

MONA OFFSHORE WIND PROJECT

Environmental Statement

Volume 3, Chapter 5: Historic environment (F02)

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Image of an offshore wind farm

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Deadline 7 Changes

This document has been updated at Deadline 7 of the Mona Offshore Wind Project examination in order to reflect the change to the Order Limits, forming the Change Request, which was accepted by the Examining Authority on 19 December 2024.

The following figures have been updated to reflect the updated onshore order limit change:

- Figure 5.1: Historic environment study area.
- Figure 5.2: Designated heritage assets within the historic environment 1 km study area
- Figure 5.3: Designated heritage assets within the historic environment study area at the Onshore Substation
- Figure 5.4: Other projects, plans and activities screened into the cumulative effects assessment.

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Glossary

Term	Meaning
Bronze Age	The time period 2,000 to 700BC.
Intangible heritage	Traditions or living expressions such as festive events, performing arts, social practices, rituals and oral traditions.
Listed building	A building or structure placed on a statutory 'List' of Buildings of Special Architectural or Historic Interest. There are three grades of listing: <ul style="list-style-type: none"> • Grade I – are of exceptional interest. • Grade II* - are particularly important. • Grade II – are of special interest.
List Entry Number	Reference number for entry in National Heritage List.
Medieval	The time period AD410 to AD1540.
Mesolithic	The time period 10,000 to 3,500BC.
Modern	The time period 1901 onwards.
Mona Onshore Development Area	The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction compounds), and the connection to National Grid substation will be located.
Mona Array Area	The area within which the wind turbines, foundations, inter-array cables, interconnector cables, offshore export cables and offshore substation platforms (OSPs) forming part of the Mona Offshore Wind Project will be located.
Offshore Substation Platform (OSP)	The offshore substation platforms located within the Mona Array Area will transform the electricity generated by the wind turbines to a higher voltage allowing the power to be efficiently transmitted to shore.
Post medieval	The time period AD1540 to 1901.
Prehistoric	The general term used for the time period before the Roman invasion of AD43.
Registered Historic Landscape	A landscape of outstanding or special historic interest placed on a non-statutory Register.
Registered Park and Garden	A park and/or garden of special historic interest placed on a statutory Register. There are three grades of registration: <ul style="list-style-type: none"> • Grade I – are of exceptional interest. • Grade II* - are particularly important. • Grade II – are of special interest.
Roman	The time period AD43 to AD410.
Scheduled Monument	An archaeological site given legal protection by being placed on a 'Schedule' of monuments.
Written Scheme of Investigation	A plan detailing the protocol for any archaeological investigation to be carried out prior to the construction of the Mona Offshore Wind Project, including procedures for field survey and watching briefs.

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Acronyms

Acronym	Description
AD	Anno Domini – after the birth of Christ
AHEF	Archaeology and Heritage Engagement Forum
BP	Before Present – for the citing of radiocarbon dates BP is taken to be before AD 1950
CEA	Culminative Effects Assessment
CPAT	Clwyd Powys Archaeological Trust
DBA	Desk-Based Assessment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
HER	Historic Environment Record
MDS	Maximum Design Scenario
MLWS	Mean Low Water Springs
NG	National Grid
OSP	Offshore substation platform
PEIR	Preliminary Environmental Information Report
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
ZTV	Zone of Theoretical Visibility

Units

Unit	Description
m ²	Square metres
km	Kilometres
km ²	Square kilometres
m	Metres

5 Historic environment

5.1 Introduction

5.1.1 Overview

5.1.1.1 This chapter of the Environmental Statement presents the assessment of the potential impact of the Mona Offshore Wind Project on the historic environment. Specifically, this chapter considers the potential impact of the Mona Offshore Wind Project landward of Mean Low Water Springs (MLWS) during the construction, operations and maintenance, and decommissioning phases. Those impacts of the Mona Offshore Wind Project seaward of MLWS on the historic environment are addressed in Volume 2, Chapter 9: Marine archaeology of the Environmental Statement.

5.1.1.2 The assessment presented is informed by the following technical chapters and annexes:

- Volume 7, Annex 5.1: Desk-based assessment of the Environmental Statement
- Volume 7, Annex 5.2: Historic environment policy and guidance of the Environmental Statement
- Volume 7, Annex 5.3: Onshore geophysical survey report of the Environmental Statement
- Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement
- Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement
- Volume 7, Annex 5.6: Settings assessment (onshore infrastructure) of the Environmental Statement
- Volume 7, Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.

5.1.1.3 This chapter also draws upon information contained within:

- Volume 2, Chapter 8: Seascape and visual resources of the Environmental Statement
- Volume 3, Chapter 6: Landscape and visual resources of the Environmental Statement.

5.2 Legislation and policy context

5.2.1 Legislation

5.2.1.1 The legislative context for the Mona Offshore Wind Project is set out in Volume 1, Chapter 2: Policy and legislative context of the Environmental Statement. Specific legislation relevant to the historic environment is set out in Volume 7, Annex 5.2: Historic environment policy and guidance of the Environmental Statement, with a short summary provided here:

- The Ancient Monuments and Archaeological Areas Act 1979 – establishes that nationally important archaeological sites are listed in a Schedule of Monuments and are accorded statutory protection

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- The Protection of Military Remains Act 1986 – sets out protective measures for vessels which were sunk or stranded while in military service and for aircraft which crashed while in military service
- The Planning (Listed Buildings and Conservation Areas) Act 1990 - provides statutory protection to listed buildings and their settings and include provisions in relation to designating and to preserving or enhancing the character and appearance of conservation areas
- The Hedgerow Regulations 1997 – sets out criteria for the identification of ‘Important Hedgerows’; these include several historic environment criteria
- The Infrastructure Planning (Decisions) Regulations 2010 – requires decision-makers to have regard for the desirability of preserving or enhancing historic assets and their settings
- The Historic Environment (Wales) Act 2016. The Historic Environment (Wales) Bill received Royal Assent in June 2023, however it will not come into force until supporting secondary legislation has been made and all relevant guidance documents have been revised to reflect the Bill. This is anticipated to occur in the latter part of 2024.

5.2.2 Planning policy context

5.2.2.1 The Mona Offshore Wind Project will be located in Welsh offshore waters (beyond 12 nautical miles (nm) from the Welsh coast) and inshore waters, with the onshore infrastructure located wholly within Wales as set out in Volume 1, Chapter 1: Introduction of this Environmental Statement. As the Mona Offshore Wind Project is an offshore generating station with a capacity of greater than 350 MW located in Welsh waters, it is a Nationally Significant Infrastructure Project (NSIP) as defined by Section 15(3) of the Planning Act 2008 (the 2008 Act). As such, there is a requirement to submit an application for a Development Consent Order (DCO) to the Planning Inspectorate to be decided by the Secretary of State for the Department for Energy Security and Net Zero.

5.2.2.2 The policy context for the Mona Offshore Wind Project is set out in Volume 1, Chapter 2: Policy and legislation of the Environmental Statement. Specific policy relevant to the historic environment is set out in Volume 7, Annex 5.2: Historic environment policy and guidance of the Environmental Statement, with a short summary provided here.

5.2.3 National Policy Statements

5.2.3.1 There are currently six energy National Policy Statements (NPSs), three of which identify policy relevant to offshore wind development and the Mona Offshore Wind Project, specifically:

- Overarching NPS for Energy (NPS EN-1) which sets out the UK Government’s policy for the delivery of major energy infrastructure (Department for Energy Security & Net Zero, 2024a)
- NPS for Renewable Energy Infrastructure (NPS EN-3) (Department for Energy Security & Net Zero, 2024b)
- NPS for Electricity Networks Infrastructure (NPS EN-5) (Department for Energy Security & Net Zero, 2024c).

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5.2.3.2 NPS EN-1 includes guidance on what matters are to be considered in the assessment. This is summarised in Table 5.1 below. NPS EN-1 also highlights a number of factors relating to the determination of a DCO application and in relation to mitigation. These are summarised in Table 5.2 below.

Table 5.1: Summary of the NPS EN-1 provisions relevant to the historic environment.

Summary of NPS EN-1 provision	How and where considered in the Environmental Statement
<p><i>'The applicant should undertake an assessment of any likely significant heritage impacts of the proposed development as part of the Environmental Impact Assessment, and describe these along with how the mitigation hierarchy has been applied in the Environmental Statement. This should include consideration of heritage assets above, at, and below the surface of the ground. Consideration will also need to be given to the possible impacts, including cumulative, on the wider historic environment. The assessment should include reference to any historic landscape or seascape character assessment and associated studies as a means of assessing impacts relevant to the proposed project.'</i></p> <p>(paragraph 5.9.9 of NPS EN-1)</p>	<p>The assessment of likely impacts is presented in section 5.10 of this Environmental Statement chapter and includes consideration of heritage assets below, at and above the surface of the ground. It includes consideration of impact on the wider historic landscape.</p> <p>The assessment of likely cumulative impacts is presented in section 5.12 of this Environmental Statement chapter.</p> <p>The assessment includes references to historic landscape character assessments as appropriate.</p>
<p><i>'As part of the Environmental Statement the applicant should provide a description of the significance of the heritage assets affected by the proposed development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the applicant should have consulted the relevant Historic Environment Record (or, where the development is in English or Welsh waters, Historic England or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact.'</i></p> <p>(paragraph 5.9.10 of NPS EN-1)</p>	<p>A description of the baseline heritage assets is provided in section 5.4 of this Environmental Statement chapter and in Volume 7, Annex 5.1 of the Environmental Statement.</p> <p>Additional information regarding the settings of certain heritage assets and the contribution that the setting makes to their significance is provided in Volume 7, Annex 5.6 and Volume 7, Annex 5.7 of the Environmental Statement.</p> <p>The relevant Historic Environment Records have been consulted.</p>
<p><i>'Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact.'</i></p> <p>(paragraph 5.9.11 of NPS EN-1)</p>	<p>The desk based assessment is presented in Volume 7, Annex 5.1 of the Environmental Statement. Field evaluation has been undertaken and the available results are presented in Volume 7, Annex 5.3, Volume 7, Annex 5.4 and Volume 7, Annex 5.5 of the Environmental Statement.</p> <p>Within the assessment presented in section 5.10 of this Environmental Statement chapter, reference is made to the representative visualisations that have been used in the undertaking of the assessments where the setting of a heritage asset may be affected. The visualisations are presented in Volume 7, Annex 6.5: Landscape figures – onshore development of the Environmental Statement.</p>

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Summary of NPS EN-1 provision	How and where considered in the Environmental Statement
<p><i>‘The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents. Studies will be required on those heritage assets affected by noise, vibration, light and indirect impacts, the extent and detail of these studies will be proportionate to the significance of the heritage assets affected.’</i> (paragraph 5.9.12 of NPS EN-1)</p>	<p>The impact of the Mona Offshore Wind Project on the significance of heritage assets is clearly assessed within sections 5.10 and 5.12 of this Environmental Statement chapter.</p> <p>The assessments presented within section 5.10 and section 5.12 of this Environmental Statement chapter include consideration of potential noise, vibration, light and indirect impacts.</p>

Table 5.2: Summary of NPS EN-1 policy on decision making relevant to the historic environment.

Summary of NPS EN-1	How and where considered in the Environmental Statement
<p>The decision-maker <i>‘should seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development, including by development affecting the setting of a heritage asset.’</i> (paragraph 5.9.22 of NPS EN-1)</p>	<p>This information is presented within section 5.4 of this Environmental Statement chapter.</p>

5.2.3.3 The NPS for Renewable Energy Infrastructure (EN-3; DESNZ, 2024b) and the NPS for Electricity Networks Infrastructure (EN-5; DESNZ, 2024c) do not provide any additional policies or advice specific to the historic environment over and above those presented within NPS EN-1, except for a section in EN-5 regarding landscape and visual effects (section 2.9) which advises that there are issues regarding the undergrounding of electricity cables, including impacts on designated heritage assets, that may have to be taken in account when considering this action as an alternative to the construction and use of an overhead line.

5.2.4 Planning Policy Wales

5.2.4.1 The principal national planning policy is Planning Policy Wales (Edition 11, Welsh Government, 2021a - PPW11). This establishes Welsh Government objectives with regard to the protection of the historic environment and explains that responsibility for caring for the historic environment lies with all those that have an interest in the planning system.

5.2.4.2 PPW11 sets out the land use planning policies of the Welsh Government. Chapter 6 of PPW11, entitled ‘Distinctive and Natural Places’, has a section entitled ‘The Historic Environment’ (section 6.1 - pp. 125-131) which provides policy for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of section 6.1 in relation to the historic environment can be summarised as seeking to:

- Protect the Outstanding Universal Value of the World Heritage Sites
- Conserve archaeological remains, both for their own sake and for their role in education, leisure and the economy
- Safeguard the character of historic buildings and manage change so that their special architectural and historic interest is preserved

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- Preserve or enhance the character or appearance of conservation areas, whilst the same time helping them remain vibrant and prosperous
- Preserve the special interest of sites on the register of historic parks and gardens; and protect areas on the register of historic landscapes in Wales.

5.2.5 Future Wales: The National Plan 2040

5.2.5.1 Future Wales: The National Plan 2040 (Welsh Government, 2021b) was adopted in February 2021 and is a national development framework, setting the direction for development in Wales to 2040. Policy 18 advises that proposals for renewable and low carbon energy projects will be permitted subject to certain criteria, one of which is that there should be '*no unacceptable impacts on statutorily protected built heritage assets*'.

5.2.6 Local planning policies

5.2.6.1 The assessment of potential changes to the historic environment has also been made with consideration to the specific policies set out in the Conwy Local Development Plan 2007-2022 (Conwy County Borough Council, 2013) and the Denbighshire Local Development Plan 2006-2021 (Denbighshire County Council, 2013). Key provisions are set out in Table 5.3 along with details as to how these have been addressed within the assessment. A replacement Conwy Local Development Plan 2018-2033 is being prepared but there is no agreed date yet for the provision of a draft document. A replacement Denbighshire Local Development Plan 2018-2033 is also being prepared and the current timetable would see the submission of this in draft form for Examination in May 2024.

Table 5.3: Local planning policy relevant to the historic environment.

Policy	Key provisions	How and where considered in the Environmental Statement
Conwy County Borough County Council: Adopted Local Development Plan (October 2013)		
Strategic Policy CTH/2	Development proposals which affect a heritage asset and/or its setting should preserve or enhance that asset	Impacts and effects on heritage assets are considered within sections 5.10 and 5.12 of this Environmental Statement chapter.
Denbighshire County Council Local Development Plan (October 2013)		
Policy VOE1	Development proposals should maintain and enhance sites of built heritage	Mitigation measures are set out in Table 5.14.
Policy VOE10	Development proposals which promote renewable energy technologies should be supported providing the demonstrate no unacceptable impact on cultural heritage.	Impacts and effects on heritage assets are considered within sections 5.10 and 5.12 of this Environmental Statement chapter.

5.3 Consultation

5.3.1.1 A summary of the key issues raised during consultation activities undertaken to date specific to the historic environment is presented in Table 5.4 below, together with how these issues have been considered in the production of this historic environment chapter of the Environmental Statement.

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Table 5.4: Summary of key consultation issues raised during consultation activities undertaken for the Mona Offshore Wind Project relevant to the historic environment.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
June 2022	The Planning Inspectorate - Scoping Opinion	The Planning Inspectorate agreed that direct physical impacts to buried archaeological assets during operation, maintenance and decommissioning are unlikely and is content that any effects arising from indirect impacts are scoped into the assessment as a separate matter.	There would not be any indirect impacts on buried archaeological assets during operations and maintenance or decommissioning. Direct physical impacts on buried archaeology are assessed in sections 5.10 and 5.12 of this Environmental Statement chapter.
June 2022	The Planning Inspectorate - Scoping Opinion	The Planning Inspectorate agreed that direct physical impacts on the setting of above ground historic assets during operation, maintenance and decommissioning are unlikely and is content that any effects arising from indirect impacts are scoped into the assessment as a separate matter.	Effects arising from indirect impacts on above ground historic assets as a result of change within their setting during operation, maintenance or decommissioning are considered within sections 5.10 and 5.12 of this Environmental Statement chapter.
June 2022	Scoping Opinion - Cadw	The impact of the proposed development on the settings of designated historic assets should follow the Welsh Government guidance given in 'The Setting of Historic Assets in Wales' and The Welsh Minsters' criteria for the determination of national importance when scheduling monuments given in Technical Advice Note 24: The Historic Environment should be used.	The guidance and criteria cited by Cadw have been used within the assessment presented in Volume 7, Annex 5.2: Historic environment policy and guidance of the Environmental Statement. The assessment of the impacts of the proposed development on the settings of designated historic assets has been undertaken in accordance with the staged approach set out in 'The Setting of Historic Assets in Wales' (Cadw 2017b).
July 2022	Initial consultation with Clwyd Powys Archaeological Trust (CPAT)	The Planning Archaeologist at CPAT recommended that the results of a desk based assessment (DBA - including walkover survey), intertidal historic environment survey, and geophysical survey of the proposed onshore cable corridors should be submitted as part of the PEIR. These studies and investigations will need to be supported by method statements.	<p>The method statement for the desk based assessment and walkover survey was submitted to CPAT on 29 September 2022 and written approval was received on 03 October 2022.</p> <p>The method statement for the intertidal historic environment survey was submitted to CPAT on 29 September 2022 and written approval was received on 03 October 2022.</p> <p>The method statement for the onshore geophysical survey was submitted to CPAT on 21 October 2022 and written approval was received on 04 January 2023.</p> <p>The results of the desk based assessment and walkover survey are presented in Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement.</p>

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Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
			<p>The results of the onshore geophysical survey are presented in Volume 7, Annex 5.3: Onshore geophysical survey report of the Environmental Statement.</p> <p>The results of the intertidal historic environment survey are presented in Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement.</p>
October 2022	Initial consultation with Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW)	RCAHMW were consulted on the methodology for the historic intertidal environment survey.	<p>The method statement for the historic environment intertidal survey was submitted to RCAHMW on 29 September 2022 and written approval was received on 14 October 2022.</p> <p>The results of the intertidal historic environment survey are presented in Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement.</p>
October 2022	Consultation with CPAT regarding substation location options	The Planning Archaeologist at CPAT provided comments on the historic environment baseline in relation to each of the seven potential substation location options presented for consideration.	The comments from the Planning Archaeologist at CPAT were considered within the optioneering for the Onshore Substation site (see Volume 1, Chapter 4: Site selection and alternatives).
November 2022	Initial meeting of the Archaeology and Heritage Engagement Forum (AHEF) Onshore. Representatives from Cadw and CPAT were present along with The Applicant and their EIA consultants. A representative from RCAHMW was unable to attend.	This was a general introduction to the AHEF process and was followed up by circulation of a draft AHEF Onshore Roadmap for review and comment. Cadw raised the issue of potential impacts to the Registered Park and Garden at Gwrych Castle near Abergele.	The assessment of impacts and effects relating to the Registered Park and Garden at Gwrych Castle is presented in section 5.10 of this chapter of the Environmental Statement.
June 2023	Section 42 response – Isle of Man Government	<p>Visual impact of proposals on the setting of protected monuments on the east side of the watershed of the Island.</p> <p>As with the Morgan development, this could involve approximately 25 monuments. Whilst the impact could be considered limited, but there are some flagship sites such as Castle Rushen and Laxey Wheel which are major tourist assets of national and economic significance to the Island where the impact should be considered more holistically.</p>	The assessment of impacts and effects arising from the offshore infrastructure is presented in detail in Volume 7, Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement and summarised section 5.10 of this chapter of the Environmental Statement.
June 2023	Section 42 response - Cadw	The assessment has identified that the proposed cable will cross the registered Gwrych Castle Historic Park and Garden	The assessment of impacts and effects relating to the Registered Park and Garden at Gwrych Castle is presented

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Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
		<p>and its boundary wall which is a Grade II listed building. It is currently proposed to horizontally directionally drill the cable under the boundary wall, therefore protecting it from damage and the cable route has been designed to avoid the loss of any parts of the designed landscape which cannot be easily reinstated, such as tree belts. It is therefore currently thought that this approach will limit the adverse impact of the proposed cable on the registered Gwrych Castle Historic Park and Garden to low. However, Cadw would welcome further discussion on this impact to ensure that appropriate mitigation measures are implemented.</p>	<p>in section 5.10 of this chapter of the Environmental Statement.</p> <p>Although the cable route will pass below the Grade II listed boundary wall through a form of trenchless construction methodology, an existing access through this wall would need to be widened in order for construction traffic to pass through. A separate Listed Building Consent application for this work will be submitted to Conwy County Borough Council.</p>
<p>June 2023</p>	<p>Section 42 response - Cadw</p>	<p>The geophysical survey is ongoing and has identified a small number of features of potential archaeological interest at several locations within the Mona Proposed Onshore Development Area. The initial analysis suggests that none of the features is of national importance, although further data processing is required to be undertaken and there may be requirement for archaeological evaluation to be carried out, in order to fully establish their nature, extent and significance. If archaeological evaluation is required, this should be carried out before the environmental statement is completed.</p>	<p>The onshore geophysical survey has been completed and the results of this work are presented in Volume 7, Annex 5.3: Onshore geophysical survey report of the Environmental Statement.</p> <p>A programme of further archaeological evaluation by way of trial trenching has commenced and the results of the work completed thus far are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.</p>
<p>June 2023</p>	<p>Section 42 response - Cadw</p>	<p>The impact of the proposed development, especially the substation, on the setting of the designated historic assets has not yet been assessed. This will need to be carried out following the methodology outlined in the Welsh Government document "The Setting of Historic Assets in Wales". In particular this assessment will need to carefully consider the impact of the development on the settings of listed buildings Gwrych Castle; Gwrych Estate Boundary Wall; Plas Newydd and Pentre Meredydd.</p>	<p>An assessment of the impact of the onshore elements of the Mona Offshore Wind Project, including the Onshore Substation, on the settings of designated heritage assets has been undertaken.</p> <p>The results of this assessment are summarised in section 5.10 of this chapter of the Environmental Statement and presented in detail in Volume 7, Annex 5.6: Settings assessment (onshore infrastructure) of the Environmental Statement.</p> <p>The assessment was carried out in accordance with the Welsh Government document 'The Setting of Historic Assets in Wales' (Cadw, 2017b) (see section 5.4.1 below regarding the relevant guidance documents).</p>
<p>June 2023</p>	<p>Section 42 response - CPAT</p>	<p>The assessment structure and content is proportionate to the predicted impacts and is progressing as agreed in the scope</p>	<p>The onshore geophysical survey has been completed and the results of this work are presented in Volume 7, Annex</p>

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Date	Consultee and type of response	Issues raised	Response to issue raised and/or where considered in this chapter
		<p>and WSI's and we await the results of the completed geophysical survey and subsequent trial trenching strategy. Provision for more detailed intertidal survey has also been agreed. With regard to Table 19.16 the impact on buried archaeology is clearly unknown yet pending further assessment results and it is too early to state the environmental impacts, mitigation and monitoring here with any precision. We agree with the provisional impacts stated for above ground archaeology and impacts to the character of the historic landscape in 19.16 and this is mirrored for the predicted cumulative impacts. We agree with the Next Steps set out in 19.14.</p>	<p>5.3: Onshore geophysical survey report of the Environmental Statement.</p> <p>A programme of further archaeological evaluation by way of trial trenching has commenced and the results of the work completed thus far are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.</p> <p>An additional programme of geoarchaeological deposit modelling of the intertidal zone has been undertaken. The results of this work are presented within Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement.</p>
May 2023	AHEF02 - CPAT	<p>A meeting to discuss the findings from the desk-based assessment, the geophysical survey and the strategy for the trial trenching campaign</p>	<p>The desk-based assessment is presented in Volume 7, Annex 5.1 Desk Based Assessment; the geophysical survey results are presented in Volume 7, Annex 5.3: Geophysical survey report; and the interim trial trenching results are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.</p>
July 2023	AHEF03 - CPAT	<p>A meeting to discuss the impacts and mitigation identified in the Preliminary Environmental Information Report; the Written Scheme of Investigation for the trial trenching campaign; and the proposed locations for trial trenching. CPAT agreed with the WSI and the trial trenching locations.</p>	<p>The interim trial trenching results are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.</p>
November 2023	Email to CCBC Conservation Officer	<p>To confirm if Listed Building Consent could be included in the DCO application or if a separate consent was required.</p>	<p>A separate Listed Building Consent will be submitted.</p>
November 2023	AHEF04 - CPAT	<p>A meeting to discuss the need to temporarily de-mobilise the trial trenching campaign (due to access restrictions and poor weather); explain the extent of survey information that would be included in the application, and the strategy for re-mobilising in February/March 2024. CPAT agreed with the suggested approach.</p>	<p>The interim trial trenching trial trenching results are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.</p>

5.4 Baseline methodology

5.4.1 Relevant guidance

5.4.1.1 Specific guidance relevant to the historic environment is set out in Volume 7, Annex 5.2: Historic environment policy and guidance of the Environmental Statement. In summary, the characterisation of the baseline environment for historic environment has considered the following guidance:

- Technical Advice Note 24: The historic environment (Welsh Government, 2017)
- Technical Advice Note 12: Design (Welsh Government, 2016)
- Conservation principles for the sustainable management of the historic environment in Wales (Cadw, 2011)
- Heritage impact assessment in Wales (Cadw, 2017a)
- Setting of historic assets in Wales (Cadw, 2017b)
- Managing historic character in Wales (Cadw, 2017c)
- Managing Scheduled Monuments in Wales (Cadw, 2018)
- Managing the marine historic environment of Wales (Cadw, 2020)
- Standard and guidance for commissioning work or providing consultancy advice on archaeology and the historic environment (ClfA, 2020a)
- Standard and guidance for historic environment desk-based assessment (ClfA, 2020b)
- Standard and guidance for archaeological geophysical survey (ClfA, 2020c)
- Universal standard for archaeological field evaluation (ClfA, 2023).

5.4.2 Scope of the assessment

5.4.2.1 The scope of this Environmental Statement has been developed in consultation with relevant statutory and non-statutory consultees as detailed in Table 5.4.

5.4.2.2 Taking into account the scoping and consultation process, Table 5.5 summarises the issues considered as part of this assessment.

Table 5.5: Issued considered in this assessment.

Activity	Potential effects scoped into the assessment
Construction phase	
Open cut trenching: <ul style="list-style-type: none"> • Onshore Cable Corridor • 400 kV Grid Connection Corridor 	Loss of, or harm to, buried archaeological remains, deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets. Loss of or harm to above ground historic assets.
Onshore Substation	
Trenchless techniques: <ul style="list-style-type: none"> • Onshore Cable Corridor • 400 kV Grid Connection Corridor 	
Temporary construction compounds	

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Activity	Potential effects scoped into the assessment
Open cut trenching: <ul style="list-style-type: none"> Onshore Cable Corridor 400 kV Grid Connection Corridor 	The impact on above ground historic assets as a result of change within their setting (as defined within the guidance document 'Settings of historic assets in Wales (Cadw, 2017b)).
Onshore Substation	The impact on the character of the historic landscape
Offshore Infrastructure (Mona Array Area)	The impact on above ground historic assets as a result of change within their setting.
Operations and maintenance phase	
Onshore Substation	The impact on above ground historic assets as a result of change within their setting The impact of operations and maintenance of the onshore substation on the character of the historic landscape.
Offshore Infrastructure (Mona Array Area)	The impact on above ground historic assets as a result of change within their setting.
Decommissioning	
Removal of onshore infrastructure (e.g. Link boxes) on the Onshore Cable Corridor	Loss of, or harm to, buried archaeological remains, deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets.
Removal of onshore infrastructure (e.g. Link boxes) on the 400 kV Grid Connection Cable Corridor	
Removal of Onshore Substation	The impact on above ground historic assets as a result of change within their setting The impact on the character of the historic landscape
Offshore Infrastructure (Mona Array Area)	The impact on above ground historic assets as a result of change within their setting.

5.4.2.3 Effects which are not considered likely to be significant have been scoped out of the assessment. A summary of the effects scoped out, together with justification for scoping them out, is presented in Table 5.6.

Table 5.6: Impacts scoped out of the assessment for historic environment.

Potential impact scoped out	Justification
Direct impacts on buried archaeological assets during operations and maintenance or decommissioning.	No direct impacts on buried archaeological assets will occur during operations and maintenance or decommissioning. This is because no additional land would be required for operations and maintenance or decommissioning, and direct impacts on buried archaeological assets would have been addressed during construction.
Impacts on the character of the historic landscape along the Onshore Cable Corridor and the Mona 400kV Grid Connection Cable during operations and maintenance.	No impacts with regard to the character of the historic landscape along the Onshore Cable Corridor and the Mona 400kV Grid Connection Cable will occur during operations and maintenance. This is because no works other than maintenance visits will occur within these cable corridors during those phases, and all cables will be buried.
Indirect impacts on buried archaeological assets during operations and maintenance or decommissioning.	No indirect impacts on buried archaeological assets will occur during operations and maintenance or decommissioning. This is because no additional land would be required for operations and maintenance or decommissioning.
Direct physical impacts on above ground historic assets during operations and maintenance and decommissioning.	No direct physical impacts on the fabric of above ground historic assets will occur during operations and maintenance and decommissioning. This is because no works would be undertaken within or directly adjacent to such assets during these phases.

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5.4.3 Methodology to inform the baseline

5.4.3.1 The baseline environment for historic environment was established by undertaking a desktop study that reviews data from sources including:

- CPAT
- Cadw
- National Library of Wales
- Royal Commission on the Ancient and Historical Monuments of Wales
- Historic England
- Manx National Heritage.

5.4.3.2 Site specific surveys were also undertaken, these surveys are identified in Table 5.8.

5.4.4 Historic environment study area

5.4.4.1 The historic environment study area (see Figure 5.1) comprises the area of land that will be temporarily or permanently occupied during the construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project (hereafter referred to as the Mona Onshore Development Area) and the following:

- Designated historic assets of the highest significance (e.g. World Heritage Sites, Scheduled Monuments, Grade I and II* listed buildings, Grade I and II* Registered Parks and Gardens of Special Historic Interest, and Registered Landscapes of Special Historic Interest) – 1 km from the edge of the Mona Onshore Development Area and a 5 km radius centred on the Onshore Substation
- Other designated historic assets (e.g. Grade II listed buildings, Grade II Registered Parks and Gardens of Special Historic Interest, and Conservation Areas) – 1 km from the edge of the Mona Onshore Development Area and a 1 km radius centred on the Onshore Substation
- Buried archaeology and other non-designated historic assets (as recorded on the Historic Environment Record (HER) data) - 250m from the edge of the Mona Onshore Development Area and a 1 km radius centred on the Onshore Substation.

5.4.4.2 The historic environment study area is based on previous experience of similar schemes. It was identified in the Scoping Report which was issued in May 2022 (The Planning Inspectorate, 2022) and was discussed with the AHEF (see Table 5.4).

5.4.4.3 The historic environment study area is shown on Figure 5.1. It applies to the onshore sections of the project assessment and the onshore sections of the cumulative effects assessment (CEA). Whilst the buffers at the Mona Landfall extend into the sea, no data has been examined in this chapter for locations seaward of MLWS in this area as this data is covered in Volume 2, Chapter 9: Marine archaeology of the Environmental Statement.

5.4.4.4 A separate study area was established for the assessment of potential impacts on historic assets arising from the construction, operations and maintenance, and decommissioning of the visible offshore infrastructure within the Mona Array Area. This is referred to as the offshore settings study area and comprises a 50 km buffer around the Mona Array Area. It is presented on Figure 1.1 of Annex 5.7: Settings assessment

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(offshore infrastructure) of the Environmental Statement. A methodology for the assessment of potential impacts on historic assets arising from the construction, operations and maintenance, and decommissioning of the visible offshore infrastructure within the Mona Array Area, including the identification of the offshore settings study area, was submitted to stakeholders (Cadw, Historic England and Manx National Heritage) for information purposes. A response was received from Cadw confirming that the methodology was accepted. The methodology is presented as Appendix A of Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.

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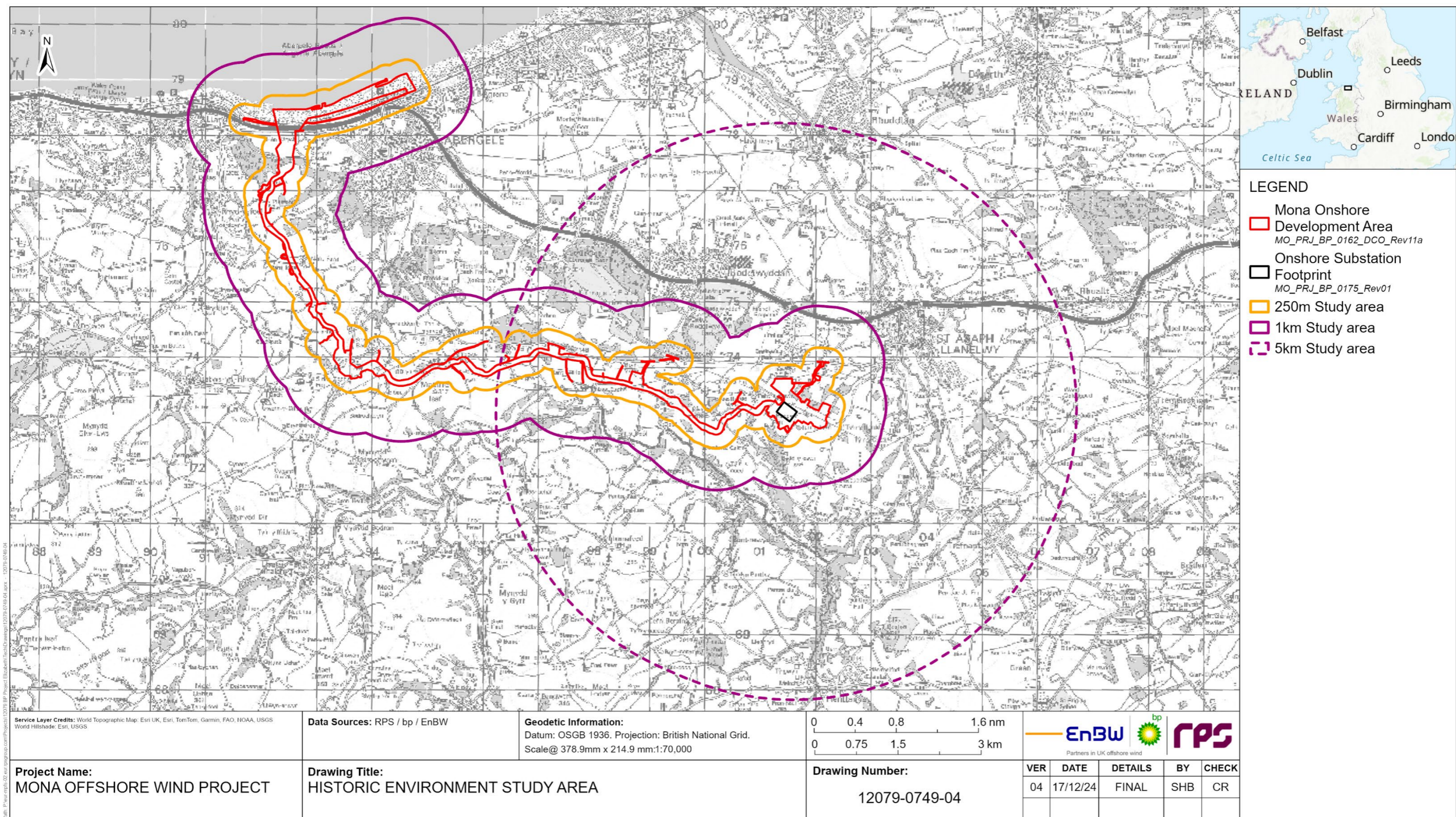


Figure 5.1: Historic environment study area.

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5.5 Desktop study

5.5.1 Overview

5.5.1.1 Information on the historic environment within the historic environment study area was collected through a detailed desktop review of existing studies and datasets. These are summarised at Table 5.7 below. The full desktop study is presented as Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement.

Table 5.7: Summary of key desktop datasets.

Title	Source	Year	Author
Regional HER.	CPAT	Data acquired 2022.	CPAT
Cof Cymru - Online database of designated historic assets.	Cadw	Data reviewed 2022 and 2023.	Cadw

5.5.2 Identification of designated sites

5.5.2.1 All designated sites within the historic environment study area and qualifying interest features that could be affected by the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project were identified using the three-step process described below:

- Step 1: All designated sites of international, national and local importance within the historic environment study area were identified using a number of sources. These sources included the Cof Cymru (Cadw website) for information on Scheduled Monuments, Listed Buildings, and Registered Parks and Gardens and Landscapes of Special Historic Interest.
- Step 2: Information was compiled on the relevant historic environment qualifying interests for each of these sites
- Step 3: Using the above information and expert judgement, sites were included for further consideration if:
 - A designated site directly overlaps with the Mona Onshore Development Area
 - The setting of a designated site could potentially be affected.

5.5.2.2 All designated historic assets within the historic environment study area (except Grade II listed buildings) are listed below in Table 5.9. Further information, including figures showing the locations of these designated historic assets, is provided in Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement.

5.5.3 Site specific surveys

5.5.3.1 In order to inform the Environmental Statement, site-specific surveys were undertaken, as agreed with the appropriate stakeholders (see Table 5.4 for further details). A summary of the surveys undertaken to inform the historic environment impact assessment is outlined in Table 5.8 below.

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Table 5.8: Summary of site-specific survey data.

Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Historic environment geophysical survey	The Mona Onshore Development Area	<p>Historic environment geophysical survey to assess the potential for land within the Mona Onshore Development Area to contain archaeological sites and features.</p> <p>The survey identified a small number of features of potential archaeological interest at several locations within the Mona Onshore Development Area, as well as evidence for former field boundaries, drainage schemes and modern agricultural techniques. None of the features of potential archaeological interest appear to be of national importance.</p>	Magnitude Surveys	2022/2023	Volume 7, Annex 5.3: Onshore geophysical survey report of the Environmental Statement.
Historic environment intertidal survey	Intertidal area of the Mona Onshore Development Area	<p>Intertidal survey to assess the historic environment within the intertidal area of the Mona Onshore Development Area, with specific reference to the potential presence of peat or similar organic material.</p> <p>The survey did not identify any areas of peat or similar organic material outcropping on the surface within the intertidal area of the Mona Onshore Development Area.</p>	Oxford Archaeology	2022	Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement.
Historic environment trial trenching	Mona Onshore Development Area	<p>A programme of further archaeological evaluation by way of trial trenching has commenced and the results of the work completed thus far are presented in an interim report.</p> <p>A spread of occupation activity, the date of which has yet to be confirmed, has been recorded towards the Mona Landfall, with a second similar spread in the central part of the Mona Onshore Development Area. Multiple isolated linear and discrete features have been found in several trenches, some of which were detected as geophysical anomalies but remained undated, while the remaining trial trenches were devoid of archaeological features.</p>	Oxford Archaeology	2023/2024	Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.

5.6 Baseline environment

5.6.1 Baseline characterisation

5.6.1.1 A summary of the historic environment baseline environment is provided in the following sections.

Designated assets

5.6.1.2 This section of the historic environment chapter of the Environmental Statement presents a brief summary of the baseline historic environment for the area within the Mona Onshore Development Area and within the historic environment study area. More detailed information on the baseline historic environment within the historic environment study area is presented within Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement. In that annex, each asset has been allocated a unique Site Number cross referenced to figures and appendices comprising tables of historic assets. Where relevant, these unique Site Numbers are used within this section of the historic environment Environmental Statement chapter. The locations of designated historic assets within the historic environment study area are indicated on Figure 5.2 and Figure 5.3, although for legibility the unique Site Numbers allocated to Grade II listed buildings are not shown on these figures. Figure 5.3 also shows the Zone of Theoretical Visibility (ZTV) for the Mona Onshore Substation. The methodology for the establishment of the ZTV is set out in Volume 7, Annex 6.4: Landscape, seascape and visual resources impact assessment methodology of the Environmental Statement.

5.6.1.3 There are just two designated historic assets located within the Mona Onshore Development Area. One of these is the Grade II* Registered Park and Garden of Special Historic Interest at Gwrych Castle (Site 5). The Mona Onshore Development Area passes through the central part of the Registered area, west of the Grade I listed Gwrych Castle (Site 13). The second designated historic asset within the Mona Onshore Development Area is the Grade II listed boundary wall which runs along the north edge of the Registered Park and Garden of Special Historic Interest at Gwrych Castle, forming the south boundary of the A457 Abergele Road in this area.

5.6.1.4 Within the historic environment study area, there are numerous other designated historic assets, some of which are directly adjacent or very close to the Mona Onshore Development Area. One of these is a Grade II listed building known as Pentre Meredydd which is located just to the west of the Onshore Substation. This is a long, single storey, sub-medieval hall house with a steeply-pitched thatched roof currently covered with corrugated iron sheeting.

5.6.1.5 A list of designated historic assets within the historic environment study area is presented below in Table 5.9. Where relevant, the Cadw Reference Number is also provided as part of the designation information.

5.6.1.6 Grade II listed buildings are not included within Table 5.9 for reasons of brevity. However, a table identifying the Grade II listed buildings within the historic environment study area is presented as Appendix C of Volume 7, Annex 5.1: Historic environment desk based assessment of the Environmental Statement.

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Table 5.9: Designated historic assets within the historic environment study area (excluding Grade II Listed Buildings).

Site No.	Name	Designation
1	Tyddyn Bleiddyn burial chamber, Cefnmeiradog	Scheduled Monument (SM DE007)
2	Castell Cawr hillfort, Abergele	Scheduled Monument (SM DE114)
3	Pen-y-Corrdyn-Mawr, Llanddulas	Scheduled Monument (SM DE008)
4	Bodelwyddan WWI practice trenches and command post	Scheduled Monument (SM FL186)
5	Gwrych Castle Park and Garden	Grade II* Registered Historic Park and Garden (PGW(Gd)58CON))
6	Kinmel Park, Bodelwyddan	Grade II* Registered Historic Park and Garden (PGW(Gd)54(CON))
7	Bodelwyddan Castle Park and Garden	Grade II Registered Historic Park and Garden (PGWI2(DEN))
8	Tan-yr-Ogof Lodge including adjoining walls and towers to south, east and west	Grade II* listed building (232)
9	Plas Tan-yr-Ogof including adjoining walls and arches to east and west	Grade II* listed building (19040)
10	Tan-yr-Ogof Farmhouse including adjoining arch and walls to east	Grade II* listed building (19041)
11	Hen Wrych Lodge including adjoining crenelated boundary walls and towers	Grade II* listed building (19039)
12	Kings Lodge	Grade II* listed building (233)
13	Gwrych Castle including attached walls and towers and stable block	Grade I listed building (231)
14	Dinorben Hall	Grade II* listed building (149)
15	Kinmel	Grade I listed building (229)
16	Entrance Screen to the main entrance front at Kinmel	Grade II* listed building (18693)
17	Coach-house and Stable Range at Kinmel with terrace walls, steps and archway to east	Grade II* listed building (18681)
18	Pen-'sa'r-Glascoed Farmhouse with garden wall and gate	Grade II* listed building (1385)
19	Bodelwyddan Castle	Grade II* listed building (1383)
21	Plas Newydd	Grade II* listed building (153)
22	Abergele Conservation Area	Conservation Area
26	Bedd-y-Cawr hillfort	Scheduled Monument (SM DE037)
29	Lower Elwy Valley	Registered Landscape of Special Historic Interest
32	Church of St Cynbryd	Grade II* Listed Building (19024)
33	Church of St Michael	Grade II* Listed Building (237)
39	Church of St Margaret	Grade II* Listed Building (1377)
44	Cathedral Church of St Asaph	Grade I Listed Building (1460)
45	The Old Palace, St Asaph	Grade II* Listed Building (1469)

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Site No.	Name	Designation
46	Esgobty Farmhouse, St Asaph	Grade II* Listed Building (1487)
49	St Asaph Foot Bridge	Scheduled Monument (SM FL026) and Grade II* Listed Building (1445)
225	Rhuddlan Bridge	Scheduled Monument (SM FL018) and Grade II* Listed Building (1402)
226	Rhuddlan Castle	Scheduled Monument (SM FL004) and Grade I Listed Building (14977)
227	Rhuddlan Norman Borough	Scheduled Monument (SM FL129)
228	Twthill Motte and Bailey Castle	Scheduled Monument (SM FL015)
229	Rhuddlan Town Banks	Scheduled Monument (SM FL068)
230	Criccin Cross	Scheduled Monument (SM FL102)
231	Plas Heaton	Grade II Registered Historic Park and Garden (I(C)28(DEN))
232	St Beuno's College Park and Garden	Grade II Registered Historic Park and Garden (PGW(C)35(DEN))
233	Brynabella Park and Garden	Grade II Registered Historic Park and Garden (PGW(C)23(DEN))
235	Plas-is-Ilan	Grade II* Listed Building (1392)
236	Bodeugan Farmhouse	Grade II* Listed Building (1376)
237	Dovecote at Bodeugan Farmhouse	Grade II* Listed Building (1418)
238	St Beuno's College	Grade II* Listed Building (26459)
239	Plas Heaton	Grade II* Listed Building (1065)
240	Wigfair Hall	Grade II* Listed Building (19925)
241	Gwernigron Dovecote	Grade II* Listed Building (1382)

Buried archaeology

- 5.6.1.7 The Mona Onshore Development Area is located within a landscape that has the potential to contain archaeological sites and features from all periods. Examination of relevant sources has identified that the greatest potential is in the area in proximity to the Glascoed Road where the alignment of a postulated Roman Road is thought to traverse the local area, but the whole of the landscape should be considered as having some level of archaeological potential.
- 5.6.1.8 Evidence of occupation within this landscape goes back as far as the Lower Palaeolithic period; some of the oldest hominin remains found in Wales were recovered from Pontnewydd Cave in the Vale of Clwyd (approximately 1.5 km south of the Mona Onshore Development Area) and have been dated to c. 230,000 BP. Other important Palaeolithic material has been found at other caves in the area. Mesolithic activity is evidenced at areas of higher ground along the current coastline (e.g. at Prestatyn), whilst material of Neolithic date has been found at similar locations and also at Rhuddlan and on the foreshore at Rhyl amongst other locations (see Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement).

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- 5.6.1.9 The presence of round barrows representing burial monuments of Bronze Age date has been suggested at a couple of locations within the historic environment study area. Evidence for Iron Age activity is principally represented by the hillforts identified in Table 5.9 (Sites 2, 3 and 26) along with possible enclosures and field systems that could date to this period.
- 5.6.1.10 The alignment of a major Roman road leading west from the legionary fortress of *Deva* or *Deva Vetrrix* (Chester) to the forts at *Canovium* (Caerhun, near Conwy) and *Segontium* (Caernarfon) passes through the historic environment study area, primarily along the line of Glascoed Road. The presence of a Roman fort at St Asaph has been postulated; this could potentially be the documented site known as *Varae*.
- 5.6.1.11 St Asaph and Rhuddlan were the main centres of activity within the historic environment study area during the Medieval period, with outlying settlement being mainly in the form of small hamlets and isolated farms. The presence of ridge and furrow earthworks in some areas indicates the nature of medieval and early post medieval agricultural activity at those locations.
- 5.6.1.12 In the Post-medieval period some of the hamlets developed into larger villages, with the towns at St Asaph and Rhuddlan also expanding. However, some hamlets shrunk to become single farmsteads or were totally deserted, and some of the former isolated farms also disappeared.
- 5.6.1.13 The Mona Onshore Development Area does not contain any designated historic landscape elements. However, there are numerous historic field boundaries present and these are indicated on Figures 1.20 – 1.26 of Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement.
- 5.6.1.14 An archaeological geophysical survey commenced in October 2022 and was completed in June 2023. Within the Mona Onshore Development Area only a small number of anomalies of probable archaeological interest have been identified, potentially relating to field systems or low density occupation activity. A number of undetermined linear and discrete anomalies have also been identified which could relate to isolated boundary ditches, former trackways, or extraction pits. The majority of anomalies identified either related to Post-medieval or Modern farming practices or are considered natural in origin. The results of the onshore geophysical survey are presented in Volume 7, Annex 5.3: Onshore geophysical survey report of the Environmental Statement.
- 5.6.1.15 Following completion of the geophysical survey, a range of anomalies across the Mona Onshore Development Area were targeted for further evaluation through the implementation of a programme of intrusive archaeological trial trenching. The trial trenching commenced in September 2023 and continued into November 2023 at which time the ground in most areas became too wet for the programme of work to continue.
- 5.6.1.16 The results of the trial trenching to date include the identification of a spread of occupation activity, the date of which has yet to be confirmed, at a location close to the Mona Landfall, with a similar spread present in a second field in the central part of the Mona Onshore Development Area. Multiple isolated linear and discrete features have been found in several trenches, some of which were detected as geophysical anomalies but remained undated, while the remaining trial trenches were devoid of archaeological features. The programme of trial trenching has established that the geophysical survey was reasonably accurate in terms of locating linear features and spreads of potential archaeological interest, but less accurate with regard to discrete smaller features such as postholes. This is in line with expectations. The results of the

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trial trenching completed up to the end of November 2023 are presented in Volume 7, Annex 5.5: Trial trenching report of the Environmental Statement.

- 5.6.1.17 A survey has also been undertaken within the intertidal part of the Mona Onshore Development Area, and the results of this work are presented within Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement. The survey was initially undertaken with an Unmanned Aerial Vehicle followed by a walkover using parallel transects with 50 m spacing. No artefacts were noted or recovered during the survey, and no in-situ outcrops of peat or other former landscapes were recorded. One small piece of clayey peat was identified but it had clearly been ex-situ for some time as sea molluscs were present within the peat; there was no evidence to suggest the former location of this small piece of clayey peat prior to it being detached and washed out.
- 5.6.1.18 A geoarchaeological technical report has been prepared which examines the available geoarchaeological and palaeoenvironmental data for the Mona Landfall area. The results of this work are presented as an appendix within Volume 7, Annex 5.4: Intertidal survey report of the Environmental Statement. The geoarchaeological technical report has found there is no evidence for the presence of peat deposits within the Mona Landfall area. The area is characterised by shallowly buried clayey till on the very margins of peat accumulation within this part of the Vale of Clwyd. If peat had ever been present here it has most likely been eroded by subsequent tidal processes and may only be preserved within undulations in the surface of the till.

5.6.2 Future baseline scenario

- 5.6.2.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 require that '*an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge*' is included within the Environmental Statement. In the event that the Mona Offshore Wind Project does not come forward, an assessment of the future baseline conditions has been carried out and is described within this section.
- 5.6.2.2 Future changes to the historic environment baseline could include additions to the list of designated historic assets, e.g. additional designations of Scheduled Monuments, listed buildings etc. or amendments to the descriptions of the assets and the area covered by the designation.
- 5.6.2.3 Other changes could occur as a result of further information being discovered regarding archaeological sites, possibly through the completion of the programme of archaeological trial trenching. The results of any such investigations would be submitted into the Examination of the application for a Development Consent Order if they become available in that timeframe.
- 5.6.2.4 No significant change to the historic environment baseline in this area is anticipated to occur as a result of climate change. Drier weather in the summer months may lead to the discovery of as yet unknown archaeological sites that become visible as cropmarks or parchmarks. However, this could also lead to some drying out of deposits (within palaeochannels) which are currently waterlogged or damp and this may result in some loss of significance of these deposits in terms of palaeoenvironmental potential.

5.6.3 Data limitations

- 5.6.3.1 All readily available data required for the assessment have been acquired, collated and critically examined.

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- 5.6.3.2 One key limitation is with regard to the presence, absence, extent, nature and significance of buried archaeological remains within some parts of the Mona Onshore Development Area. A number of non-intrusive methodologies have been utilised in order to gain as much information as possible, including geophysical and walkover surveys, also assessment of aerial photographs (see Volume 7, Annex 5.1: Desk based assessment of the Environmental Statement). Further investigation of land within the Mona Onshore Development Area to determine its archaeological potential has commenced but has not yet been completed due lack of access and poor weather conditions.
- 5.6.3.3 On this basis, no significant assumptions or limitations have therefore been identified in the preparation of this chapter with regard to historic environment that would prevent an assessment of the potential effects being made, other than with regard to buried archaeological remains. For the latter, a worst case assessment has been made, assuming that buried archaeological remains (potentially including remains of high sensitivity or value) are present at some locations.

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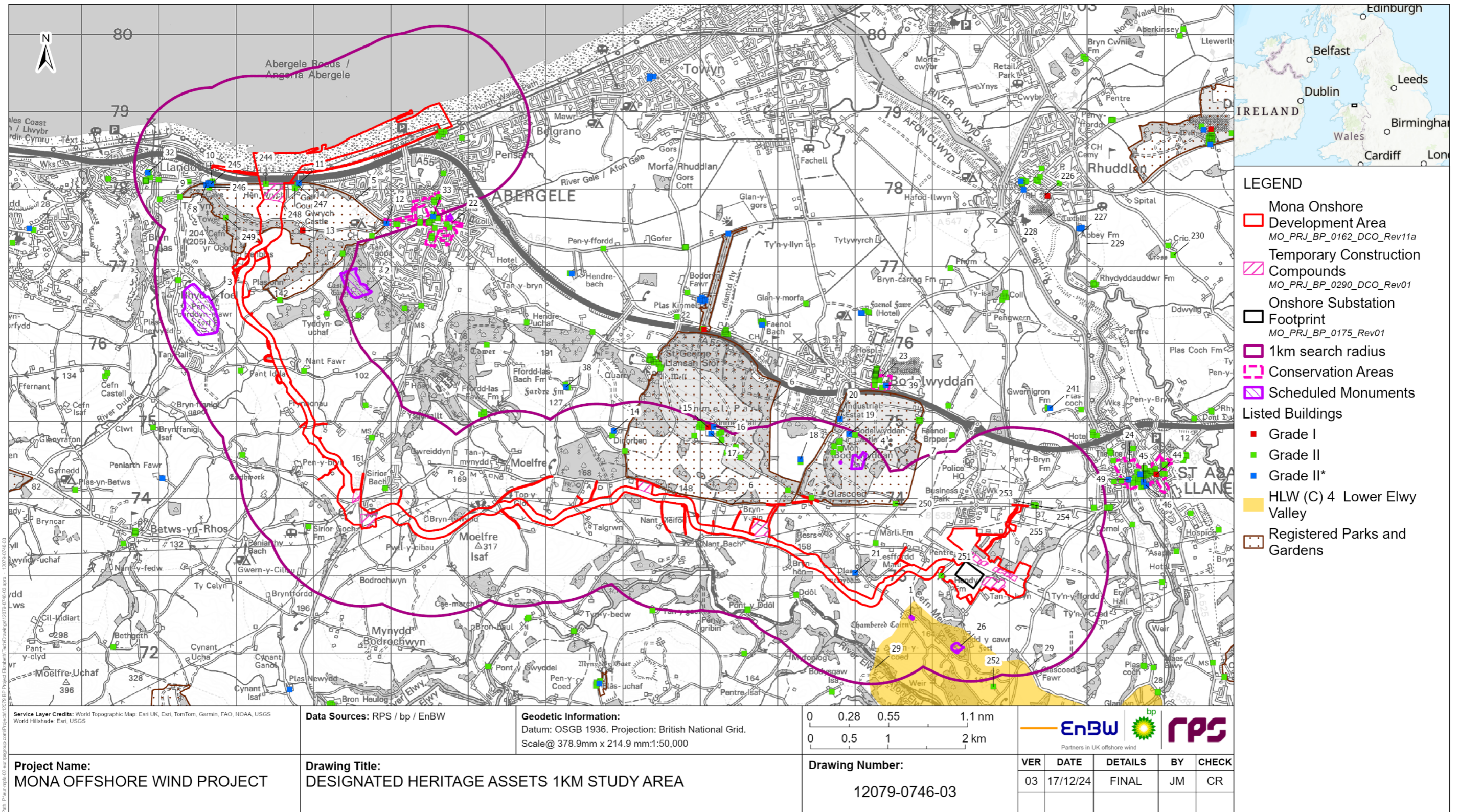


Figure 5.2: Designated heritage assets within the historic environment 1 km study area

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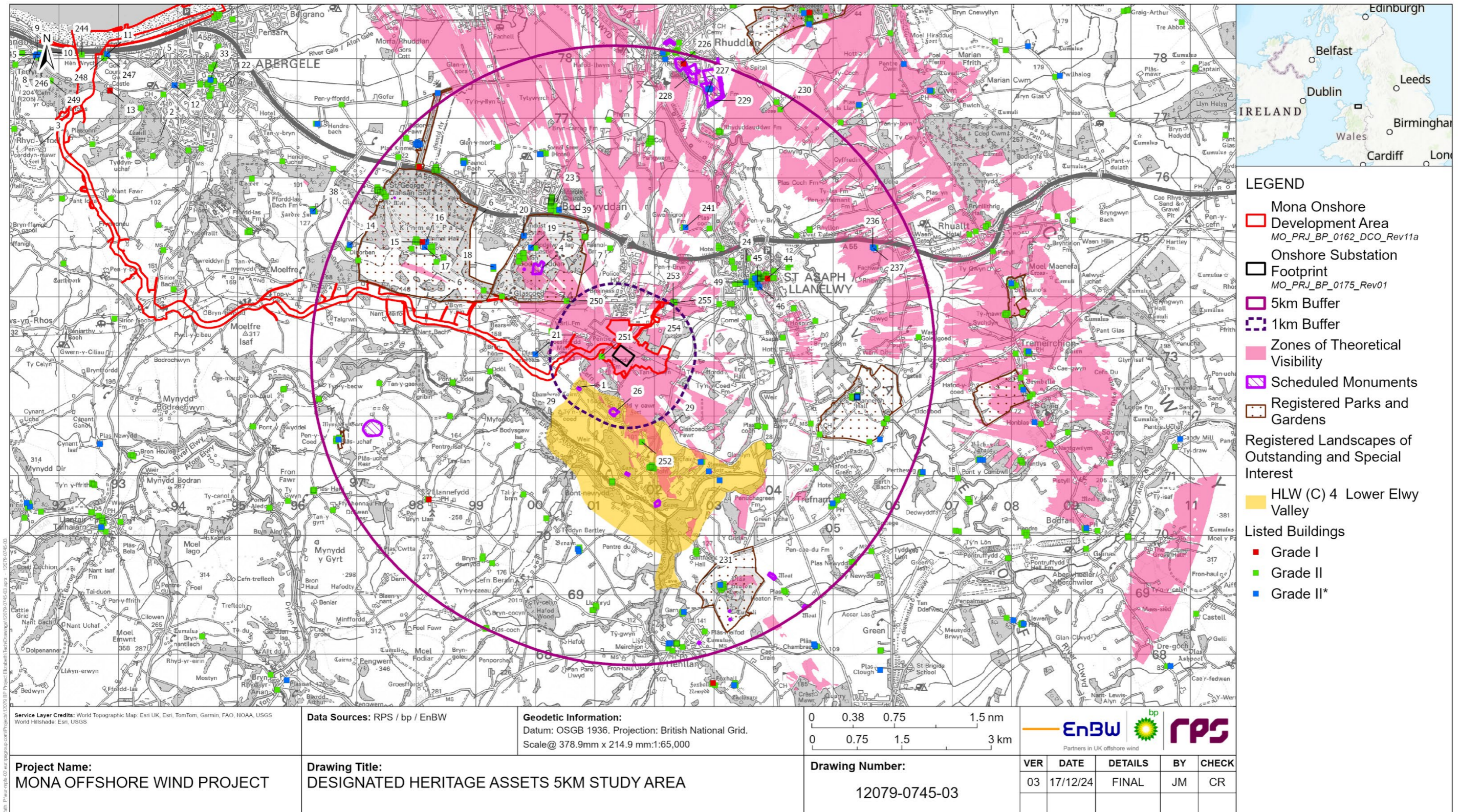


Figure 5.3: Designated heritage assets within the historic environment study area at the Onshore Substation

5.7 Impact assessment methodology

5.7.1 Overview

5.7.1.1 The historic environment impact assessment has followed the methodology set out in Volume 1, Chapter 5: Environmental Impact Assessment methodology of the Environmental Statement. Specific to the historic environment impact assessment, the following guidance documents have also been considered:

- Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Cadw, 2011)
- Heritage Impact Assessment in Wales (Cadw, 2017a)
- Setting of Historic Assets in Wales (Cadw, 2017b).

5.7.2 Impact assessment criteria

5.7.2.1 The criteria for determining the significance of effects (which can be adverse or beneficial) is a two stage process that involves defining the magnitude of the impacts and the sensitivity and value of the receptors. This section describes the criteria applied in this chapter to assign values to the magnitude of potential impacts and the sensitivity and value of the receptors. The terms used to define magnitude and sensitivity are based on those which are described in further detail in Volume 1, Chapter 5: Environmental Impact Assessment methodology of the Environmental Statement.

5.7.2.2 The criteria for defining magnitude in this chapter are outlined in Table 5.10 below.

Table 5.10: Definition of terms relating to the magnitude of an impact.

Magnitude of impact	Definition
High	Change to most or all key elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is lost or substantially harmed (Adverse).
	Change to most or all key elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is substantially enhanced (Beneficial).
Medium	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is clearly harmed (Adverse).
	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is clearly enhanced (Beneficial).
Low	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is slightly harmed (Adverse).
	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is slightly enhanced (Beneficial).
Negligible	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is barely affected (Adverse).
	Change to elements of the historic asset, or changes within the setting of the asset, such that the significance of the asset is barely affected (Beneficial).
No change	No changes to elements of the heritage asset, or within the setting of the asset.

5.7.2.3 The criteria for defining sensitivity in this chapter are outlined in Table 5.11 below.

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Table 5.11: Definition of terms relating to the sensitivity of the receptor.

Sensitivity/ value	Definition
Very High	<p>Historic assets of international importance.</p> <p>World Heritage Sites and the individual attributes that convey their Outstanding Universal Value.</p> <p>Areas associated with intangible heritage and areas with associations with particular innovations, scientific developments, movements or individuals of global importance.</p> <p>Assets that can contribute significantly to acknowledged international research objectives.</p>
High	<p>Scheduled Monuments, Listed Buildings (Grade I, II*), Registered Historic Parks and Gardens (Grade I, II*), Registered Historic Landscapes, Registered Battlefields, Protected Wrecks, Protected Military Remains.</p> <p>Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing grade.</p> <p>Unscheduled sites and monuments of schedulable quality and/or importance including those discovered through the course of evaluation or mitigation.</p> <p>Archaeological assets that can contribute significantly to acknowledged national research objectives.</p> <p>Conservation Areas containing very important buildings.</p> <p>Undesignated structures of clear national importance.</p> <p>Palaeogeographic features with a demonstrable high potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.</p> <p>Undesignated sites of wrecked ships and aircraft that are demonstrably of equivalent archaeological importance to those already designated.</p>
Medium	<p>Conservation Areas, Grade II Listed Buildings and Registered Historic Parks and Gardens.</p> <p>Undesignated archaeological assets that can contribute to regional research objectives.</p> <p>Historic townscapes and landscapes with reasonable coherence, time depth and other critical factor(s).</p> <p>Unlisted assets that can be shown to have exceptional qualities or historic association.</p> <p>Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value.</p> <p>Averagely well-preserved historic landscapes with reasonable coherence, time-depth or other critical factors.</p> <p>Prehistoric deposits with moderate potential to contribute to an understanding of the palaeoenvironment.</p> <p>Undesignated wrecks of ships or aircraft that have moderate potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p>
Low	<p>Historic assets with importance to local interest groups or that contribute to local research objectives.</p> <p>Locally Listed Buildings and Sites of Importance within a district level.</p> <p>Robust undesignated assets compromised by poor preservation and/or poor contextual associations.</p> <p>Robust undesignated historic landscapes.</p> <p>Historic landscapes with importance to local interest groups.</p> <p>Historic landscapes whose value is limited by poor preservation and/or poor survival of contextual associations.</p> <p>Prehistoric deposits with low potential to contribute to an understanding of the palaeoenvironment.</p> <p>Undesignated wrecks of ships or aircraft that have low potential based on a formal assessment of their importance in terms of build, use, loss, survival and investigation.</p>

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Sensitivity/ value	Definition
Negligible	Assets with little or no archaeological or historical interest due to poor preservation or survival. Buildings of little or no architectural or historic note; buildings of an intrusive character. Landscapes with little or no significant historical interest.
Unknown	The importance of the historic asset cannot be ascertained from available evidence.

5.7.2.4 The significance of the likely effect upon any historic asset is determined by correlating the magnitude of the impact and the sensitivity of the receptor. The particular method employed for this assessment is presented in Table 5.12. Where a range of significance of likely effect is presented in Table 5.12, the final assessment for each likely effect is based upon expert judgement.

5.7.2.5 For the purposes of this assessment, any effects with a significance level of minor or less have been concluded to be not significant in terms of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

Table 5.12: Matrix used for the assessment of the significance of the effect.

Sensitivity/value of Receptor	Magnitude of Impact				
	No Change	Negligible	Low	Medium	High
Negligible	No change	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	No change	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	No change	Negligible or Minor	Minor	Moderate	Moderate or Major
High	No change	Minor	Minor or Moderate	Moderate or Major	Major
Very High	No change	Minor	Moderate or Major	Major	Major

5.8 Key parameters for assessment

5.8.1 Maximum design scenario

5.8.1.1 The maximum design scenarios (MDS) identified in Table 5.13 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. These scenarios have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the Environmental Statement. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different infrastructure layout), to that assessed here be taken forward in the final design scheme.

5.8.1.2 A separate MDS utilised for the assessment of impacts and effects arising from the construction, operations and maintenance, and decommissioning of the structures within the Mona Array Area is presented as Table 1.5 in Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.

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Table 5.13: Maximum design scenario considered for the assessment of potential impacts on the historic environment.

^a C=construction, O=operations and maintenance, D=decommissioning

Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Loss of, or harm to, buried archaeological remains, deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets.	✓	✗	✗	<p>Construction phase</p> <p><u>Open cut trenching along the Onshore Cable Corridor:</u></p> <ul style="list-style-type: none"> The area of the permanent Onshore Cable Corridor is 450,000 m² based on a corridor measuring 30 m wide and 15 km in length. The temporary working corridor requires an additional 44 m wide corridor, making the total width of the Onshore Cable Corridor (temporary and permanent requirements) 74 m wide representing an area up to 1,110,000 m². In localised stretches of the route, the total width of the Onshore Cable Corridor may increase to 100 m (e.g. trenchless technique crossings). 	<p>The greatest length and width of the Onshore Cable Corridor represents the greatest potential for impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets.</p>
Loss of or harm to above ground historic assets (Gwrych Castle Grade II* Registered Park and Garden, and Gwrych Castle estate Grade II listed boundary wall) .	✓	✗	✓	<ul style="list-style-type: none"> There are four cable trenches within the permanent onshore cable route, each trench measures 2.5 m wide at the top and 1.5 m wide at the base, and the depth is 1.8 m. The depth of stabilised backfill in each of the four onshore cable trenches is 0.6 m. The maximum number of joint bays along the onshore cable route is 80. The maximum number of link boxes along the onshore cable route is 80. There is one haul road within the onshore cable route corridor; it is 6 m wide excluding passing places and extends the length of the corridor. It will be constructed using imported engineered granular fill with geotextile style layers with a nominal thickness of 400 mm and a maximum thickness of up to 1,000 mm. <p><u>Trenchless techniques</u></p> <ul style="list-style-type: none"> The maximum number of trenchless technique locations along the Onshore Cable Corridor is 45. The temporary works area for trenchless techniques will measure up to 2,500 m²) and will be located within the temporary construction corridor. <p><u>Temporary Construction Compounds</u></p> <ul style="list-style-type: none"> One primary temporary construction compound (measuring up to 22,500 m²) and up to four secondary temporary construction compounds (each measuring up to 15,000 m²) will be located within the Mona Onshore Development Area. Soils will be removed and stored, crushed stone or other suitable fill material will be used across the entire area to create hardstanding. 	<p>The greatest number of cable trenches, link boxes and joint bays, and trenchless technique locations along the Onshore Cable Corridor represents the largest area of disturbance and therefore, the greatest potential for impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground designated historic assets.</p> <p>The greatest area (temporary and permanent) for the Onshore Substation represents the greatest potential for impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets.</p> <p>The greatest length and width of the Mona 400kV Grid Connection Cable represents the greatest potential for impacts on</p>

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Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<p><u>Onshore Substation:</u></p> <ul style="list-style-type: none"> The maximum permanent footprint of the Onshore Substation will measure 65,000 m²: this area will include the substation buildings. The earthworks to create the platform which will measure up to 75,000 m². The Onshore Substation will comprise up to four buildings. The maximum dimensions of the main building are 15 m high, 80 m wide and 140 m long. The excavation for the substation will be up to 6 m deep. Dewatering of the excavation will be required if groundwater is encountered. Access to the Onshore Substation will be via a new permanent access road measuring up to 15 m wide and 800 m in length. The area of temporary works (including construction compounds) will extend up to 150,000 m². <p><u>Open cut trenching along the Mona 400kV Grid Connection Cable:</u></p> <ul style="list-style-type: none"> The area of the permanent onshore corridor is 16,000 m² based on a corridor measuring 16 m wide and 1 km in length. The temporary working corridor requires an additional 32 m wide corridor, making the total width of the route to grid connection (temporary and permanent requirements) 48 m wide, representing an area of up to 48,000 m². There are up to two cable trenches, each trench measures 2.5 m wide at the top and 1.5 m wide at the base, and the depth is 1.8 m. The depth of stabilised backfill in each of the four cable trenches is 0.6 m. The maximum number of joint bays along the 400kV Grid Connection Cable Corridor is two. The maximum number of link boxes along the 400kV Grid Connection Cable Corridor is two. There is one haul road within the 400 kV Grid Connection Cable Corridor; it is 6 m wide excluding passing places and extends the length of the corridor. It will be constructed using imported engineered granular fill with geotextile style layers with a nominal thickness of 400 mm and a maximum thickness of up to 1,000 mm. The maximum number of trenchless technique locations along the 400 kV Grid Connection Cable Corridor is three. The temporary works area for trenchless techniques will measure up to 2,500 m² and will be located within the 48 m wide temporary construction corridor. 	<p>buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground historic assets.</p> <p>The greatest number of cable trenches, link boxes and joint bays, and trenchless technique locations along the Mona 400kV Grid Connection Cable represents the largest area of disturbance and therefore, the greatest potential for impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest, and direct physical impacts on above ground designated historic assets.</p>

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Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<p>Decommissioning phase</p> <p>The Onshore Cable and 400kV Grid Connection Cable will remain in situ, however some of the other onshore infrastructure (e.g. link boxes) may be removed. The Onshore Substation and access road will be removed.</p>	
<p>The impact of construction and decommissioning on above ground historic assets as a result of change within their setting.</p>	✓	×	✓	<p>Construction phase</p> <ul style="list-style-type: none"> • The duration of the Onshore Cable Corridor and 400kV Grid Connection Cable Corridor construction is up to 33 months. • The duration of the Onshore Substation construction is up to 33 months; testing and commissioning is up to 10 months. • The maximum permanent footprint of the Onshore Substation will measure 65,000 m²: this area will include the substation buildings. The earthworks to create the platform which will measure up to 75,000 m². The Onshore Substation will comprise up to four buildings. • The maximum dimensions of the main building are 15 m high, 80 m wide and 140 m long. • Maximum height of the lightning protection is 30 m. • The area of temporary works (including construction compounds) will extend up to 150,000 m² • Construction noise levels – see Volume 7, Annex 9.2: Construction Noise and Vibration Technical Report of the Environmental Statement. <p>Decommissioning phase</p> <p>The Onshore Cable and 400kV Grid Connection Cable will remain in situ, however some of the other onshore infrastructure (e.g. link boxes) may be removed. The Onshore Substation and access road will be removed.</p>	<p>The longest duration of the construction phase represents the greatest potential temporary impacts on above ground historic assets as a result of change within their settings.</p> <p>The largest footprint and greatest number of buildings at the Onshore Substation represents the greatest potential impact on above ground historic assets as a result of change within their setting.</p>
<p>The impact of operations and maintenance of the Onshore Substation on above ground historic assets as a result of change within their setting.</p>	×	✓	×	<p>Operations and maintenance phase</p> <ul style="list-style-type: none"> • The maximum permanent footprint of the Onshore Substation is 65,000 m². • The maximum number of buildings is four within an indicative footprint of 65,000 m². • Maximum building height is 15 m. • Maximum building length is 140 m. • Maximum building width is 80 m. 	<p>The largest footprint and greatest number of buildings at the Onshore Substation represents the greatest potential impact on above ground historic assets as a result of change within their setting.</p>

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Potential impact	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> Maximum height of the lightning protection is 30 m. Operational noise levels – see Volume 7, Annex 9.3: Operation Noise Assessment of the Environmental Statement. 	
The impact of construction and decommissioning of the onshore transmission assets on the character of the historic landscape.	✓	✗	✓	<p>Construction phase</p> <ul style="list-style-type: none"> The duration of the Onshore Cable Corridor and Mona 400kV Grid Connection Cable Corridor construction and installation is up to 33 months. The duration of the Onshore Substation construction is up to 33 months and installation is up to 10 months. <p>Decommissioning phase</p> <p>The Onshore Cable and 400kV Grid Connection Cable will remain in situ, however some of the other onshore infrastructure (e.g. link boxes) may be removed. The Onshore Substation and access road will be removed.</p>	The longest duration of the construction phase represents the greatest potential temporary impacts on the character of the historic landscape.
The impact of operations and maintenance of the onshore substation on the character of the historic landscape.	✗	✓	✗	<p>Operations and maintenance phase</p> <ul style="list-style-type: none"> The permanent footprint of the Onshore Substation is 65,000 m². Maximum number of buildings is four. Maximum building height is 15 m. Maximum building length is 140 m. Maximum building width is 80 m. Maximum height of the lightning protection is 30 m. 	The largest footprint and greatest number of buildings at the Onshore Substation represents the greatest potential impact on the character of the historic landscape.

5.9 Measures adopted as part of the Mona Offshore Wind Project

- 5.9.1.1 For the purpose of the EIA process, the term ‘measures adopted as part of the project’ is used to include the following measures (adapted from IEMA, 2016):
- Measures included as part of the project design. These include modifications to the location or design of the Mona Offshore Wind Project which are integrated into the application for consent. These measures are secured through the consent itself through the description of development and the parameters secured in the DCO and marine licenses (referred to as primary mitigation in IEMA, 2016)
 - Measures required to meet legislative requirements, or actions that are generally standard practice used to manage commonly occurring environmental effects and are secured through the DCO requirements and the conditions of the marine licences (referred to as tertiary mitigation in IEMA, 2016).
- 5.9.1.2 A number of measures (tertiary and primary) have been adopted as part of the Mona Offshore Wind Project to reduce the potential for impacts on the historic environment. These are outlined in Table 5.14 below. As there is a commitment to implementing these measures, they are considered inherently part of the design of the Mona Offshore Wind Project and have therefore been considered in the assessment presented in section 5.10 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures).
- 5.9.1.3 The programmes of archaeological survey that have been undertaken thus far are included within the tertiary mitigation measures set out in Table 5.14 below. This is because the results of the surveys feed into the design process and impacts on archaeological sites and features can be avoided or reduced. Where programmes of archaeological investigation (including dissemination of results and the placement of acquired materials in suitable archives) are undertaken post-consent (ahead of and during construction), this is not considered to be mitigation as it does not avoid or reduce the magnitude of impact or the significance of effect. Rather it is considered that the programmes of archaeological investigation are a means of ‘offsetting’ or ‘remedying’ those impacts and effects (Thomas, 2019).

Table 5.14: Measures adopted as part of the Mona Offshore Wind Project.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Primary measures: Measures included as part of the project design		
The Mona Onshore Cable Corridor, Mona 400kV Grid Connection Cable and the construction site accesses will be designed to minimise land take and to avoid, where possible, impacts on known buried archaeological sites and features.	To reduce potential impacts on buried archaeological assets.	Proposed to be secured as a requirement of the DCO (see Volume 1, Chapter 3: Project description of the Environmental Statement).

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Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
The construction design includes the use of trenchless techniques to avoid removal of trees within the registered historic park and garden at Gwrych Castle and the historic wall along the northern boundary of this park and garden.	To avoid or reduce potential impacts on designated historic assets.	Proposed to be secured as a requirement of the DCO. Committed with the project design (see Volume 5, Appendix 4.3: Onshore crossing schedule of the Environmental Statement).
The nacelles, blades and towers of the offshore wind turbines will be painted light grey.	Light grey is considered the optimum colour for offshore wind turbines to minimise adverse visual effects.	Paint colour is secured in the deemed marine licence (dML) in schedule 14 of the Draft DCO.
The lights on the offshore structures within the Mona Array Area will be operated at the lowest permissible intensity level. The aviation lighting will be kept to 200 candelas in good visibility conditions. However, in poor visibility, e.g. foggy conditions, the lighting levels may rise to 2,000 candelas.	To keep night time visual impacts to a minimum.	Lighting levels are secured as a Requirement of the Draft DCO.

Tertiary measures: Measures required to meet legislative requirements, or adopted standard industry practice

A programme of geophysical survey has been completed and a follow-up programme of archaeological trial trenching has commenced.	To reduce potential impacts on buried archaeological assets. In the event of the identification of significant buried archaeological remains, the Onshore Cable Corridor retains some flexibility to reduce interaction with buried archaeological assets, if reasonably practicable.	The results of the onshore geophysical survey and the interim results of the trial trenching have been used within the assessment presented in the Environmental Statement.
A Written Scheme of Investigation will be prepared and agreed with the relevant stakeholders.	To avoid, reduce or offset the potential impacts on buried archaeological assets.	These measures would be secured as a requirement of the DCO.
An Outline Construction Noise and Vibration Management Plan (Document Reference J26.3) has been prepared as part of the Outline Code of Construction Practice (CoCP) (Document Reference J26). It includes measures to mitigate noise from construction activities associated with the Mona Offshore Wind Project.	To avoid or reduce any potential harm to the significance of a designated historic asset as a result of change within its setting.	These measures would be secured in the outline CoCP (Document reference J26) as a requirement of the DCO.
Areas of landscape planting and a landscape scheme for the Onshore Substation have been identified in the Outline Landscape and Ecology Management Plan (Document Reference J22).	To avoid or reduce any potential harm to the significance of a designated historic asset as a result of change within its setting. To eliminate or reduce harm to the character of the historic landscape.	These measures would be secured in the outline CoCP (Document reference J26) as a requirement of the DCO.
Operating noise limits for the onshore will be agreed with the relevant authority	To avoid or reduce any potential harm to the significance of a designated historic asset as a result of change within its setting.	The operational noise limits would be set by the appropriate DCO requirement.

5.10 Assessment of significant effects

5.10.1 Overview

- 5.10.1.1 The effects of the construction, operations and maintenance, and decommissioning phases of the Mona Offshore Wind Project on the historic environment have been assessed. The potential impacts arising from the construction, operations and maintenance and decommissioning phases of the Mona Offshore Wind Project are listed in Table 5.13, along with the MDS against which each impact has been assessed.
- 5.10.1.2 The assessment of impacts and effects arising from the construction, operations and maintenance, and decommissioning of the structures within the Mona Array Area is presented in Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement and summarised below.
- 5.10.1.3 A description of the potential effect on historic environment receptors caused by each identified impact is given below.

5.10.2 Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest

Construction phase

- 5.10.2.1 The construction of the Mona Landfall, the Onshore Cable Corridor, Mona 400kV Grid Connection Cable Corridor and the Onshore Substation may lead to direct physical impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest. The MDS is summarised in Table 5.13 and includes Onshore Cable Corridor up to 15 km long and 74 m wide (up to 100m wide in localised stretches of the route), Mona 400kV Grid Connection Cable Corridor up to 1 km long and 48 m wide, and an Onshore Substation construction footprint measuring up to 65,000 m².
- 5.10.2.2 These direct impacts could occur through the removal of overlying topsoil and subsoil, through excavation of trenches for cables, or through bulk excavation for deeper works such as launch and reception pits where trenchless techniques are required.

Magnitude of impact

- 5.10.2.3 Impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest would usually be direct and permanent. Such impacts would occur due to the physical removal of all or part of the features or deposits of interest.
- 5.10.2.4 In some situations, impacts on deposits of geoarchaeological and palaeoenvironmental interest (and possibly on buried archaeological remains) will be indirect and potentially permanent. These impacts occur when construction activities affect the environmental properties of deposits of geoarchaeological and palaeoenvironmental interest adjacent to the areas of direct physical removal.
- 5.10.2.5 There is a general potential for buried archaeological remains to be present in all parts of the Mona Onshore Development Area. However, the programme of geophysical survey and the subsequent programme of archaeological trial trenching have not identified any remains of greater than local/regional importance. The potential for deposits of geoarchaeological and palaeoenvironmental interest to be present within the intertidal area appears to be very low, based on the results of the ground

investigations undertaken here for the Project and also previous ground investigations in the area.

5.10.2.6 Where direct impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest cannot be avoided through scheme design, programmes of further investigation will be undertaken post consent ahead of and during construction. These will not reduce the overall impacts or effects but will serve to offset such impacts and effects.

5.10.2.7 The impact is predicted to be of up to local spatial extent, permanent duration, and irreversible. It is predicted that the impact will almost exclusively affect the receptor directly. The magnitude is therefore, considered to be up to **medium**.

Sensitivity of the receptor

5.10.2.8 Buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest could be of national importance, although no remains of this level of significance have currently been identified within the Mona Onshore Development Area. If features or deposits of national importance are identified within the Mona Onshore Development Area as a result of the ongoing programme of archaeological trial trenching then the scheme design will aim to ensure avoidance of impacts on such features or deposits wherever possible. However, the potential discovery of features or deposits of national importance during construction cannot be entirely ruled out. At this stage the sensitivity of the receptor is therefore considered to be up to **medium**.

Significance of the effect

5.10.2.9 Overall, the magnitude of the impact is deemed to be up to medium and the sensitivity of the receptor is considered to be medium. The predicted effect is currently, therefore, of up to **moderate adverse** significance.

Further mitigation and residual effect

5.10.2.10 As described above, where direct impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest cannot be avoided through scheme design, programmes of further investigation will be undertaken ahead of and during construction. These will not reduce the overall impacts or effects but will serve to offset such impacts and effects. The residual effect will therefore continue to be of up to **moderate adverse** significance, which is significant in EIA terms.

5.10.3 Loss of, or harm to, the Gwrych Castle Registered Park and Garden

Construction phase

Magnitude of impact

5.10.3.1 The Onshore Cable Corridor will need to pass through the Grade II* Registered Park and Garden of Special Historic Interest at Gwrych Castle. Scheme design here has minimised direct physical impacts on any part of the designated asset, in particular the design avoids loss of any parts of the designed landscape which cannot be easily reinstated, such as historic tree belts which will be crossed using trenchless techniques.

5.10.3.2 The impact is predicted to be of up to local spatial extent, short term duration, and reversible. The magnitude is therefore considered to be **low**.

Sensitivity of the receptor

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5.10.3.3 The sensitivity of the Grade II* Registered Park and Garden of Special Historic Interest at Gwrych Castle is **high**.

Significance of the effect

5.10.3.4 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is High. The effect will, therefore, be of up to **moderate adverse** significance, which is significant in EIA terms.

Further mitigation and residual effect

5.10.3.5 A programme of further research and investigation will be undertaken ahead of and during construction. This will not reduce the overall impact or effect but will serve to offset such impacts and effects. The residual effect will therefore continue to be of up to **moderate adverse** significance, which is significant in EIA terms.

Decommissioning phase

Magnitude of impact

5.10.3.6 The design of the methodology for decommissioning of the Onshore Cable Corridor within the Gwrych Castle Registered Park and Garden of Special Historic Interest will look to minimise direct physical impacts on any part of the designated asset, in particular by remaining within any impact corridor established during construction. The decommissioning here comprises only the removal of any link boxes.

5.10.3.7 The impact is predicted to be of up to local spatial extent (much lower than during construction), short term duration, and reversible. The magnitude is therefore considered to be **negligible**.

Sensitivity of the receptor

5.10.3.8 The sensitivity of the Grade II* Registered Park and Garden of Special Historic Interest at Gwrych Castle is considered to be **high**.

Significance of the effect

5.10.3.9 Overall, the magnitude of the impact is deemed to be negligible, and the sensitivity of the receptor is considered to be high. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

5.10.4 Loss of, or harm to, the Gwrych Castle estate boundary wall

Construction phase

Magnitude of impact

5.10.4.1 The wall along the northern boundary of the Gwrych Castle park and garden is listed at Grade II (Site 244). It is directly adjacent to the A547 road. The cable installation at this location will be in the form of trenchless techniques beneath the A457 road (and the boundary wall) as well as the adjacent A55 road and the North Wales Mainline railway. However, an existing access through the boundary wall will be widened for the use of construction traffic. The boundary wall at the location of this access is not original, having been realigned at some time after 1950 with the existing access established as part of the same programme of works. A separate Listed Building Consent application for the widening of the access will be submitted to Conwy County Borough Council.

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5.10.4.2 The impact is predicted to be of up to local spatial extent, short term duration, and reversible. The magnitude is therefore considered to be **low**.

Sensitivity of the receptor

5.10.4.3 The Grade II listed boundary wall is of **medium** sensitivity.

Significance of the effect

5.10.4.4 Overall, the magnitude of the impact is deemed to be low and the sensitivity of the receptor is medium. The effect will, therefore, be of **minor adverse** significance, which is not significant in EIA terms.

Further mitigation and residual effect

5.10.4.5 Further research and investigation into the history of the wall will be undertaken ahead of and during construction. This will not reduce the overall impact or effect but will serve to offset such impacts and effects. The residual effect will therefore continue to be of **minor adverse** significance, which is not significant in EIA terms.

Decommissioning phase

5.10.4.6 No further works will be undertaken with regard to the Grade II listed boundary wall during decommissioning; the widening of the existing access will be a permanent arrangement. Consequently there would be no impacts of effects in relation to this heritage asset.

5.10.5 The impact of the onshore transmission assets on above ground historic assets as a result of change within their setting.

5.10.5.1 A separate assessment of the likely impacts of the Mona Offshore Wind Project as a result of changes within the settings of designated historic asset is presented as Volume 7, Annex 5.6: Settings assessment (onshore infrastructure) of the Environmental Statement.

Construction phase

5.10.5.2 Construction activities are likely to take place within the settings of designated historic assets. These activities could harm the significance of such assets, principally through changes in visual aspects of the setting but also through changes to the noise environment. The MDS is summarised in Table 5.13.

5.10.5.3 Impacts on designated historic assets as a result of change within their settings during construction would be indirect (non-physical) and short term.

5.10.5.4 The historic environment settings assessment found that there would be an effect of **moderate adverse** significance during construction in respect of the Grade II listed Pentre Meredydd (Site 251), which is significant in EIA terms. In respect of all other designated historic assets, effects during construction would be of **minor adverse** or **negligible adverse** significance, which is not significant in EIA terms. However, effects would be short-term and in all cases would be fully reversible.

Decommissioning phase

5.10.5.5 Decommissioning activities are likely to take place within the settings of designated historic assets. These activities could harm the significance of such assets, principally

through changes in visual aspects of the setting but also through changes to the noise environment. The MDS is summarised in Table 5.13.

- 5.10.5.6 Impacts on designated historic assets as a result of change within their settings during decommissioning would be indirect (non-physical) and short term.
- 5.10.5.7 Where possible, the decommissioning design will seek to avoid or minimise harmful changes within the settings of designated historic assets.
- 5.10.5.8 The historic environment settings assessment found that in respect of all designated historic assets, effects during decommissioning would be of **minor adverse** or **negligible adverse** significance, which is not significant in EIA terms. However, effects would be short-term and in all cases would be fully reversible.

5.10.6 The impact of the onshore transmission assets on the character of the historic landscape.

- 5.10.6.1 Construction activities could change the character of the historic landscape within the historic environment study area. These activities could harm the significance of the historic landscape, principally through changes in visual aspects but also through loss of elements of the historic landscape such as field boundaries and former farm buildings. Some of these field boundaries may be 'Important hedgerows' as defined by the criteria identified in the Hedgerow Regulations 1997. These field boundaries are identified in Volume 7, Annex 5.1: Desk Based Assessment of the Environmental Statement. A survey of hedgerows has also been undertaken in accordance with the ecology criteria of the Hedgerow Regulations 1997 and the results are reported in Volume 7, Annex 3.4: Hedgerow survey of the Environmental Statement. The MDS is summarised in Table 5.13.

Construction phase

Magnitude of impact

- 5.10.6.2 Impacts on the character of the historic landscape during construction would be direct (physical) and indirect (non-physical) and short term. The scheme design seeks to minimise any loss of elements of the historic landscape, and field boundaries that are fully or partially removed during construction would be replaced. The exception to this would be within the land required for the Onshore Substation, where it may not be possible to replace any field boundaries removed during construction.
- 5.10.6.3 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor directly and indirectly. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

- 5.10.6.4 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

- 5.10.6.5 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be short term and in almost all cases would be fully reversible.

Decommissioning phase

5.10.6.6 Decommissioning activities would change the character of the historic landscape within the historic environment study area. These activities could harm the significance of the historic landscape, principally through changes in visual aspects. The MDS is summarised in Table 5.13.

Magnitude of impact

5.10.6.7 Impacts on the character of the historic landscape during decommissioning would be direct (physical) and indirect (non-physical) and short term.

5.10.6.8 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor directly and indirectly. The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

5.10.6.9 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

5.10.6.10 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be short term and in almost all cases would be fully reversible.

5.10.7 The impact of the Onshore Substation on above ground historic assets as a result of change within their setting

5.10.7.1 A separate assessment of the likely impacts of the Onshore Substation as a result of changes within the settings of designated historic assets is presented as Volume 7, Annex 5.6: Settings assessment (onshore infrastructure) of the Environmental Statement.

Operations and maintenance

5.10.7.2 The Onshore Substation is located within the settings of designated historic assets including listed buildings and Registered Historic Parks and Gardens. The introduction of this facility within these settings could harm the significance of such assets, principally through changes in visual aspects of the setting but also through changes to the noise environment. The MDS is summarised in Table 5.13.

5.10.7.3 Impacts on designated historic assets as a result of change within their settings during operations and maintenance would be indirect (non-physical) and long term, but potentially fully reversible.

5.10.7.4 The historic environment settings assessment found that there would be an effect of **moderate adverse** significance during the operations and maintenance of the Onshore Substation in respect of the Grade II listed Pentre Meredydd (Site 251), which is significant in EIA terms. The proposed programme of landscape planting around the substation, detailed within the Outline Landscape and Ecology Management Plan (Document reference J22), would reduce this effect such that by Year 15 summer it would be **minor adverse**, which is not significant in EIA terms.

5.10.7.5 In respect of all other designated historic assets, effects during the operations and maintenance of the Onshore Substation would be of **minor adverse** or **negligible adverse** significance, which is not significant in EIA terms. The proposed programme of landscape planting around the substation would further mitigate such effects.

5.10.8 The impact of operations and maintenance of the Onshore Substation on the character of the historic landscape

Operations and maintenance

5.10.8.1 The operations and maintenance of the Onshore Substation would change the character of the historic landscape within that part of historic environment study area. This could harm the significance of the historic landscape, principally through changes in visual aspects but potentially also changes to the noise environment. The MDS is summarised in Table 5.13.

Magnitude of impact

5.10.8.2 Impacts on the character of the historic landscape during operations and maintenance of the Onshore Substation would be indirect and long-term. The proposed programme of landscape planting around the substation would reduce impacts on the character of the historic landscape through partial screening of views of the Onshore Substation (see the Outline Landscape and Ecology Management Plan (Document reference J22)).

5.10.8.3 The impact is predicted to be of up to local spatial extent, long-term duration, and generally reversible. It is predicted that the impact will affect the receptor directly (non-physically). The magnitude is therefore, considered to be **low**.

Sensitivity of the receptor

5.10.8.4 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be up **low**.

Significance of the effect

5.10.8.5 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be long-term and would be fully reversible.

5.10.9 The impact of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting

5.10.9.1 A separate assessment of the likely impacts of the structures within the Mona Array Area as a result of changes within the settings of designated historic assets is presented as Volume 7, Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.

5.10.9.2 The Mona Array Area is located within the settings of designated historic assets including World Heritage Sites, Scheduled Monuments, ancient monuments (Isle of Man), listed buildings, registered buildings (Isle of Man), Registered Historic Parks and Gardens and Registered Historic Landscapes (Wales). The introduction of the turbines and offshore substation platforms within these settings could harm the significance of such assets through changes in visual aspects of the setting. The MDS is summarised

in Table 1.5 within Volume 7, Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.

5.10.9.3 Impacts on designated historic assets as a result of change within their settings would occur during construction, operations and maintenance, and decommissioning. The impacts would be the same for each of these phases, and would be indirect (non-physical) and long term, but potentially fully reversible.

5.10.9.4 The settings assessment (offshore infrastructure) found that effects during the construction, operations and maintenance, and decommissioning of the structures within the Mona Array Area would be of **minor adverse** or **negligible adverse** significance, which is not significant in EIA terms. No mitigation or monitoring is proposed.

5.11 Cumulative effect assessment methodology

5.11.1 Methodology

5.11.1.1 The Cumulative Effects Assessment (CEA) takes into account the impact associated with the Mona Offshore Wind Project together with other projects and plans. The projects and plans selected as relevant to the CEA presented within this chapter are based upon the results of a screening exercise (see Volume 5, Annex 5.1: Cumulative effects screening matrix of the Environmental Statement). Each project has been considered on a case by case basis for screening in or out of this chapter's assessment based upon data confidence, effect-receptor pathways and the spatial and temporal scales involved.

5.11.1.2 The historic environment CEA methodology has followed the methodology set out in Volume 1, Chapter 5: Environmental Impact Assessment methodology of the Environmental Statement. As part of the assessment, all projects and plans considered alongside the Mona Offshore Wind Project have been allocated into 'tiers' reflecting their current stage within the planning and development process, these are listed below.

5.11.1.3 A tiered approach to the assessment has been adopted, as follows:

- Tier 1:
 - Under construction
 - Permitted application
 - Submitted application
 - Those currently operational that were not operational when baseline data were collected, and/or those that are operational but have an ongoing impact.
- Tier 2:
 - Scoping report has been submitted
 - Scoping report has been submitted and is in the public domain.
- Tier 3:
 - Scoping report has not been submitted
 - Identified in the relevant Development Plan
 - Identified in other plans and programmes.

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- 5.11.1.4 This tiered approach is adopted to provide a clear assessment of the Mona Offshore Wind Project alongside other projects, plans and activities.
- 5.11.1.5 The specific projects, plans and activities scoped into the CEA are outlined in Table 5.15. The locations of such projects, plans and activities are indicated on Figure 5.4.

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Table 5.15: List of other projects, plans and activities considered within the CEA.

Project / Plan	Status	Distance from the Mona Onshore Development Area (km)	Distance from the Onshore Substation (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
Tier 1							
Awel y Mor Offshore Wind Farm (onshore infrastructure)	Application determined.	0	0.1	Onshore transmission assets (cable routes and onshore substation).	Construction to commence in 2026.	Site to be commissioned by 2030.	Yes
Tier 3							
St Asaph Solar Farm	Screening direction provided by Planning and Environmental Decisions Wales.	0.0	0.87	Solar farm (photovoltaic).	Not provided but assumed to overlap with Mona Offshore Wind Project.	Not provided but assumed to overlap with Mona Offshore Wind Project.	Yes
NGET 31/2023/0525	Pre-application (EIA screening request)	0.03	0.41	Extension to the existing Bodelwyddan electricity substation	Not provided but assumed to overlap with Mona Offshore Wind Project	Not provided but assumed to overlap with Mona Offshore Wind Project	Yes
NGET	Pre-application	0.03	0.41	Application under section 37 of the Electricity Act 1989 for the installation of new overhead lines.	Not provided but assumed to overlap with Mona Offshore Wind Project	Not provided but assumed to overlap with Mona Offshore Wind Project	Yes
NGET	Pre-application	0.03	0.41	Permitted development comprising extension to the GIS hall required to facilitate the extension to the existing Bodelwyddan electricity substation	Not provided but assumed to overlap with Mona Offshore Wind Project	Not provided but assumed to overlap with Mona Offshore Wind Project	Yes

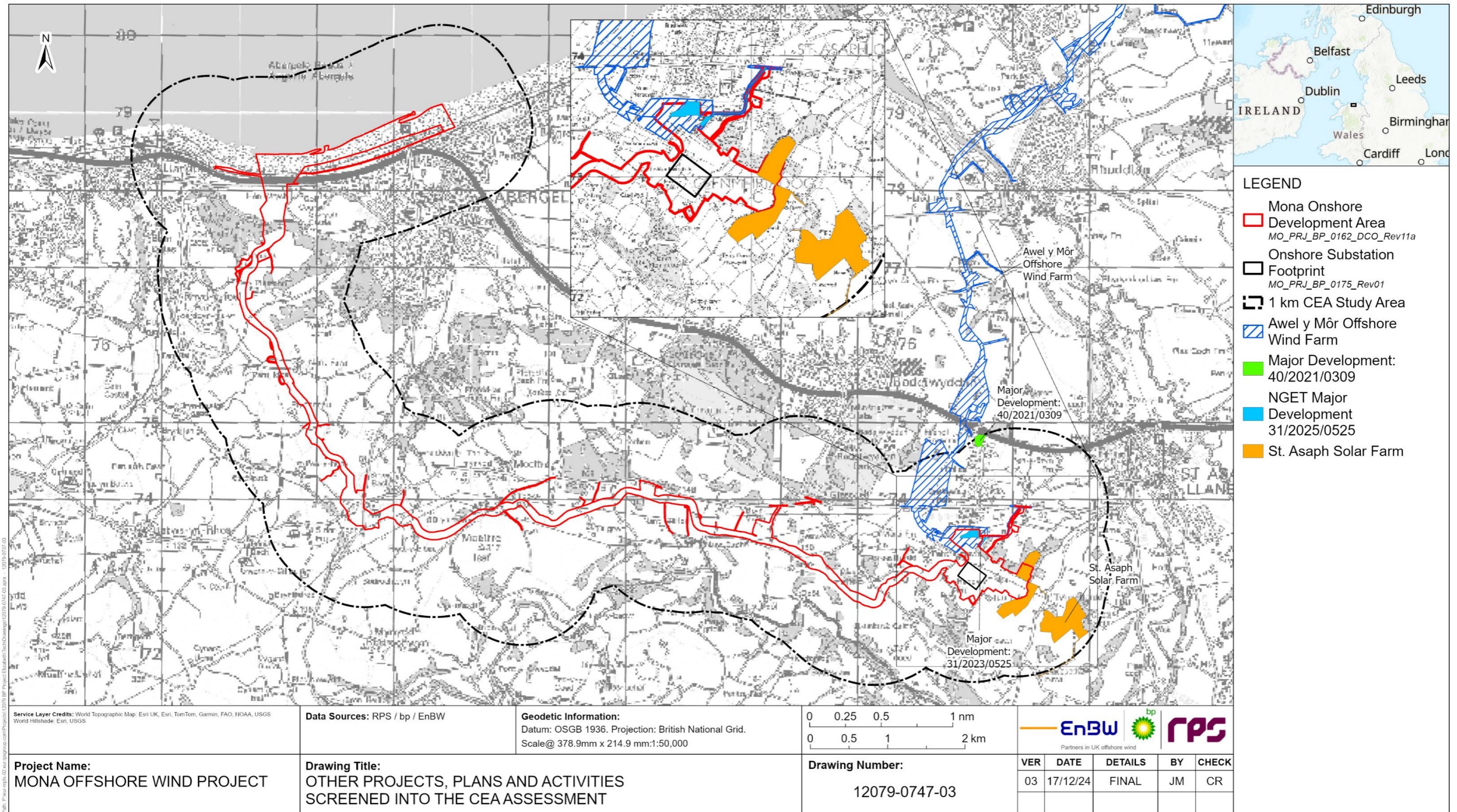


Figure 5.4: Other projects, plans and activities screened into the cumulative effects assessment.

5.11.2 Maximum design scenario

- 5.11.2.1 The maximum design scenarios (MDS) identified in Table 5.16 have been selected as those having the potential to result in the greatest effect on an identified receptor or receptor group. The cumulative effects presented and assessed in this section have been selected from the Project Design Envelope provided in Volume 1, Chapter 3: Project description of the Environmental Statement as well as the information available on other projects and plans, in order to inform the 'MDS'. Effects of greater adverse significance are not predicted to arise should any other development scenario, based on details within the Project Design Envelope (e.g. different wind turbine layout), to that assessed here, be taken forward in the final design scheme.
- 5.11.2.2 The CEA has considered the Mona Offshore Wind Project, alongside the National Grid Bodelwyddan substation extension proposal. The information publicly available up to three months before application (see Volume 1, Chapter 3: Environmental Impact Assessment Methodology of the Environmental Statement) was considered in this CEA. The CEA has therefore been undertaken based on the latest available information in the public domain up to the 21 November 2023, which is the Autumn 2023 consultation material (National Grid, 2023). If further information is available for the proposal before the Mona Offshore Wind Project receives Development Consent, the Applicant will review the information and provide any update needed to the CEA.
- 5.11.2.3 The MARES Connect project is proposing to submit a planning application in 2024 for an interconnector cable, landfall and onshore substation with connection to the National Grid. The project has identified several landfall zones and zones for its onshore substation and there is the potential for overlap with the Mona Onshore Development Area. The CEA has not considered the Mona Offshore Wind Project, alongside the MARES Connect project as insufficient information was publicly available prior to the Mona Offshore Wind Project DCO submission (see Volume 1, Chapter 3: Environmental Impact Assessment methodology of the Environmental Statement). However, if further information becomes available for the proposal before the Mona Offshore Wind Project receives Development Consent, the Applicant will review the information and provide any update needed to the CEA.

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Table 5.16: Maximum design scenario considered for the assessment of potential cumulative effects on the historic environment.

^a C=construction, O=operations and maintenance, D=decommissioning

Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
Loss of, or harm to, buried archaeological remains, deposits of geoarchaeological and palaeoenvironmental interests.	✓	x	x	MDS as described for the Mona Offshore Wind Project (Table 5.13) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> Awel y Mor Offshore Wind Farm (onshore infrastructure) Tier 3 <ul style="list-style-type: none"> St Asaph Solar Farm Major Development 31/2023/0525 (NGET - extension) NGET – overhead lines NGET – Permitted development 	The other schemes may impact on buried archaeological remains, deposits of geoarchaeological and palaeoenvironmental interest, and above ground heritage assets that have been deliberately avoided by the Mona Offshore Wind Project.
Loss of, or harm to, above ground designated historic assets.	✓	x	✓		
The impact of the onshore transmission assets on above ground historic assets as a result of change within their setting.	✓	x	✓	MDS as described for the Mona Offshore Wind Project (Table 5.13) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> Awel y Mor Offshore Wind Farm (onshore infrastructure) Tier 3 <ul style="list-style-type: none"> St Asaph Solar Farm Major Development 31/2023/0525 (NGET - extension) NGET – overhead lines NGET – Permitted development 	The other schemes may lead to additional changes within the setting of above ground historic assets.
The impact of operations and maintenance of the onshore substation on above ground historic assets as a result of change within their setting.	x	✓	x	MDS as described for the Mona Offshore Wind Project (Table 5.13) assessed cumulatively with the following other projects/plans: Tier 1 <ul style="list-style-type: none"> Awel y Mor Offshore Wind Farm (onshore infrastructure) Tier 3 <ul style="list-style-type: none"> St Asaph Solar Farm 	The other schemes may lead to additional changes within the setting of above ground historic assets.

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Potential cumulative effect	Phase ^a			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> Major Development 31/2023/0525 (NGET - extension) NGET – overhead lines NGET – Permitted development 	
The impact of the onshore transmission assets on the character of the historic landscape.	✓	x	✓	<p>MDS as described for the Mona Offshore Wind Project (Table 5.13) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1</p> <ul style="list-style-type: none"> Awel y Mor Offshore Wind Farm (onshore infrastructure) <p>Tier 3</p> <ul style="list-style-type: none"> St Asaph Solar Farm Major Development 31/2023/0525 (NGET - extension) NGET – overhead lines NGET – Permitted development 	The other schemes may lead to additional changes to the character of the historic landscape.
The impact of operations and maintenance of the onshore substation on the character of the historic landscape.	x	✓	x	<p>MDS as described for the Mona Offshore Wind Project (Table 5.13) assessed cumulatively with the following other projects/plans:</p> <p>Tier 1</p> <ul style="list-style-type: none"> Awel y Mor Offshore Wind Farm (onshore infrastructure) <p>Tier 3</p> <ul style="list-style-type: none"> St Asaph Solar Farm Major Development 31/2023/0525 (NGET - extension) NGET – overhead lines NGET – Permitted development 	The other schemes may lead to additional changes to the character of the historic landscape.

5.12 Cumulative effects assessment

5.12.1 Overview

5.12.1.1 A description of the significance of cumulative effects upon the historic environment receptors arising from each identified impact is given below.

5.12.2 Loss of, or harm to buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest during construction

5.12.2.1 Where land within the Mona Onshore Development Area is also potentially required for another development, whichever scheme undertakes the work across that land first would have to address the issue of the loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest. When the next scheme requires access to that land it is very likely that the buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest will have been removed as part of the works required for the first scheme. Consequently there would be no potential for cumulative effects.

5.12.3 Loss of, or harm to, above ground historic assets during construction

5.12.3.1 With regard to the Mona Onshore Development Area, this impact would only occur at the very west end of the Onshore Cable Corridor, close to the Mona Landfall. This is because the construction of the Mona onshore transmission assets would only directly affect above ground historic assets in this location. There are no projects or plans considered within the CEA which are also in this location, therefore there is no potential for cumulative effects.

5.12.4 The impact of the onshore transmission assets (including the Onshore Substation) on above ground historic assets as a result of change within their setting

5.12.4.1 It is possible that some above ground historic assets could experience change within their setting from the construction or operations and maintenance of the Mona onshore transmission assets and also from the construction or operations and maintenance of other projects or plans included within the CEA.

Tier 1

Construction phase

Magnitude of impact

5.12.4.2 The changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the onshore infrastructure of the Awel y Mor Offshore Wind Farm could be similar to those arising from the construction of the Mona onshore transmission assets. This would only occur at the east end of the Mona Onshore Development Area as this is where the Onshore Substation would be visible in conjunction with the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

5.12.4.3 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor indirectly.

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5.12.4.4 The magnitude of the cumulative impact in respect of the Grade II listed Pentre Meredydd (Site 251) is considered to be **medium adverse**, and in respect of all other historic assets is considered to be **negligible**.

Sensitivity of the receptor

5.12.4.5 Designated historic assets within the historic environment study area include many examples which are of national importance. The sensitivity of the receptor is therefore considered to be up to **high**.

Significance of effect

5.12.4.6 In respect of the Grade II listed Pentre Meredydd (Site 251) the magnitude of the cumulative impact is considered to be medium adverse and the sensitivity of the receptor is medium. The effect will therefore be **moderate adverse**, which is significant in EIA terms.

5.12.4.7 In respect of all other historic assets, the magnitude of the cumulative impact is deemed to be up to negligible and the sensitivity of the receptor is considered to be up to high. The effect will, therefore, be of up to **minor adverse** significance, which is not significant in EIA terms.

5.12.4.8 However, effects would be short term and in all cases would be fully reversible.

Operations and maintenance phase

Magnitude of impact

5.12.4.9 The changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the onshore infrastructure of the Awel y Mor Offshore Wind Farm could be similar to those arising from the operations and maintenance of the Mona Onshore Transmission Assets. This would only occur at the east end of the Mona Onshore Development Area as this is where the Onshore Substation would be visible in conjunction with the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

5.12.4.10 The impact is predicted to be of up to local spatial extent, long term duration, and generally reversible.

5.12.4.11 The magnitude of the cumulative impact in respect of the Grade II listed Pentre Meredydd (Site 251) is considered to be **medium adverse**, and in respect of all other historic assets is considered to be **negligible**.

Sensitivity of the receptor

5.12.4.12 Designated historic assets within the historic environment study area include many examples which are of national importance. The sensitivity of the receptor is therefore considered to be up to **high**.

Significance of effect

5.12.4.13 In respect of the Grade II listed Pentre Meredydd (Site 251) the magnitude of the cumulative impact is considered to be medium adverse and the sensitivity of the receptor is medium. The effect will therefore be **moderate adverse**, which is significant in EIA terms. This would reduce over time as the landscape planting around the

Onshore Substation reaches maturity, resulting in a cumulative effect of **minor adverse** significance which is not significant in EIA terms.

- 5.12.4.14 In respect of all other assets, the magnitude of the cumulative impact is deemed to be up to negligible and the sensitivity of the receptor is considered to be up to high. The effect will, therefore, be of up to **minor adverse** significance, which is not significant in EIA terms. However, effects would be long term and in all cases would be fully reversible.

Tier 3

Construction phase

Magnitude of impact

- 5.12.4.15 Based on the information currently available, the changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the NGET projects would not contribute towards any potential cumulative impacts. The changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the St Asaph solar farm would be considerably less than those arising from the construction of the Mona Onshore Transmission Assets due to the nature of solar farm developments.
- 5.12.4.16 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible.
- 5.12.4.17 The magnitude of the cumulative impact in respect of the Grade II listed Pentre Meredydd (Site 251) is considered to be **medium adverse**, and in respect of all other historic assets is considered to be **negligible**.

Sensitivity of the receptor

- 5.12.4.18 Designated historic assets within the historic environment study area include many examples which are of national importance. The sensitivity of the receptor is therefore considered to be up to **high**.

Significance of effect

- 5.12.4.19 In respect of the Grade II listed Pentre Meredydd (Site 251) the magnitude of the cumulative impact is considered to be medium adverse and the sensitivity of the receptor is medium. The effect will therefore be **moderate adverse**, which is significant in EIA terms.
- 5.12.4.20 In respect of all other historic assets, the magnitude of the cumulative impact is deemed to be up to negligible and the sensitivity of the receptor is considered to be up to high. The effect will, therefore, be of up to **minor adverse** significance, which is not significant in EIA terms. However, effects would be short term and in all cases would be fully reversible.

Operations and maintenance phase

Magnitude of impact

- 5.12.4.21 Based on the information currently available, the changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the NGET projects would not contribute towards any potential cumulative impacts.

The changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the St Asaph solar farm would be considerably less than those arising from the operations and maintenance of the Mona Onshore Transmission Assets due to the nature of solar farm developments.

5.12.4.22 The impact is predicted to be of up to local spatial extent, long term duration, and generally reversible.

5.12.4.23 The magnitude of the cumulative impact in respect of the Grade II listed Pentre Meredydd (Site 251) is considered to be **medium adverse**, and in respect of all other historic assets is considered to be **negligible**.

Sensitivity of the receptor

5.12.4.24 Designated historic assets within the historic environment study area include many examples which are of national importance. The sensitivity of the receptor is therefore considered to be up to **high**.

Significance of effect

5.12.4.25 In respect of the Grade II listed Pentre Meredydd (Site 251) the magnitude of the cumulative impact is considered to be medium adverse and the sensitivity of the receptor is medium. The effect will therefore be **moderate adverse**, which is significant in EIA terms. This would reduce over time as the landscape planting around the Onshore Substation reaches maturity resulting in a cumulative effect of **minor adverse** significance which is not significant in EIA terms.

5.12.4.26 In respect of all other assets, the magnitude of the cumulative impact is deemed to be up to negligible and the sensitivity of the receptor is considered to be up to high. The effect will, therefore, be of up to **minor adverse** significance, which is not significant in EIA terms. However, effects would be long term and in all cases would be fully reversible.

5.12.5 The impact of the onshore transmission assets on the character of the historic landscape

Tier 1

Construction phase

Magnitude of impact

5.12.5.1 It is possible that the character of the historic landscape could experience change from the construction of the Mona Onshore Development Area and also from the construction or operations and maintenance of other projects or plans included within the CEA.

5.12.5.2 The changes to the character of the historic landscape arising from the construction and operations and maintenance of the onshore infrastructure of the Awel y Mor Offshore Wind Farm could be similar to those arising from the construction of the Mona Onshore Transmission Assets. This would only occur at the east end of the Mona Onshore Development Area and would most likely happen with regard to the proximity of the Onshore Substation to the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

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5.12.5.3 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor directly (non-physically). The magnitude of the cumulative impact is therefore, considered to be **low**.

Sensitivity of the receptor

5.12.5.4 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

5.12.5.5 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be short term and would be fully reversible.

Operations and maintenance phase

Magnitude of impact

5.12.5.6 The changes to the character of the historic landscape arising from the construction and operations and maintenance of the onshore infrastructure of the Awel y Mor Offshore Wind Farm could be similar to those arising from the operations and maintenance of the Mona Onshore Transmission Assets. This would only occur at the east end of the Mona Onshore Development Area and would most likely happen with regard to the proximity of the Onshore Substation to the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

5.12.5.7 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor directly (non-physically). The magnitude of the cumulative impact is considered to be **low**.

Sensitivity of the receptor

5.12.5.8 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

5.12.5.9 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be long term and would be fully reversible.

Tier 3

Construction phase

Magnitude of impact

5.12.5.10 Based on the information currently available, the changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the NGET projects would not contribute towards any potential cumulative impacts.

The changes to the character of the historic landscape arising from the construction and operations and maintenance of the St Asaph solar farm would be considerably less than those arising from the construction of the Mona Onshore Transmission Assets due to the nature of solar farm developments.

- 5.12.5.11 The impact is predicted to be of up to local spatial extent, short term duration, and generally reversible. It is predicted that the impact will affect the receptor indirectly (non-physically). The magnitude of the cumulative impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 5.12.5.12 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

- 5.12.5.13 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be short term and would be fully reversible.

Operations and maintenance phase

Magnitude of impact

- 5.12.5.14 Based on the information currently available, the changes within the setting of above ground heritage assets arising from the construction and operations and maintenance of the NGET projects would not contribute towards any potential cumulative impacts. The changes to the character of the historic landscape arising from the construction and operations and maintenance of the St Asaph solar farm would be considerably less than those arising from the operations and maintenance of the Mona Onshore Transmission Assets due to the nature of solar farm developments.

- 5.12.5.15 The impact is predicted to be of up to local spatial extent, long term duration, and generally reversible. It is predicted that the impact will affect the receptor indirectly (non-physically). The magnitude of the cumulative impact is therefore, considered to be **low**.

Sensitivity of the receptor

- 5.12.5.16 There are no designated historic landscapes within the Mona Onshore Development Area, and just one within the historic environment study area. The sensitivity of the receptor is therefore considered to be **low**.

Significance of the effect

- 5.12.5.17 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be up to low. The effect will, therefore, be of **negligible** or **minor adverse** significance, which is not significant in EIA terms. The effect would be long term and would be fully reversible.

5.12.6 The impact of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting

- 5.12.6.1 A separate CEA has been undertaken with regard to the likely impacts of the structures within the Mona Array Area as a result of changes within the settings of designated historic assets. This is presented with Volume 7, Annex 5.7: Settings assessment (offshore infrastructure) of the Environmental Statement.
- 5.12.6.2 The CEA for the structures within the Mona Array Area examined the potential for:
- Cumulative effects arising from the Mona Offshore Wind Project in conjunction with existing offshore wind farm projects and offshore wind farm projects under construction, permitted and those submitted for planning approval (Tier 1). Existing offshore wind farms have been grouped into three offshore clusters, namely: Northwest England (the Barrow, Ormonde, Walney (including extensions) and West of Duddon Sands offshore wind farms), North Wales (the Burbo Bank (and extension), Gwynt y Môr, North Hoyle and Rhyl Flats offshore wind farm) and Robin Rigg. Permitted offshore wind farms comprise the Awel y Môr Offshore Wind Farm
 - Cumulative effects arising from the Mona Offshore Wind Project in conjunction with proposed offshore wind farm projects at scoping stage or in relevant plans (Tier 2). These comprise: the proposed Morgan Generation Assets, the proposed Mooir Vannin Offshore Wind Project and the proposed Morecambe Offshore Wind Project.
- 5.12.6.3 There are no Tier 3 planned offshore and onshore wind farms of relevance to Mona Offshore Wind Project.
- 5.12.6.4 The CEA for the structures within the Mona Array Area found that there was potential for adverse cumulative effects to arise in respect of some designated historic assets as a result of the cumulative change within their settings.
- 5.12.6.5 When the Mona Offshore Wind Project is considered along with Tier 1 existing offshore wind farms and the consented Awel y Môr offshore wind farm, potential cumulative effects are most likely to be experienced in respect of designated heritage assets in mainland north Wales and in the area extending east from the Great Orme to Point of Ayr.
- 5.12.6.6 In some cases this could result in a **moderate adverse** effect, which is significant in EIA terms. This is considered likely to apply to the following designated historic assets:
- Creuddyn and Conwy - Registered Historic Landscape
 - Condover House - Grade II* Registered Park and Garden and Grade II* listed building
 - Gwrych Castle - Grade II* Registered Park and Garden and Grade I listed building
 - Happy Valley - Grade II Registered Park and Garden
 - Church of St Tudno - Grade II* listed building
 - Llandudno Pier – Grade II* listed building.
- 5.12.6.7 Cumulative impacts on these designated historic assets as a result of change within their settings would occur during operations and maintenance, and decommissioning. The impacts would be the same for each of these phases, and would be indirect (non-physical) and long term, but fully reversible.

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- 5.12.6.8 For all of the above, the greater contribution to the magnitude of impact is from the consented Awel y Môr offshore wind farm as this is closer to the historic assets and thus the turbines will appear larger than the Mona turbines. However, the Mona Array Area would widen the visible extent of offshore wind farms into an area where there are no existing or consented developments of this nature.
- 5.12.6.9 With regard to all other designated heritage assets considered within the CEA for the structures within the Mona Array Area, when the Mona Offshore Wind Project is considered along with Tier 1 existing offshore wind farms and the consented Awel y Môr offshore wind farm any potential cumulative effects would be of **minor adverse** or **negligible adverse** significance, which is not significant in EIA terms.
- 5.12.6.10 With regard to all designated heritage assets considered within the CEA for the structures within the Mona Array Area, when the Mona Offshore Wind Project is considered along with Tier 2 proposed offshore wind farms any potential cumulative effects would be of **negligible adverse** significance, which is not significant in EIA terms.
- 5.12.6.11 No mitigation or monitoring is proposed as there are no reasonably practicable measures which would avoid or reduce these cumulative effects.

5.13 Transboundary effects

- 5.13.1.1 A screening of transboundary impacts has been carried out and has identified that there was no potential for significant transboundary effects with regard to the historic environment from the terrestrial elements of the Mona Offshore Wind Project upon the interests of other states.

5.14 Inter-related effects

- 5.14.1.1 Inter-relationships are considered to be the impacts and associated effects of different aspects of the proposal on the same receptor. These are considered to be:
- Project lifetime effects: Assessment of the scope for effects that occur throughout more than one phase of the Mona Offshore Wind Project (construction, operations and maintenance, and decommissioning), to interact to potentially create a more significant effect on a receptor than if just assessed in isolation in these three phases
 - Receptor-led effects: Assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor. As an example, all effects on the historic environment, such as direct physical harm or loss, change within setting etc., may interact to produce a different, or greater effect on this receptor than when the effects are considered in isolation. Receptor-led effects may be short term, temporary or transient effects, or incorporate longer term effects.
- 5.14.1.2 A description of the likely inter-related effects arising from the Mona Offshore Wind Project on the historic environment is provided in Volume 3, Chapter 11: Inter-related effects – onshore, of the Environmental Statement.

5.15 Summary of impacts, mitigation measures and monitoring

5.15.1 Overview

5.15.1.1 Information on the historic environment within the historic environment study area was collected through the desk based review of available data, along with site visits and an ongoing programme of archaeological fieldwork. Consultation was undertaken with relevant stakeholders to ensure that the data sources examined thus far were the appropriate ones and that the archaeological fieldwork is being undertaken in accordance with best practice.

5.15.1.2 Table 5.17 presents a summary of the potential impacts, measures adopted as part of the project and residual effects in respect to the historic environment. The impacts assessed include:

- Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest during construction
- Loss of, or harm to, above ground historic assets during construction (Gwrych Castle Grade II* Registered Park and Garden, and Gwrych Castle estate Grade II listed boundary wall
- The impact of construction of the onshore transmission assets on above ground historic assets as a result of change within their setting
- The impact of construction of the onshore transmission assets on the character of the historic landscape
- The impact of operations and maintenance of the Onshore Substation on above ground historic assets as a result of change within their setting
- The impact of operations and maintenance of the Onshore Substation on the character of the historic landscape
- Loss of, or harm to, above ground historic assets during decommissioning
- The impact of decommissioning on the character of the historic landscape
- The impact of construction, operations and maintenance, and decommissioning of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting.

5.15.1.3 Overall, it is concluded that there will be the following likely significant effects arising from the Mona Offshore Wind Project during the construction, operations and maintenance or decommissioning phases:

- Effects of up to **moderate adverse** significance arising from loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeo-environmental interest during construction
- Effects of up to **moderate adverse** significance arising from the loss of, or harm to, the Gwrych Castle Grade II* Registered Park and Garden during construction
- Effect of **moderate adverse** significance arising from the construction and operations and maintenance of the Onshore Substation within the setting of the Grade II listed Pentre Meredydd, although the landscape planting scheme around the substation site would eventually reduce this effect to one of **minor adverse** significance.

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- 5.15.1.4 The assessment of impacts and effects presented above represents a worst case scenario, with a very precautionary approach taken for both receptor sensitivity and impact magnitude. With the availability of additional baseline information and an updated design for these onshore elements, it is anticipated that the potential significant adverse effects reported in this chapter of the Environmental Statement will be avoided or reduced to the extent that they are no longer significant.
- 5.15.1.5 Table 5.18 presents a summary of the potential cumulative impacts, mitigation measures and residual effects. The cumulative impacts assessed include:
- The impact of the onshore transmission assets on above ground historic assets as a result of change within their setting
 - The impact of the onshore transmission assets on the character of the historic landscape.
- 5.15.1.6 Overall, it is concluded that that there will be the following likely significant cumulative effects arising from the Mona Offshore Wind Project during the construction, operations and maintenance or decommissioning phases:
- Effect of **moderate adverse** significance arising from the construction and operations and maintenance of the Onshore Substation within the setting of the Grade II listed Pentre Meredydd, although by Year 15 summer the landscape planting scheme around the substation site would reduce this effect to one of **minor adverse** significance.
 - Potential cumulative effects of **moderate adverse** significance arising from the operations and maintenance, and decommissioning of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting when the Mona Offshore Wind Project is considered along with Tier 1 existing offshore wind farms and the consented Awel y Môr offshore wind farm. These potential cumulative effects would be experienced at the following designated historic assets:
 - Creuddyn and Conwy - Registered Historic Landscape
 - Conover House - Grade II* Registered Park and Garden and Grade II* listed building
 - Gwrych Castle - Grade II* Registered Park and Garden and Grade I listed building
 - Happy Valley - Grade II Registered Park and Garden
 - Church of St Tudno - Grade II* listed building
 - Llandudno Pier – Grade II* listed building.
- 5.15.1.7 No potential transboundary effects on historic environment resources have been identified in regard to impacts arising from the Mona Offshore Wind Project.

5.15.2 Conclusion in relation to the NPS

- 5.15.2.1 It is important to not make a direct correlation between EIA and NPS processes in assessing impacts arising from a development. The role of EIA is to identify likely significant effects, which can arise from Low, Medium or High impacts, and depend on the value/importance of a heritage asset and the magnitude of any impact on that asset. The NPS looks at harm to, or loss of, the heritage significance of an asset, asking (in the case of designated heritage assets) if the harm is substantial, or less

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than substantial, and sets up tests depending on the value/importance of the asset (paragraphs 5.9.29 – 5.9.32 of NPS EN-1 (Department for Energy Security and Net Zero, 2024a)). There is no direct correlation between the results and terminology of the NPS process and those of the EIA process, and no current published guidance on this issue.

5.15.2.2 The assessment presented above has identified significant adverse effects in respect of impacts on buried archaeological remains and deposits of geoarchaeological and palaeo-environmental interest, and on designated heritage assets including impacts arising from changes within the settings of such assets.

5.15.2.3 However, all of the impacts on heritage assets identified with regard to the Mona Offshore Wind Project represent less than substantial harm to the significance of those assets. None of the identified impacts would represent substantial harm as this is a particularly high test as explained in the National Planning Practice Guideline (Ministry of Housing, Communities and Local Government, 2021).

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Table 5.17: Summary of potential environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning

Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest.	✓	✗	✗	Undertake field surveys, route and substation optioneering aimed at avoiding or minimising impacts.	C. Up to Medium	Up to Medium	Up to Moderate adverse	Effects offset through programme of further investigation ahead of and during construction.	Up to Moderate adverse	None
Loss of, or harm to, Gwrych Castle Grade II* Registered Park and Garden.	✓	✗	✓	Careful scheme design where cable route could directly impact above the historic park and garden.	C. Low	High	Up to Moderate adverse	Effects offset through programme of further research and investigation ahead of and during construction.	Up to Moderate adverse	None
					D. Negligible	High	Minor adverse		Minor adverse	None
Loss of, or harm to, Gwrych Castle estate Grade II listed boundary wall.	✓	✗	✗	Cable trench passes beneath the wall using Horizontal Directional Drilling methodology. Existing access point will be widened but at a location where the wall was realigned and rebuilt post 1950.	C. Low	Medium	Minor adverse	Effects offset through programme of further research and investigation ahead of and during construction.	Minor adverse	None
Impact on Grade II listed Pentre Meredydd as a result of change within its setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation	C. Medium	Medium	Moderate adverse	None	Moderate adverse	None
					O. Medium	Medium	Moderate adverse	None	Moderate adverse	None

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Description of impact	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
				optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	D. Low	Medium	Minor adverse	None	Minor adverse	None
Impact on other above ground heritage assets as a result of change with their setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					O. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					D. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
Impact on the character of the historic landscape.	✓	✓	✓	Undertake site visits as part of historic landscape character assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None
					O. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None
					D. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None
Impact of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting	✓	✓	✓	Undertake site visits as part of settings assessment	C. Up to Low	Up to Very High	Negligible or Minor adverse	None	Negligible or Minor adverse	None
					O. Up to Low	Up to Very High	Negligible or Minor adverse	None	Negligible or Minor adverse	None
					D. Up to Low	Up to Very High	Negligible or Minor adverse	None	Negligible or Minor adverse	None

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Table 5.18: Summary of potential cumulative environmental effects, mitigation and monitoring.

^a C=construction, O=operations and maintenance, D=decommissioning

Description of effect	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
Tier 1										
Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest.	✓	×	×	Undertake field surveys, route and substation optioneering aimed at avoiding or minimising impacts.	C. Low	Unknown	Unknown	Effects offset through programme of further investigation ahead of and during construction.	Unknown	None
Impact on Grade II listed Pentre Meredydd as a result of change within its setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Medium	Medium	Moderate adverse	None	Moderate adverse	None
					O. Medium	Medium	Moderate adverse	None	Moderate adverse	None
					D. Low	Medium	Minor adverse	None	Minor adverse	None
The impact of the onshore transmission assets on other above ground historic assets as a result of change within their setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					O. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					D. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
The impact of the onshore transmission assets on the character of the historic landscape.	✓	✓	✓	Undertake site visits as part of historic landscape character assessment, route and substation optioneering aimed at avoiding or minimising	C. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None
					O. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None

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Description of effect	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
				impacts, landscape plans to further minimise impacts.	D. Low	Low	Negligible or Minor adverse	None	Negligible or Minor adverse	None
Impact of the structures within the Mona Array Area on above ground historic assets as a result of change within their setting	x	✓	✓	Undertake site visits as part of settings assessment	O: Up to Low	Up to Very High	Up to Moderate Adverse	None	Up to Moderate Adverse	None
					D: Up to Low	Up to Very High	Up to Moderate Adverse	None	Up to Moderate Adverse	None

Tier 3

Loss of, or harm to, buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest.	✓	x	x	Undertake field surveys, route and substation optioneering aimed at avoiding or minimising impacts.	C. Low	Unknown	Unknown	Effects offset through programme of further investigation ahead of and during construction	Unknown	None
Impact on Grade II listed Pentre Meredydd as a result of change within its setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Medium	Medium	Moderate adverse	None	Moderate adverse	None
					O. Medium	Medium	Moderate adverse	None	Moderate adverse	None
					D. Low	Medium	Minor adverse	None	Minor adverse	None
The impact of the onshore transmission assets on above ground historic assets as a result of change within their setting.	✓	✓	✓	Undertake site visits as part of settings assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					O. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None
					D. Negligible	Up to High	Up to Minor adverse	None	Up to Minor adverse	None

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Description of effect	Phase ^a			Measures adopted as part of the project	Magnitude of impact	Sensitivity of the receptor	Significance of effect	Further mitigation	Residual effect	Proposed monitoring
	C	O	D							
									Up to Minor adverse	
The impact of the onshore transmission assets on the character of the historic landscape.	✓	✓	✓	Undertake site visits as part of historic landscape character assessment, route and substation optioneering aimed at avoiding or minimising impacts, landscape plans to further minimise impacts.	C. Low O. Low D. Low	Low Low Low	Negligible or Minor adverse Negligible or Minor adverse Negligible or Minor adverse	None None None	Negligible or Minor adverse Negligible or Minor adverse Negligible or Minor adverse	None None None

5.16 References

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