Relevant detailed design measures relating to noise mitigation, as outlined in Table 50 of Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).	Negligible or Low	Minor Adverse (not significant)
Noise levels from landfall HDD (or other trenchless techniques) drilling	Negligible (daytime) High (evening, weekend, night-time)	Medium (daytime, evening, weekend) High (night-time)	Relevant detailed design measures relating to noise mitigation, as outlined in Table 50 of Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).	Daytime, evening, weekend – Negligible or Low Night-time – Negligible	Minor Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL MAGNITUDE OF IMPACT	RESIDUAL LEVEL OF EFFECT AND SIGNIFICANCE
Noise levels generated from onshore ECC construction	High (daytime) High (weekend)	Medium (daytime, evening)	Relevant detailed design measures relating to noise mitigation, as outlined in Table 50 of Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).	Negligible or Low	Minor Adverse (not significant)
Noise levels generated from onshore ECC HDD drilling (or other trenchless techniques)	Low (daytime) High (evening, weekend, night-time)	Medium (daytime, evening, weekend) High (night-time)	Relevant detailed design measures relating to noise mitigation, as outlined in Table 50 of Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).	Daytime, evening, weekend – Negligible or Low Night-time – Negligible	Minor Adverse (not significant)
Noise levels generated by Off-Route Access Roads (ORAR) construction	High (daytime, weekend)	Medium (daytime, weekend)	Relevant detailed design measures relating to noise mitigation, as outlined in Table 50 of Volume 3, Chapter 10: Noise and Vibration (application ref: 6.3.10).	Daytime, weekend – Negligible or Low	Minor Adverse (not significant)
Noise levels generated by OnSS construction	Negligible	Medium	No further mitigation measures required	Negligible	Minor Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL MAGNITUDE OF IMPACT	RESIDUAL LEVEL OF EFFECT AND SIGNIFICANCE
Noise levels generated by the construction of the Array	Negligible (midweek, evening, weekend) Negligible (night-time - inclement weather) Low (night-time – neutral weather)	Medium (daytime, evening, weekend) High (night-time)	Implementation of relevant DCO requirements specifying noise limits in neutral weather conditions only.	Negligible	Minor Adverse (not significant)
Vibration levels generated by HDD (or other trenchless technique) operations	Medium	Medium (daytime, evening, weekend) High (night-time)	Notification of HDD (or other trenchless technique) works given to any receptors within 55 m of the HDD (or other trenchless techniques) drilling operations.	Negligible	Minor Adverse (not significant)
Vibration levels generated by HDD (or other trenchless techniques) vibratory piling operations	Medium (daytime only)	Medium	Notification of piling works given to any receptors within 75 m of the HDD (or other trenchless techniques) drilling operations.	Negligible	Minor Adverse (not significant)
Vibration levels generated by cofferdam and OnSS piling operations	Negligible	Medium	Implementation of a programme of test piling at nearest VSRs.	Negligible	Minor Adverse (not significant)
Noise levels generated by construction traffic on the local road network	Low	Medium	None required.	Low	Minor Adverse (not significant)
Noise levels generated by construction traffic on the ORAR	Negligible	Medium	No further mitigation measures required.	Daytime, evening, weekend – Negligible or Low Night-time – Negligible	Minor Adverse (not significant)
OPERATION					
Operational noise levels generated by the OnSS on residential receptors	Negligible (daytime, evening, weekend) High (night-time)	Medium (daytime, evening, weekend) High (night-time)	Reduction in operational noise levels through the use of acoustic enclosures, silencers and covers.	Negligible	Minor Adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL MAGNITUDE OF IMPACT	RESIDUAL LEVEL OF EFFECT AND SIGNIFICANCE
Operational noise levels generated by the OnSS on commercial receptors	Negligible	Low	No further mitigation measures required assuming that the measures for the residential receptors have been implemented.	Negligible	Minor Adverse (not significant)
DECOMMISSIONING					
Noise and vibration levels generated by decommissioning activities	Not anticipated to exceed construction phase worst-case criteria. Potential impacts reduced as it is assumed that no night-time or piling decommissioning operations are required.				
CUMULATIVE EFFECTS					
Noise levels generated from the OnSS and gas fired power station	Low	Medium (daytime, evening, weekend) High (night-time)	No further mitigation measures required as it is concluded that the noise level at the Noise Sensitive Receptor (NSR) from the OnSS is negligible compared to the gas fired power station.	Negligible	Minor Adverse (not significant)

13.3.11 Air Quality

Table 11: Summary of predicted effects on air quality receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
Dust/ PM_{10} generated from temporary construction activities	Low - High	Low - High	Implementation of best-practice mitigation as specified in industry guidance via the outline CoCP (application ref: 8.13).	Negligible (not significant)
Temporary construction-generated road traffic volumes on human receptors	Negligible (below relevant screening criteria)	High	None beyond those proposed in Volume 3, Chapter 11: Air Quality (application ref: 6.3.11).	Negligible (not significant)
Temporary construction-generated road traffic volumes on ecological receptors	Negligible (below relevant screening criteria)	Medium - Low	None beyond those proposed in Volume 3, Chapter 11: Air Quality (application ref: 6.3.11)	Negligible (not significant)
OPERATION				
Likely air quality impacts associated with operational activities	Negligible	High	None beyond those proposed in Volume 3, Chapter 11: Air Quality (application ref: 6.3.11)	Negligible (not significant)
DECOMMISSIONING				
Likely air quality impacts associated with decommissioning activities.	Comparable to construction, perhaps lesser if underground cables remain in situ.			
CUMULATIVE EFFECTS				
Cumulative dust/ PM_{10} generated from temporary concurrent construction activities	Low - High	Low - High	Implementation of best-practice mitigation as specified in industry guidance via the outline CoCP. All schemes which are considered to pose a potential cumulative effect will have had to undertake a construction dust assessment	Negligible (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
			separately relating to their own site activities and associated risks, with the recommendation of best practice mitigation.	

13.3.12 Public Health

Table 12: Summary of predicted effects on public health receptors.

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
CONSTRUCTION				
For impacts on health due to traffic emissions see Table 15 in Volume 3, Chapter 11: Air quality (application ref: 6.3.11)	Negligible (below relevant screening criteria)	High	None beyond those proposed in Volume 3, Chapter 12: Public Health (application ref: 6.3.12)	Negligible (not significant)
For impacts on health due to dust emissions see Table 15 in Volume 3, Chapter 11: Air quality (application ref: 6.3.11)	Low -to Medium	Low to- High	Implementation of best-practice mitigation as specified in industry guidance via the outline CoCP.	Negligible (not significant)
For impacts on health due to water emissions see Table 10 in Volume 3, Chapter 7, Hydrology, hydrogeology and flooding (application ref: 6.3.7)	Negligible to Low	For impacts on health due to water emissions see Table 10 in Volume 3, Chapter 7, Hydrology, hydrogeology and flooding	Negligible to Low	For impacts on health due to water emissions see Table 10 in Volume 3, Chapter 7, Hydrology, hydrogeology and flooding
For potential impacts on health caused by soil contamination see Table 12 in Volume 3, Chapter 6: Ground Conditions and Land Use (application ref: 6.3.6)	Negligible	High	Outline PPEIRP provided as part of the OCoCP	Minor adverse (Not Significant)
For potential impacts on health caused by Noise Table 67 in Volume 3, Chapter 9: Airborne noise and vibration (application ref: 6.3.9)	Negligible to High	Medium to High	Use of quieter plant and repositioning plant where possible. Additional acoustic screens Not undertaking HDD (or other trenchless techniques) operations during the night-time.	Minor adverse (not Significant)
For potential impacts due to disruption to local road network see Table 30 in Volume 3,	Negligible to low/medium	Negligible to high	Measures within OCTMP	Negligible adverse to Minor adverse (not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
Chapter 9: Traffic and Transport (application ref: 6.3.9)				
OPERATION				
For impacts on health due to traffic emissions see Table 15 in Volume 3, Chapter 11: Air quality (application ref: 6.3.11)	Negligible (below relevant screening criteria)	High	None beyond those proposed in Volume 3, Chapter 12: Public Health (application ref: 6.3.12)	Negligible (not significant)
For impacts on health due to water emissions see Table 10 in Volume 3, Chapter 7, Hydrology, hydrogeology and flooding (application ref: 6.3.7)	Negligible	Low to Medium	None beyond those proposed in Volume 3, Chapter 12: Public Health (application ref: 6.3.12)	Negligible to Minor adverse (not significant)
For potential impacts on health caused by Noise Table 67 in Volume 3, Chapter 9: Airborne noise and vibration (application ref: 6.3.9)	High	High	Reduction in operational noise levels through the use of acoustic enclosures, silencers and covers.	Minor Adverse (not significant)
Impacts on health due to electromagnetic radiation exposure	Negligible	Low	None beyond those proposed in Volume 3, Chapter 12: Public Health (application ref: 6.3.12)	Negligible (not significant)
DECOMMISSIONING				
For impacts on health due to dust and traffic emissions see Table 15 in Volume 3, Chapter 11: Air quality (application ref: 6.3.11).	Comparable to construction, perhaps lesser if underground cables remain in situ.			
For impacts on health due to water emissions see Table 10 in Volume 3, Chapter 7, Hydrology, hydrogeology and flooding (application ref: 6.3.7)	Negligible	Low to Medium	None beyond those proposed in Volume 3, Chapter 12: Public Health (application ref: 6.3.12)	Negligible to Minor adverse (Not significant)

IMPACT	MAGNITUDE	SENSITIVITY OF RECEPTOR	MITIGATION MEASURES	RESIDUAL EFFECT
For potential impacts on health caused by Noise Table 67 in Volume 3, Chapter 9: Airborne noise and vibration (application ref: 6.3.9).	Not anticipated to exceed construction phase worst-case criteria. Potential impacts reduced as it is assumed that no night-time or piling decommissioning operations are required.			
For potential impacts due to disruption to local road network see Table 30 in Volume 3, Chapter 9: Traffic and Transport (application ref: 6.3.9).	Comparable to construction, perhaps lesser if underground cables remain in situ.			
For impacts on health due to electromagnetic radiation exposure	Upon decommissioning the negligible adverse effect during operation would become neutral			

Errata List

Important Ecological Feature of Badger

In response to ExQ1.2.69, the Applicant confirms that in regard to the Important Ecological Feature of badger, Table 5 of APP-074 should be amended to reflect Tables 16 and 21 of ES Volume 3, Chapter 5: Biodiversity and Nature Conservation (APP-066) which read: "*The project is not predicted to significantly adversely affect the local population due to the abundance of adjacent unaffected agricultural grassland. However, in view of the species' legal protection mitigation measures are proposed*." The Potential Impacts section has been amended and can be found in the Table of Environmental Statement Conclusions (REP1-049).

Conclusions Tables

In response to ExQ1.2.44, the Applicant has reviewed and cross-checked information in Table 5 and confirms that there are a number of instances where summary and conclusion information presented in ES, Volume 3, Chapter 13: Onshore Conclusions (APP-074), does not match similar conclusions tables within ES Volume 3, Chapters 2 to 12 (APP-063 to APP-073). This relates to relevant or contextual information being removed when summarising for the conclusions chapter, however, summary tables within Chapters 2 to 12 retain this information and, except where stated in responses to questions, are correct. These inconsistencies have been corrected within the table of residual effects as identified within the ES in the Table of Environment Conclusions (REP1-049).

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