

# MONA OFFSHORE WIND PROJECT

## Preliminary Environmental Information Report

Volume 3, chapter 19: Historic environment



April 2023  
FINAL

Image of an offshore wind farm

**Document status**

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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"> <li>• Grade I – are of exceptional interest.</li> <li>• Grade II* - are particularly important.</li> <li>• Grade II – are of special interest.</li> </ul>
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 Proposed Onshore Development Area	The area of land to be temporarily or permanently occupied during the construction, operation and maintenance and decommissioning of the Mona Offshore Wind Project.
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"> <li>• Grade I – are of exceptional interest.</li> <li>• Grade II* - are particularly important.</li> <li>• Grade II – are of special interest.</li> </ul>
Roman	The time period AD43 to AD410.
Scheduled Monument	An archaeological site given legal protection by being placed on a 'Schedule' of monuments.
Upper Palaeolithic	The time period 30,000 to 10,000BC.
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.

## Acronyms

Acronym	Description
AD	Anno Domini – after the birth of Christ

Acronym	Description
AHEF	Archaeology and Heritage Engagement Forum
BC	Before Christ
BP	Before Present – for the citing of radiocarbon dates BP is taken to be before AD1950
CEA	Culminative Effects Assessment
CPAT	Clwyd Powys Archaeological Trust
DBA	Desk-Based Assessment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HER	Historic Environment Record
MDS	Maximum Design Scenario
MLWS	Mean Low Water Springs
NG	National Grid
PEDW	Planning and Environmental Decisions Wales
PEIR	Preliminary Environmental Information Report
RCAHMW	Royal Commission on the Ancient and Historical Monuments of Wales
UAV	Unmanned Aerial Vehicle
WW1	First World War (1914-1918)
WW2	Second World War (1939-1945)
ZTV	Zone of Theoretical Visibility

## Units

Unit	Description
m <sup>2</sup>	Square metres
km	Kilometres
km <sup>2</sup>	Square kilometres
m	Metres

## 19 Historic Environment

### 19.1 Introduction

#### 19.1.1 Overview

19.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) 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 13: Marine archaeology of the PEIR.

19.1.1.2 The onshore elements of the Mona Offshore Wind Project comprise:

- Mona Landfall to the west of Abergele
- Two potential Onshore Substation option sites to the southwest of St Asaph
- The Mona Onshore Cable Corridor approximately 18km in length, that links the Landfall to the Onshore Substation
- The Mona 400kV Grid Connection Cable, approximately 3km in length linking the Mona Onshore Substation to the National Grid (NG) substation at Bodelwyddan.

19.1.1.3 These elements are included in the Mona Proposed Onshore Development Area together with the construction compounds, accesses and other land that will be temporarily or permanently occupied during the construction, operations and maintenance and decommissioning of the Mona Offshore Wind Project.

19.1.1.4 The assessment presented is informed by the following technical chapters:

- Volume 7, annex 19.1: Historic environment desk-based assessment of the PEIR
- Volume 7, annex 19.2: Historic environment policy and guidance of the PEIR
- Volume 7, annex 19.3: Historic environment preliminary geophysical survey report of the PEIR
- Volume 7, annex 19.4: Historic environment intertidal survey report of the PEIR.

19.1.1.5 This chapter also draws upon information contained within

- Volume 4, chapter 26: Seascape, landscape and visual resources of the PEIR.

#### 19.1.2 Purpose of chapter

19.1.2.1 The primary purpose of the PEIR is outlined in volume 1, chapter 1: Introduction of the PEIR. In summary, the primary purpose of an Environmental Statement is to support the Development Consent Order (DCO) application for the Mona Offshore Wind Project under the Planning Act 2008 (the 2008 Act). The PEIR constitutes the Preliminary Environmental Information for the Mona Offshore Wind Project and sets

out the findings of the Environmental Impact Assessment (EIA) to date to support the pre-application consultation activities required under the 2008 Act. The EIA will be finalised following completion of pre-application consultation and the Environmental Statement will accompany the application to the Secretary of State for Development Consent.

19.1.2.2 The PEIR forms the basis for statutory consultation which will last for 47 days and conclude on 4 June 2023 as outlined in volume 1, chapter 2: Policy and legislation of the PEIR. At this point, comments received on the PEIR will be reviewed and incorporated (where appropriate) into the Environmental Statement, which will be submitted in support of the application for Development Consent scheduled for quarter one of 2024.

19.1.2.3 In particular, this PEIR chapter:

- Presents the existing environmental baseline established from desk studies, site specific surveys and consultation
- Identifies any assumptions and limitations encountered in compiling the environmental information
- Presents the potential environmental effects on the historic environment arising from the Mona Offshore Wind Project, based on the information gathered and the analysis and assessments undertaken (additional data gathering is ongoing, including further fieldwork, which will feed into the assessment undertaken in the Environmental Statement)
- Highlights any necessary monitoring and mitigation measures which could prevent, minimise, reduce or offset the possible environmental effects of the Mona Offshore Wind Project on the historic environment.

#### 19.1.3 Historic environment study area

19.1.3.1 The Mona historic environment study area comprises the area of land that will be temporarily or permanently occupied during the construction, operation and maintenance and decommissioning of the Mona Offshore Wind Project (hereafter referred to as the Mona Proposed 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 Landscapes of Special Historic Interest) within 1km from the edge of the Mona Proposed Onshore Development Area and a 5 km radius centred on the Mona Onshore Substation option sites.
- Other designated heritage assets (e.g. Grade II listed buildings, Grade II Registered Parks and Gardens of Special Historic Interest, Conservation Areas) within 1km from the edge of the Mona Proposed Onshore Development Area and a 1km radius centred on the Mona Onshore Substation option sites.
- Buried archaeology and other non-designated historic assets (as recorded on the Historic Environment Record (HER) data) within 250m of the Mona Proposed Onshore Development Area and a 1 km radius centred on the Mona Onshore Substation option sites.

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- 19.1.3.2 The Mona 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 (Mona Offshore Wind Ltd, 2022) and was discussed with the Archaeology and Heritage Engagement Forum (see Table 19.4).
- 19.1.3.3 The Mona historic environment study area is shown on Figure 19.1. It applies to the project alone assessment and the cumulative effects assessment (CEA). Whilst the buffers at Landfall extend into the sea, no data has been examined in this chapter for locations seaward of MLWS as this data is covered in volume 2, chapter 13: Marine archaeology of the PEIR.

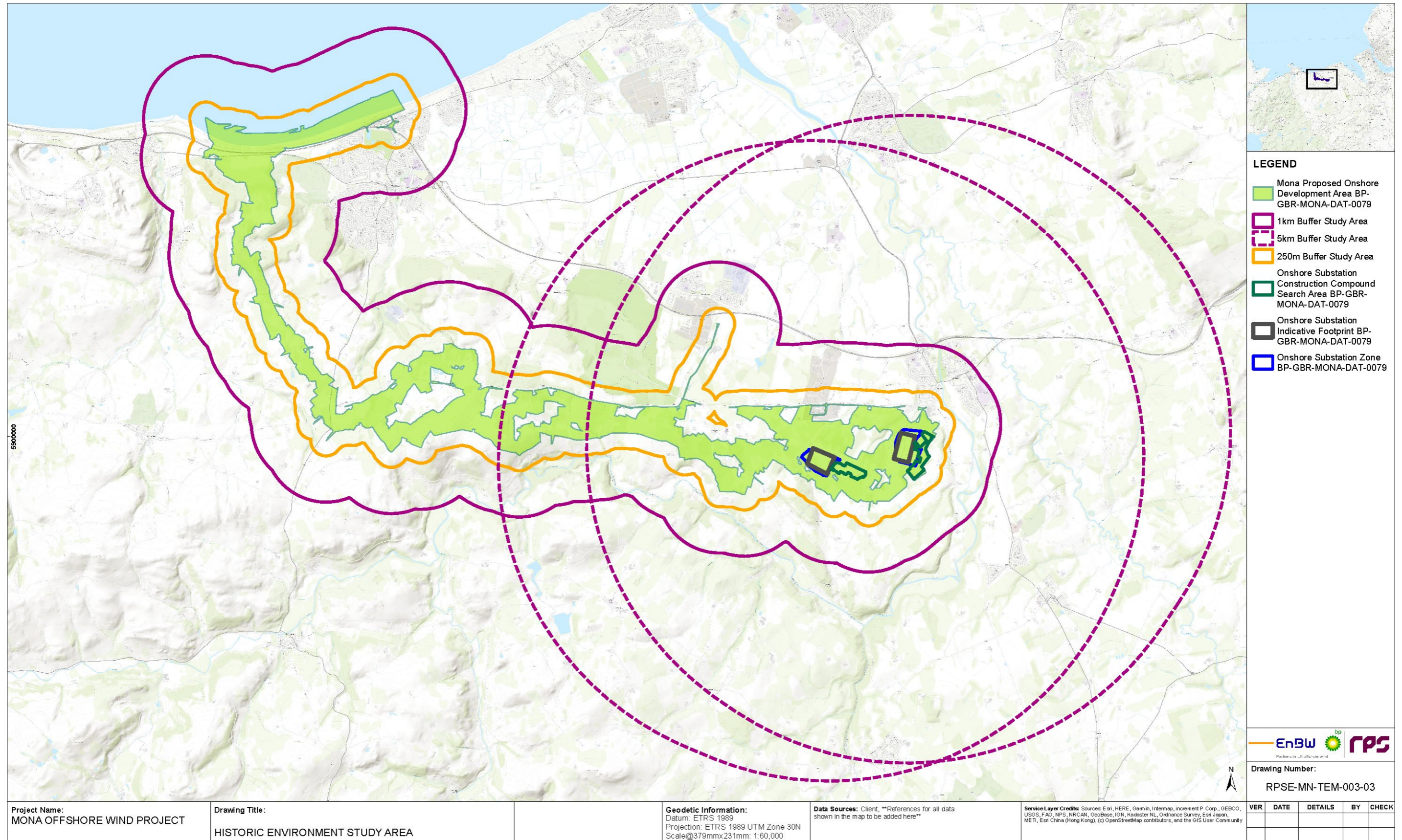


Figure 19.1: Historic environment study area.

## 19.2 Policy context

19.2.1.1 The policy context for the Mona Offshore Wind Project is set out in volume 1, chapter 2: Policy and legislation of the PEIR. Specific policy relevant to the historic environment is set out in volume 7, annex 19.2: Historic environment policy and guidance of the PEIR, with a short summary provided here.

### 19.2.2 National Policy Statements

19.2.2.1 Planning policy on renewable energy infrastructure is presented in volume 1, chapter 2: Policy and legislation of the PEIR. Planning policy on offshore renewable energy Nationally Significant Infrastructure Projects (NSIPs), specifically in relation to the historic environment, is contained in the Overarching National Policy Statement (NPS) for Energy (EN-1; DECC, 2011).

19.2.2.2 NPS EN-1 include guidance on what matters are to be considered in the assessment. These are summarised in Table 19.1 below. NPS EN-1 also highlights a number of factors relating to the determination of an application and in relation to mitigation. These are summarised in Table 19.2 below.

19.2.2.3 Table 19.1 refers to the current NPSs, specifically NPS EN-1 (DECC, 2011) If the NPSs are updated prior to the application for Development Consent, the revised NPSs will be fully considered in relation to the historic environment within the Environmental Statement.

**Table 19.1: Summary of the NPS EN-1 provisions relevant to the historic environment.**

Summary of NPS EN-1 provision	How and where considered in the PEIR
The applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting towards that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is necessary to understand the potential impact of the proposal on the significance of the heritage asset. (paragraph 5.8.8 of NPS EN-1)	A description of the baseline heritage assets is provided in section 19.4 and volume 7, annex 19.1.
Where a development site 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, representative visualisations may be necessary to explain the impact. (paragraph 5.8.9 of NPS EN-1)	The desk based assessment is presented in volume 7, annex 19.1 of the PEIR. Field evaluation has been undertaken and the available results are presented in volume 7, annex 19.3 and volume 7, annex 19.4 of the PEIR. No representative visualisations have been produced for the PEIR as the location, form and massing of the built elements of the Project have not yet been defined.
The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets can be adequately understood from the application and supporting documents. (paragraph 5.8.10 of NPS EN-1)	The impact of the proposed development on the significance of heritage assets is clearly assessed within section 19.8.

**Table 19.2: 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 PEIR
The decision-maker 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.	This information is presented within section 19.4.

### 19.2.3 Planning Policy Wales

19.2.3.1 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.

19.2.3.2 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
- 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.

### 19.2.4 Local Planning Policies

19.2.4.1 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). Key provisions are set out in Table 19.3 along with details as to how these have been addressed within the assessment. Further information on policy is set out in volume 7, annex 19.2: Historic environment policy and guidance of the PEIR.



**Table 19.3: Local Planning Policy relevant to the historic environment.**

Policy	Key provisions	How and where considered in the PEIR
<b>Conwy County Borough Council: Adopted Local Development Plan (October 201)</b>		
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 section 19.8.
<b>Denbighshire County Council Local Development Plan (October 2013)</b>		
Policy VOE1	Development proposals should maintain and enhance sites of built heritage	Mitigation measures are set out in Table 19.13.
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 section 19.8.

### 19.3 Consultation

19.3.1.1 A summary of the key issues raised during consultation activities undertaken to date specific to the historic environment is presented in Table 19.4 below, together with how these issues have been considered in the production of this historic environment chapter of the PEIR.

**Table 19.4: 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 were 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 19.8.
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 section 19.8.
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 Ministers' 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 19.2: Historic environment policy and guidance of the PEIR. In agreement with Cadw, the assessment of the impacts of the proposed development on the settings of designated historic assets has been undertaken to the completion of Stage 1 of the staged approach set out in '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 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 19.1: Historic environment desk based assessment of the PEIR.</p> <p>The preliminary results of the geophysical survey are presented in volume 7, annex 19.3: Historic environment preliminary geophysical survey report of the PEIR.</p> <p>The results of the intertidal historic environment survey are presented in volume 7, annex 19.4: Historic environment intertidal survey report of the PEIR.</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 19.4: Historic environment intertidal survey report of the PEIR.</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 acknowledged and continue to be relevant in the ongoing optioneering for the Onshore Substation site.
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 19.8 of this chapter.

Date	Consultee and type of response	Issues raised	Response to issue raised and/or were considered in this chapter
January 2023	Non statutory consultee response to Scoping Report	<p>Having read through your Environmental Impact Scoping Report as published on the Planning Inspectorate website there appears to be an anomaly regarding the listed buildings that have been identified in relation to the potential locations for the onshore transmission infrastructure.</p> <p>In section 8 of the Scoping Report - Historic Environment, you list all the historical assets in table 8.2, this appears on page 285 of 414 (page 658 of the entire 842 page document).</p> <p>There is no mention of Pentre Meredydd which is a listed building.</p> <p>Pentre Meredydd is registered with Cadw: Source ID 19929; Grade 2, Sub Medieval vernacular thatched house.</p> <p>This is an important omission given that it sits in extremely close proximity to options 2 and 3 of your potential onshore substation sites.</p>	<p>Table 8.2 in the Mona Scoping Report identifies (by name) all of the Grade I and Grade II* buildings within the Mona Onshore Transmission Infrastructure Scoping Search Area. Grade II listed buildings are not identified within this table as there was a considerable number due to the extensive nature of the Scoping Search Area. The locations of all Grade II listed buildings within the Scoping Search Area were identified on Figure 8.1 of the Mona Scoping Report.</p> <p>The proximity of the Grade II listed Pentre Meredydd to the Onshore Substation Option 2 site is noted within section 19.4 of this chapter. Onshore Substation Option 3 is no longer under consideration.</p>

## 19.4 Baseline environment

### 19.4.1 Desktop study

19.4.1.1 Information on the historic environment within the Mona historic environment study area was collected through a detailed desktop review of existing studies and datasets. These are summarised at Table 19.5 below. The full desktop study is presented as volume 7, annex 19.1: Historic environment desk based assessment of the PEIR.

**Table 19.5: 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

### 19.4.2 Site specific surveys

19.4.2.1 In order to inform the PEIR, site-specific surveys were undertaken, as agreed with the appropriate stakeholders (see Table 19.4 for further details). A summary of the surveys undertaken to inform the historic environment impact assessment is outlined in Table 19.6 below.

**Table 19.6: Summary of site-specific survey data.**

Title	Extent of survey	Overview of survey	Survey contractor	Date	Reference to further information
Historic environment geophysical survey	Mona Proposed Onshore Development Area	<p>Historic environment geophysical survey to assess the potential for land within the Mona Proposed Onshore Development Area to contain archaeological sites and features.</p> <p>The survey is ongoing and a preliminary report has been produced showing results from survey work undertaken up to January 2023. The survey to date has identified a small number of features of potential archaeological interest at several locations within the Mona Proposed 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, although further data processing and fieldwork may be required in order to confirm this.</p>	Magnitude Surveys	2022/2023	Volume 7, annex 19.3: Preliminary Historic environment Geophysical Survey Report
Historic environment intertidal survey	Intertidal area of Mona Proposed Onshore Development Area	<p>Intertidal survey to assess the historic environment within the intertidal area of the Mona Onshore Cable Corridor, 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 Cable Corridor.</p>	Oxford Archaeology	2022	Volume 7, annex 19.4: Historic environment Intertidal Survey Report

### 19.4.3 Baseline environment

19.4.3.1 This section of the Mona historic environment PEIR chapter presents a brief summary of the baseline historic environment for the area within the Mona Proposed Onshore Development Area and within the Mona historic environment study area. More detailed information on the baseline historic environment within the Mona historic environment study area is presented within volume 7, annex 19.1: Historic environment desk based assessment of the PEIR. 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 Mona historic environment PEIR chapter. The locations of designated historic assets within the Mona historic environment study area are indicated on Figures 19.2 – 19.5, although for legibility the unique Site Numbers allocated to Grade II listed buildings are not shown on these figures.

19.4.3.2 There are just two designated historic assets located within the Mona Proposed 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 Proposed 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 Proposed 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.

19.4.3.3 There are also two designated historic assets located just outside the Mona Proposed Onshore Development Area but essentially encircled by this area. One of these is the Grade II\* Listed house known as Plas Newydd (Site 21). This is an Elizabethan (16th century) storeyed gentry house south east of Glascoed, and cable route options pass both to the north and south of this house. The second one is a Grade II Listed Building known as Pentre Meredydd which is located approximately 1.12km east of Plas Newydd. This is a long single storey sub-medieval hall house with a steeply pitched thatched roof currently covered with corrugated iron sheeting. Cable route options pass both to the north and south of this house, and the Onshore Substation option 2 site is located to the east of here.

19.4.3.4 Within the Mona historic environment study area there are numerous other designated historic assets, some of which are directly adjacent or very close to the Mona Proposed Onshore Development Area. A list of designated historic assets within the Mona historic environment study area is presented below in in Figure 19.1. Where relevant the Cadw Reference Number is also provided as part of the designation information.

19.4.3.5 Grade II Listed Buildings are not included within Table 19.7 for reasons of brevity. However, tables identifying the Grade II Listed Buildings within the historic environment study area are presented as Appendices C-E of volume 7, annex 19.1: Historic environment desk based assessment of the PEIR.

**Table 19.7: Designated historic assets within the Mona 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 (PGW(C)2(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 crenellated 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-isa'r-Glascoed Farmhouse with garden wall and gate	Grade II* Listed Building (1385)
19	Bodelwyddan Castle	Grade II* Listed Building (1383)
20	Bodelwyddan Castle Ice House	Grade II* Listed Building (1384)
21	Plas Newydd	Grade II* Listed Building (153)
22	Abergele Conservation Area	Conservation Area
23	Bodelwyddan Conservation Area	Conservation Area
24	St. Asaph Conservation Area	Conservation Area
26	Bedd-y-Cawr hillfort	Scheduled Monument (SM DE037)
29	Lower Elwy Valley	Registered Landscape of Special Historic Interest

Site No.	Name	Designation
32	Church of St Cynbryd	Grade II* Listed Building (19024)
33	Church of St Michael	Grade II* Listed Building (237)
38	Faerdre	Grade II* Listed Building (150)
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)
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 (PGW(C)28(DEN))
232	St Beuno's College Park and Garden	Grade II Registered Historic Park and Garden (PGW(C)35(DEN))
233	Brynbella Park and Garden	Grade II Registered Historic Park and Garden (PGW(C)23(DEN))
234	Tremeirchion Conservation Area	Conservation Area
235	Plas-is-Illan	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	Gwernigrion Dovecote	Grade II* Listed Building (1382)

19.4.3.6 The Mona Proposed 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 probably 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.

19.4.3.7 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 1.5km south of the Mona Proposed 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 19.4: Intertidal survey of the PEIR).

19.4.3.8 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 19.7 (Sites 2 and 3) along with possible enclosures and field systems that could date to this period.

19.4.3.9 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* (Caernarvon) passes through the Mona historic environment study area, primarily along the line of Glascoed Road. The presence of a Roman fort at St Asaph has been postulated, potentially the documented site known as *Varae*.

19.4.3.10 St Asaph and Rhuddlan were the main centres of activity within the Mona 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.

19.4.3.11 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.

19.4.3.12 The Mona Proposed Onshore Development Area does not contain any designated historic landscape elements. However, there are numerous historic field boundaries present and these are indicated on Figure 6 of volume 7, annex 19.1: Historic environment desk based assessment of the PEIR.

19.4.3.13 A programme of archaeological geophysical survey has been initiated within the Mona Proposed Onshore Development Area. The survey programme is ongoing and will examine all land within the Mona Proposed Onshore Development Area which is suitable for survey and within which access for the survey can be obtained.

19.4.3.14 The results of the survey work completed by the end of 2022 are presented in volume 7, annex 19.3: Historic environment preliminary geophysical survey report of the PEIR. This shows that geophysical anomalies of potential archaeological interest have been identified at several locations within the Mona Proposed Onshore Development Area. These include possible linear features and trackways as well as enclosures and ring-ditches (which may represent the remains of prehistoric burial monuments). No potential archaeological sites of clear national importance have been identified so far.

19.4.3.15 A survey has also been undertaken within the intertidal part of the Mona Proposed Onshore Development Area, and the results of this work are presented within volume 7, annex 19.4: Historic environment intertidal survey report of the PEIR. The survey was initially undertaken with an Unmanned Aerial Vehicle (UAV) followed by a

walkover using parallel transects with 50m 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.

#### 19.4.4 Future baseline scenario

- 19.4.4.1 The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires 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 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.
- 19.4.4.2 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.
- 19.4.4.3 Other changes could occur as a result of further information being discovered regarding archaeological sites, possibly through programmes of intrusive or non-intrusive fieldwork. As described above, a programme of geophysical survey is ongoing within the Mona Proposed Onshore Development Area. Once this has been completed, further investigation of the archaeological potential of land within the Mona Proposed Onshore Development Area is planned to take place ahead of the production of the Environmental Statement that would be submitted in support of the application for development consent for the Mona Offshore Wind Project. The results of any such investigations would be incorporated into the historic environment baseline reported within the Environmental Statement.
- 19.4.4.4 No changes in statutory legislation on historic environment issues are currently anticipated. Additional guidance may be issued by national statutory advisors or others, including guidance on the assessment process.
- 19.4.4.5 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.

#### 19.4.5 Data limitations

- 19.4.5.1 All readily available data required for the assessment have been acquired, collated and critically examined.
- 19.4.5.2 One key limitation is with regard to the presence, absence, extent, nature and significance of buried archaeological remains within the Mona Proposed 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. Some of this work is ongoing, but no site-specific intrusive surveys have yet been undertaken.

- 19.4.5.3 Further investigation of land within the Mona Proposed Onshore Development Area to determine its archaeological potential is planned to take place ahead of the production of the Environmental Statement. The results of these investigations will be submitted in support of the application for development consent for the Mona Offshore Wind Project. The nature and extent of any investigation will depend on the current understanding of the archaeological potential of the specific area along with the proposed activities required for the construction of the Mona Offshore Wind Project. All investigations would be carried out in accordance with written methodologies agreed in advance with appropriate stakeholders including the archaeological advisors to the local planning authorities.
- 19.4.5.4 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.



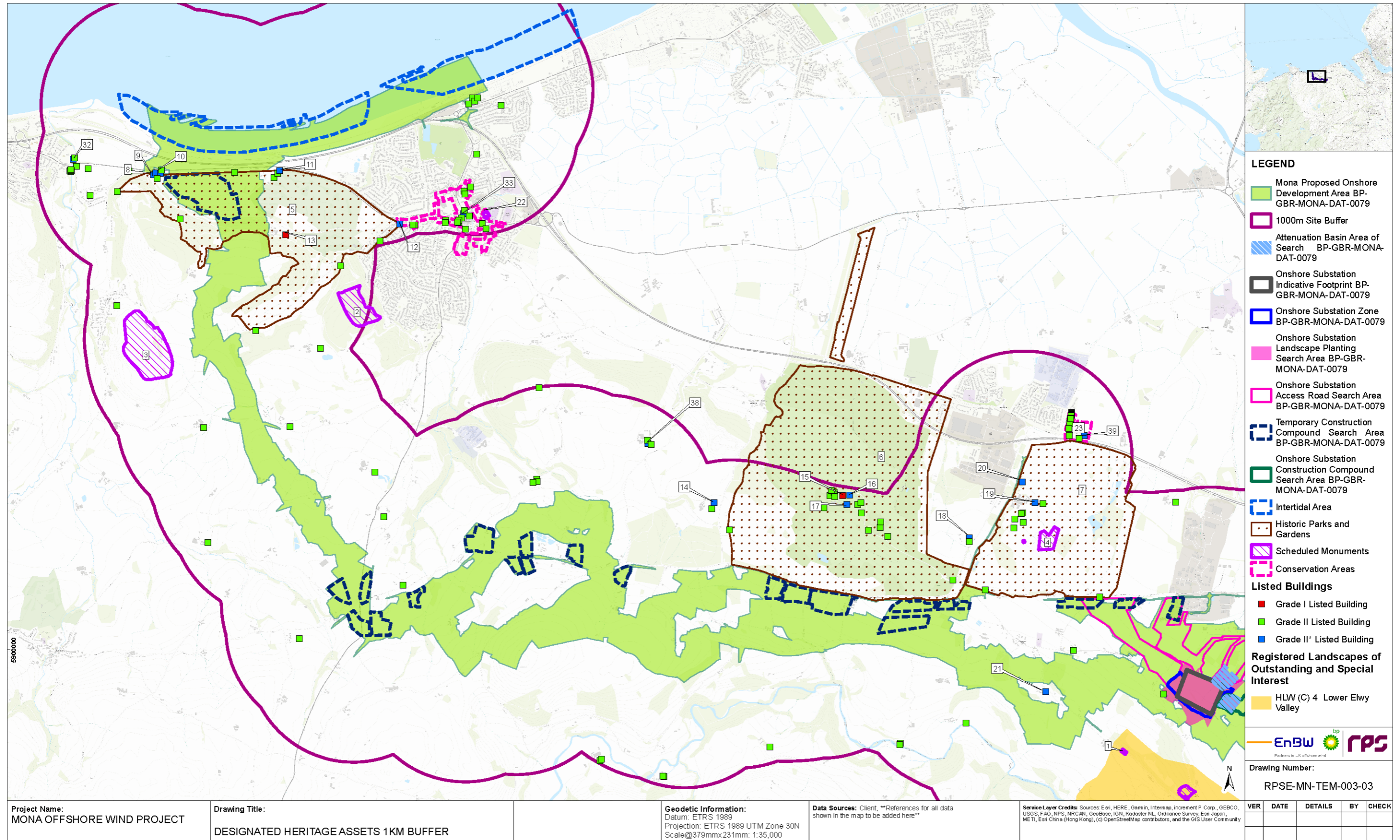


Figure 19.2: Designated heritage assets within the 1km buffer (sheet 1)

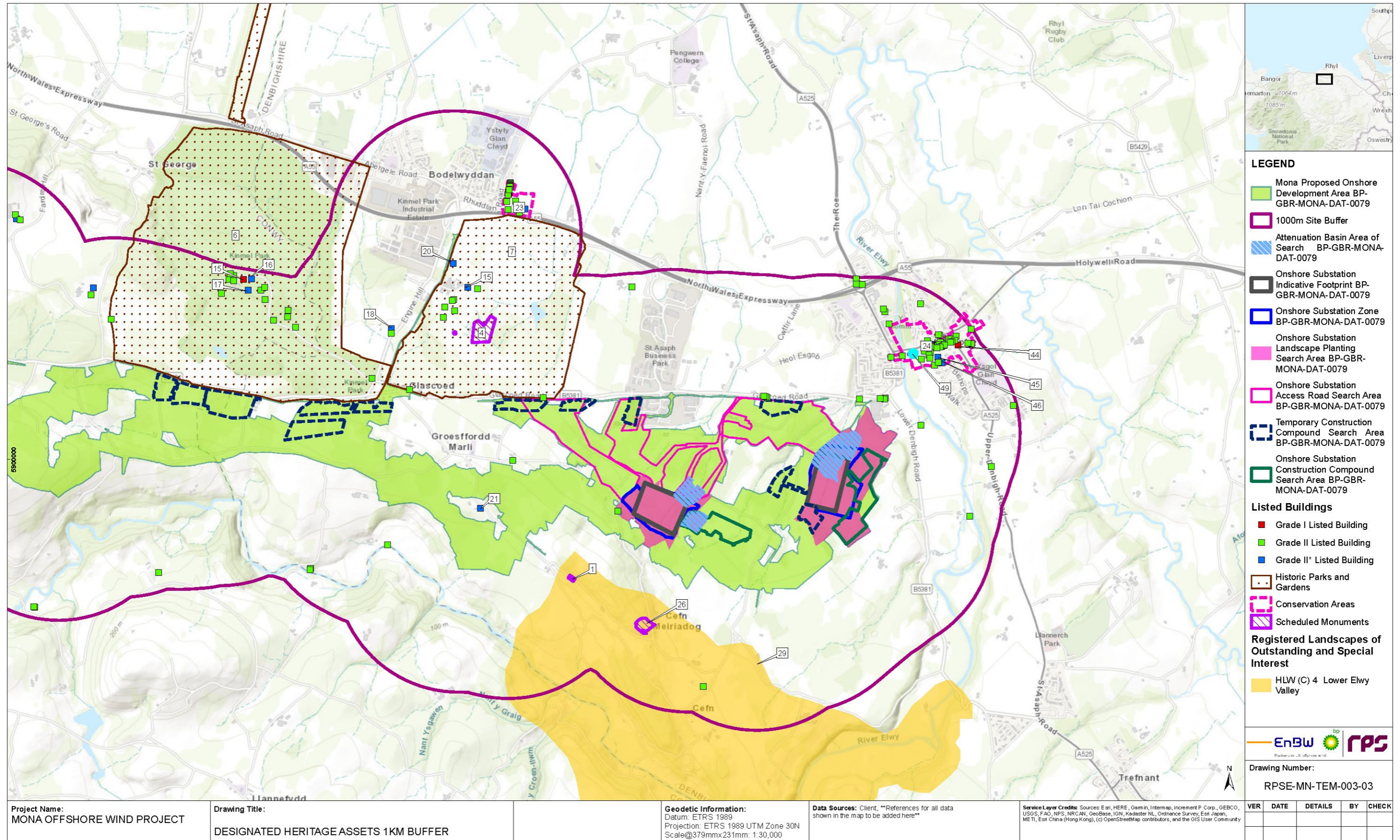


Figure 19.3: Designated heritage assets within 1km buffer (sheet 2)

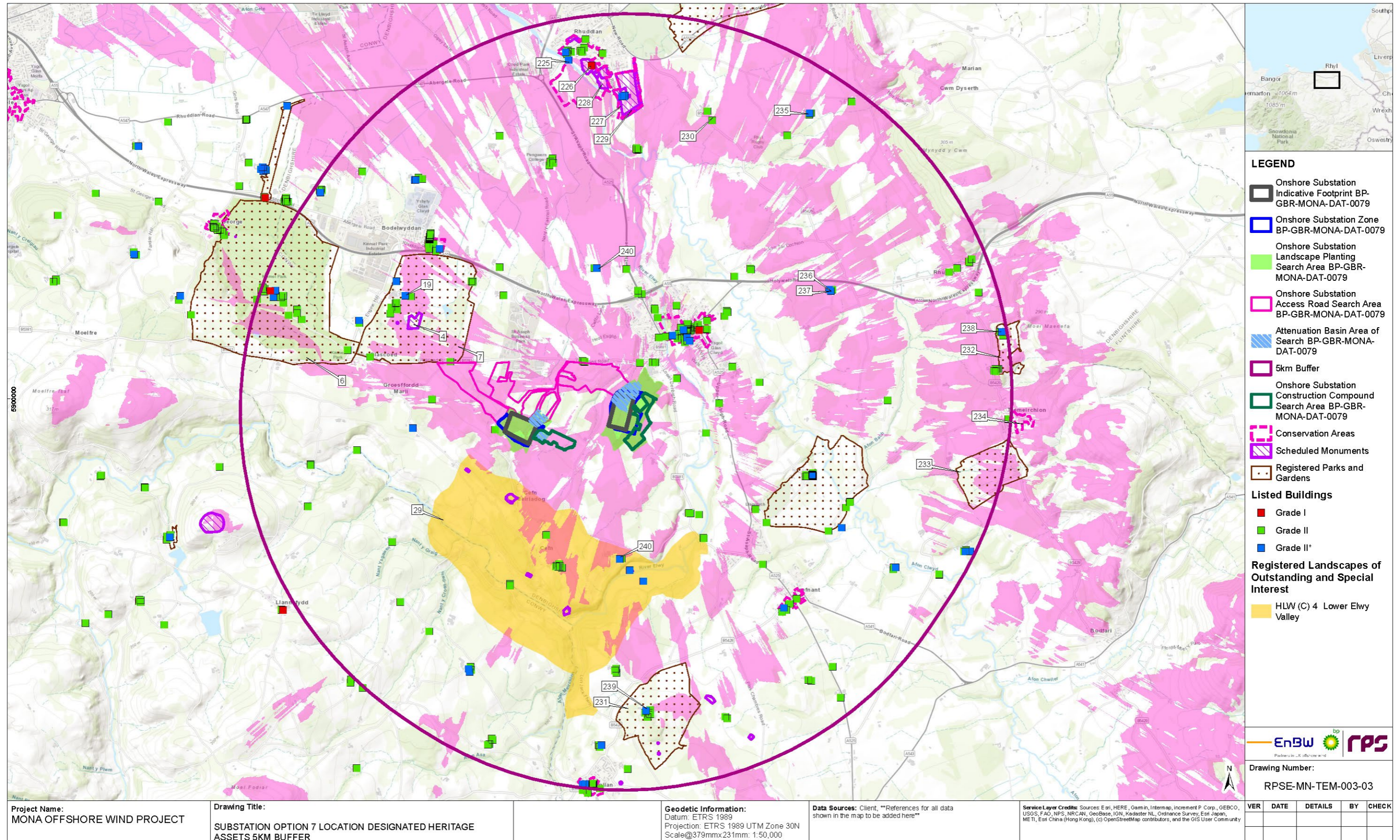


Figure 19.4: Designated heritage assets within 5km buffer of Onshore Substation option 7

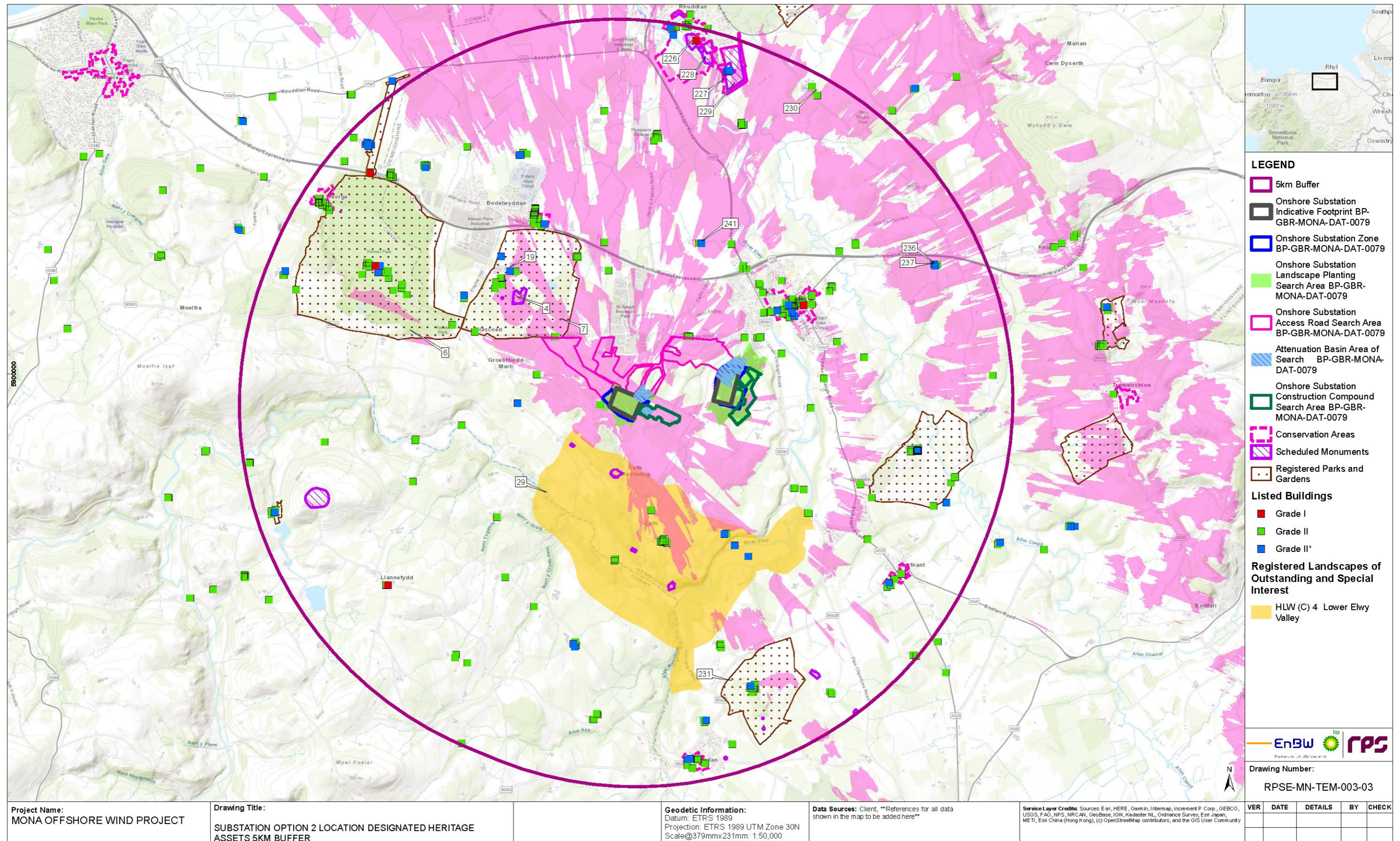


Figure 19.5: Designated heritage assets within 5km buffer of Onshore Substation option 2

## 19.5 Impact assessment methodology

### 19.5.1 Overview

19.5.1.1 The historic environment impact assessment has followed the methodology set out in volume 1, chapter 5: EIA methodology of the PEIR. 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).

19.5.1.2 In addition, the historic environment impact assessment has considered the legislative framework as defined by:

- The Ancient Monuments and Archaeological Areas Act (1979)
- The Planning (Listed Buildings and Conservation Areas) Act (1990)
- The Infrastructure Planning (Decisions) Regulations (2010)
- The Historic Environment (Wales) Act 2016.

### 19.5.2 Impact assessment criteria

19.5.2.1 The criteria for determining the significance of effects 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: EIA methodology of the PEIR.

19.5.2.2 The criteria for defining magnitude in this chapter are outlined in Table 19.8 below.

**Table 19.8: 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).

Magnitude of impact	Definition
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.

19.5.2.3 The criteria for defining sensitivity in this chapter are outlined in Table 19.9 below.

**Table 19.9: Definition of terms relating to the sensitivity of the receptor.**

Sensitivity/value	Definition
Very High	Historic assets of international importance.
	World Heritage Sites and the individual attributes that convey their Outstanding Universal Value.
	Areas associated with intangible heritage and areas with associations with particular innovations, scientific developments, movements or individuals of global importance. Assets that can contribute significantly to acknowledged international research objectives.
High	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.
	Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association not adequately reflected in the listing grade.
	Unscheduled sites and monuments of schedulable quality and/or importance including those discovered through the course of evaluation or mitigation.
	Archaeological assets that can contribute significantly to acknowledged national research objectives.
	Conservation Areas containing very important buildings.
	Undesignated structures of clear national importance.
Medium	Palaeogeographic features with a demonstrable high potential to include artefactual and/or palaeoenvironmental material, possibly as part of a prehistoric site or landscape.
	Undesignated sites of wrecked ships and aircraft that are demonstrably of equivalent archaeological importance to those already designated.

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

19.5.2.5 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 19.10: 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

## 19.6 Key parameters for assessment

### 19.6.1 Maximum design scenario

19.6.1.1 The maximum design scenarios (MDS) identified in Table 19.11 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 PEIR. 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.

19.5.2.4 The significance of the 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 19.10. Where a range of significance of effect is presented in Table 19.10, the final assessment for each effect is based upon expert judgement.

**Table 19.11: Maximum design scenario considered for the assessment of potential impacts on the historic environment.**

<sup>a</sup> C=construction, O=operation and maintenance, D=decommissioning

Potential impact	Phase <sup>a</sup>			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><b>Construction phase</b></p> <p><u>Open trenching in the intertidal area between MLWS and MHWS:</u></p> <ul style="list-style-type: none"> <li>The area required for the trenches is 18,000m<sup>2</sup> based on four trenches each measuring 3m wide and 1.5km long.</li> <li>A total of 54,000m<sup>3</sup> of material will be excavated from the trenches based on the area and the 3m depth required for the trenches).</li> <li>The working area required to undertake the open trenching is 25m wide and will extend along the 1.5km length. The working area is provided on both sides of the trench and results in a total working area of 318,000m<sup>2</sup>.</li> </ul> <p><u>Open cut trenching along the Mona Onshore Cable Corridor:</u></p> <ul style="list-style-type: none"> <li>The area of the permanent Onshore Cable Corridor is 540,000m<sup>2</sup> based on a corridor measuring 30m wide and 18km in length. The temporary working corridor requires an additional 70m wide corridor (making the total width of the Onshore Cable Corridor (temporary and permanent requirements) 100m wide representing an area up to 1,800,000m<sup>2</sup>.</li> <li>There are four cable trenches within the permanent onshore cable route, each trench measures 2.5m wide at the top and 1.5m wide at the base, and the depth is 1.8m.</li> <li>The depth of stabilised backfill in each of the four onshore cable trenches is 0.6m.</li> <li>The maximum number of joint bays along the onshore cable route is 96.</li> <li>The maximum number of link boxes along the onshore cable route is 96.</li> <li>There is one haul road within the onshore cable route corridor; it is 6m 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 400mm and a maximum thickness of up to 1,000mm.</li> <li>The maximum number of Horizontal Directional Drilling (HDD) locations along the Onshore Cable Corridor is 72. Primary HDD operations will require a compound, these will measure up to 150m x 100m. Secondary HDDs will require a smaller compound (measuring up to 30m x 20m) and will be located within the 100m temporary construction corridor</li> <li>Up to two primary construction compounds (each measuring 150m x 150m) and up to 10 secondary construction compounds (each measuring 150m x 100m) will be located along the Onshore Cable Corridor. The compounds will</li> </ul>	<p>The use of open cut trenching in the Mona Landfall area represents the greatest area of disturbance and, therefore, the greatest potential for impacts on buried archaeological remains and deposits of geoarchaeological and palaeoenvironmental interest.</p> <p>The greatest length and width of the Mona 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> <p>The greatest number of cable trenches, link boxes and joint bays along the Mona 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 Mona 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</p>

Potential impact	Phase <sup>a</sup>			Maximum Design Scenario	Justification
	C	O	D		
Loss of or harm to above ground historic assets.	✓	✗	✓	<p>be located within the Mona Proposed 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> <p><u>Mona Onshore Substation:</u></p> <ul style="list-style-type: none"> <li>The maximum permanent footprint of the Onshore Substation is 125,000m<sup>2</sup> and will be located within the Onshore Substation zone: this area will include the substation buildings and the earthworks to create the platform.</li> <li>The temporary working area of the Onshore Substation is up to 250,000m<sup>2</sup>.</li> <li>Access to the substation will be via a new permanent access road measuring up to 8m wide and 1.2km in length.</li> </ul> <p><u>Open cut trenching along the Mona 400kV Grid Connection Cable:</u></p> <ul style="list-style-type: none"> <li>The area of the permanent onshore corridor is 48,000m<sup>2</sup> based on a corridor measuring 16m wide and 3km in length. The temporary working corridor requires an additional 44m wide corridor (making the total width of the route to grid connection (temporary and permanent requirements) 60m wide. representing an area of up to 180,000m<sup>2</sup>.</li> <li>There are up to two cable trenches, each trench measures 2.5m wide at the top and 1.5m wide at the base, and the depth is 1.8m.</li> <li>The depth of stabilised backfill in each of the four cable trenches is 0.6m.</li> <li>The maximum number of joint bays along the Grid Connection Cable Corridor is 10.</li> <li>The maximum number of link boxes along the Grid Connection Cable Corridor is 10.</li> <li>There is one haul road within the onshore cable route corridor; it is 6m 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 400mm and a maximum thickness of up to 1,000mm.</li> <li>The maximum number of HDD locations along the Grid connection cable route is 12. Primary HDD operations will require a compound, these will measure up to 150m x 100m. Secondary HDDs will require a smaller compound (measuring up to 30m x 20m) and will be located within the 100m temporary construction corridor.</li> </ul> <p><b>Decommissioning phase</b></p> <p>The Onshore Cable and 400kV Grid Connection Cable will remain in situ but the link boxes will be removed. The Onshore Substation and access road will be removed.</p>	<p>on 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 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>
The impact of construction and decommissioning of the onshore transmission assets on above ground historic assets as a result of change within their setting.	✓	✗	✓	<p><b>Construction phase</b></p> <ul style="list-style-type: none"> <li>The duration of the Onshore Cable Corridor and Grid Connection Cable Corridor construction is up to 33 months.</li> <li>The duration of the Onshore Substation construction is up to 33 months; testing and commissioning is up to 10 months</li> <li>The maximum permanent footprint of the Onshore Substation is 125,000m<sup>2</sup> and will be located within the Onshore Substation zone.</li> <li>The maximum number of buildings is four within an indicative footprint of 105,000m<sup>2</sup> within the 125,000m<sup>2</sup>.</li> </ul>	<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>



Potential impact	Phase <sup>a</sup>			Maximum Design Scenario	Justification
	C	O	D		
				<ul style="list-style-type: none"> <li>Maximum building height is 20m.</li> <li>Maximum building length is 140m.</li> <li>Maximum building width is 80m.</li> <li>Maximum height of the lightning protection is 30m.</li> </ul> <p><b>Decommissioning phase</b> The Onshore Cable and Mona 400kV Grid Connection Cable will remain in situ but the link boxes will be removed. The Onshore Substation and access road will be removed.</p>	
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	<p><b>Operations and maintenance phase</b></p> <ul style="list-style-type: none"> <li>The maximum permanent footprint of the Onshore Substation is 125,000m<sup>2</sup> and will be located within the Onshore Substation zone.</li> <li>The maximum number of buildings is four within an indicative footprint of 105,000m<sup>2</sup> within the 125,000m<sup>2</sup>.</li> <li>Maximum building height is 20m.</li> <li>Maximum building length is 140m.</li> <li>Maximum building width is 80m.</li> <li>Maximum height of the lightning protection is 30m.</li> </ul>	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.
The impact of construction and decommissioning of the onshore transmission assets on the character of the historic landscape.	✓	x	✓	<p><b>Construction phase</b></p> <ul style="list-style-type: none"> <li>The duration of the Onshore Cable Corridor and Mona 400kV Grid Connection Cable construction and installation is up to 33 months.</li> <li>The duration of the Onshore Substation construction is up to 33 months and installation is up to 10 months.</li> </ul> <p><b>Decommissioning phase</b> Decommissioning would be undertaken in the reverse of construction using similar plant and techniques, although some cable infrastructure is likely to remain in place therefore decommissioning activities will be less extensive.</p>	The longest duration of the construction phase represents the greatest potential temporary impacts on the character of the historic landscape.
The impact of operation and maintenance of the onshore substation on the character of the historic landscape.	x	✓	x	<p><b>Operation and maintenance phase</b></p> <ul style="list-style-type: none"> <li>The permanent footprint of the Onshore Substation is 125,000m<sup>2</sup>.</li> <li>Maximum number of buildings is four.</li> <li>Maximum building height is 20m.</li> <li>Maximum building length is 140m.</li> <li>Maximum building width is 80m.</li> <li>Maximum height of the lightning protection is 30m.</li> </ul>	The largest footprint and greatest number of buildings at the onshore substation represents the greatest potential impact on the character of the historic landscape.

## 19.6.2 Impacts scoped out of the assessment

19.6.2.1 On the basis of the baseline environment and the description of development outlined in volume 1, chapter 3: Project description of the PEIR, a number of impacts are proposed to be scoped out of the assessment for the historic environment. These impacts are outlined, together with a justification for scoping them out, in Table 19.12.

**Table 19.12: Impacts scoped out of the assessment for the historic environment.**

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

## 19.7 Measures adopted as part of the Mona Offshore Wind Project

19.7.1.1 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).

19.7.1.2 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 19.13 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 19.8 below (i.e. the determination of magnitude and therefore significance assumes implementation of these measures).

19.7.1.3 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 (see Thomas, 2019). The same logic applies to the recording of historic buildings ahead of demolition.

**Table 19.13: 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
<b>Primary measures: Measures included as part of the project design</b>		
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.	Committed with the project design (see volume 1, chapter 3: Project description of the PEIR).
The construction design includes the use of HDD 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	Committed with the project design (see volume 1, chapter 3: Project description of the PEIR).
<b>Tertiary measures: Measures required to meet legislative requirements, or adopted standard industry practice</b>		
The ongoing programme of geophysical survey will be completed and a follow-up programme of archaeological trial trenching will be implemented.	To reduce potential impacts on buried archaeological assets.	Undertaken ahead of DCO submission, with results used in the assessment presented within the ES.
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.
A Construction Noise Management Plan will be prepared as part of the Code of Construction Practice (CoCP). It will include 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 CoCP as a requirement of the DCO.

Measures adopted as part of the Mona Offshore Wind Project	Justification	How the measure will be secured
Areas of landscape planting and a landscape scheme for the Onshore Substation will be identified in the Hydrological, Ecological and Landscape Management Plan.	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 CoCP as a requirement of the DCO.
An Operational Noise Management Plan will be prepared. The Plan will identify the noise limits for the operation of the Mona Onshore Substation and the measures for how these limits would be monitored.	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 as a requirement of the DCO.

## 19.8 Assessment of significant effects

- 19.8.1.1 The effects of the construction, operation 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, operation and maintenance and decommissioning phases of the Mona Offshore Wind Project are listed in Table 19.11, along with the MDS against which each impact has been assessed.
- 19.8.1.2 A description of the potential effect on historic environment receptors caused by each identified impact is given below.

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

#### Construction phase

- 19.8.2.1 The construction of the Mona Landfall, the Onshore Cable Corridor, Mona 400kV Grid Connection Cable 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 19.11 and includes open cut trenching in the intertidal area, Onshore Cable Corridor up to 18km long and 100m wide, Mona 400kV Grid Connection Cable up to 3km long and 60m wide, and an Onshore Substation construction footprint measuring up to 125,000m<sup>2</sup>.
- 19.8.2.2 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 HDD is required.

#### Magnitude of impact

- 19.8.2.3 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.

19.8.2.4 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.

19.8.2.5 There is potential for buried archaeological remains to be present in all parts of the Mona Proposed Onshore Development Area, and potential for deposits of geoarchaeological and palaeoenvironmental interest to be present within the intertidal area. The ongoing programme of archaeological surveys is aimed at identifying such remains wherever possible. The location, extent and nature of the identified buried archaeological remains will then be taken into account within the final selection of the Onshore Cable Corridor, Mona 400kV Grid Connection Cable and the Onshore Substation.

19.8.2.6 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.

19.8.2.7 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 **low**.

#### Sensitivity of the receptor

19.8.2.8 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 Proposed Onshore Development Area. If features or deposits of national importance are identified within the Mona Proposed Onshore Development Area as a result of the ongoing programme of archaeological surveys then the scheme design will 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 when surveys are yet to be completed the sensitivity of the receptor is therefore considered to be **unknown**.

#### Significance of the effect

19.8.2.9 Overall, the magnitude of the impact is deemed to be up to low and the sensitivity of the receptor is considered to be unknown. The predicted effect is currently, therefore, of **unknown** significance. As discussed above, this level of uncertainty will be addressed through the further surveys that will be reported on in the ES.

#### Further mitigation and residual effect

19.8.2.10 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.

### 19.8.3 Loss of, or harm to, above ground historic assets

19.8.3.1 There is one location (Gwrych Castle) where a Registered Park and Garden of Special Historic Interest (Site 6) and a Grade II Listed boundary wall (of the park and garden) are within the Mona Proposed Onshore Development Area. For the purposes of this assessment, Registered Parks and Gardens of Special Historic Interest are considered as above ground historic assets, although they also represent components of the overall historic landscape. The MDS is summarised in Table 19.11.

#### Construction phase

##### Magnitude of impact

19.8.3.2 The Mona Onshore Cable Corridor will need to pass through the Registered Park and Garden of Special Historic Interest. 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 tree belts. The Grade II Listed boundary wall is directly adjacent to the A547 road. Direct physical impacts on this designated asset are very unlikely, as the cable installation at this location will be in the form of HDD beneath the A457 road as well as the adjacent A55 road and the North Wales Mainline railway.

19.8.3.3 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

19.8.3.4 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

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

##### Further mitigation and residual effect

19.8.3.6 Where direct impacts on above ground historic assets cannot be avoided through scheme design, programmes of further research and 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.

#### Decommissioning phase

##### Magnitude of impact

19.8.3.7 The design of the methodology for decommissioning of the Mona Onshore Cable Corridor within the Registered Park and Garden of Special Historic Interest here 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.

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

##### Sensitivity of the receptor

19.8.3.9 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

19.8.3.10 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.

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

19.8.4.1 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 19.11.

#### Construction phase

##### Magnitude of impact

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

19.8.4.3 The setting of a historic asset makes a contribution to its significance and this will need to be assessed on an asset by asset basis as the Mona Offshore Wind Project design progresses. The asset by asset assessment will be presented within the ES. Where possible the Mona Offshore Wind Project design will seek to avoid or minimise harmful changes within the settings of designated historic assets.

19.8.4.4 The impact in all cases is predicted to be of up to local spatial extent, short term duration, and reversible. The magnitude is therefore, considered to be **negligible**.

##### Sensitivity of the receptor

19.8.4.5 Designated historic assets within the Mona 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 the effect

19.8.4.6 Overall, the magnitude of the 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.

### Decommissioning phase

19.8.4.7 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 19.11.

#### Magnitude of impact

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

19.8.4.9 Where possible the decommissioning design will seek to avoid or minimise harmful changes within the settings of designated historic assets.

19.8.4.10 The impact in all cases is predicted to be of up to local spatial extent, short term duration, and reversible. The magnitude is therefore, considered to be **negligible**.

#### Sensitivity of the receptor

19.8.4.11 Designated historic assets within the Mona 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 the effect

19.8.4.12 Overall, the magnitude of the 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.

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

19.8.5.1 Construction activities could change the character of the historic landscape within the Mona 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. The MDS is summarised in Table 19.11.

### Construction phase

#### Magnitude of impact

19.8.5.2 Impacts on the character of the historic landscape during construction would be direct (physical) and indirect (non physical) and short term. The scheme design would look 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.

19.8.5.3 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 and indirectly. The magnitude is therefore, considered to be **low**.

#### Sensitivity of the receptor

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

#### Significance of the effect

19.8.5.5 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 in almost all cases would be fully reversible.

### Decommissioning phases

19.8.5.6 Decommissioning activities would change the character of the historic landscape within the Mona 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 19.11.

#### Magnitude of impact

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

19.8.5.8 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

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

#### Significance of the effect

19.8.5.10 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.

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

### Operations and maintenance

19.8.6.1 The Mona Onshore Substation is likely to be 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 19.11.

### Magnitude of impact

19.8.6.2 Impacts on designated historic assets as a result of change within their settings during operation and maintenance would be indirect (non physical) and long term, but potentially fully reversible. The magnitude of impact would depend largely on the level of intervisibility between the designated asset and the Onshore Substation along with the contribution that the setting of the asset makes to its significance, although it may be necessary to also assess the potential changes to the noise environment.

19.8.6.3 The locations of designated heritage assets in relation to the Mona Onshore Substation options 7 and 2 are indicated on Figures 1.4 and 1.5 (respectively) in volume 7, annex 19.1: Historic environment desk based assessment of the PEIR. These figures also show the Zone of Theoretical Visibility (ZTV) which has been prepared for each option. Both options would potentially have some level of intervisibility with a number of designated historic assets, each of which may need to be individually assessed with regard to their setting once a preferred option for the Mona Onshore Substation has been selected. The asset by asset assessment will be presented within the Environmental Statement. The closest designated historic asset to either option is a Grade II Listed Building to the west of option 2.

19.8.6.4 Following the selection of a preferred option for the Mona Onshore Substation, more detailed design would be undertaken with regard to the location of the substation within the option site and the landscaping that would be established in the vicinity of the substation in order to reduce visual impacts. Both of these elements of the Mona Offshore Wind Project design would include consideration of the need to avoid or reduce impacts on designated historic assets arising from changes within their settings.

19.8.6.5 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. The magnitude is therefore, considered to be **negligible**.

### Sensitivity of the receptor

19.8.6.6 Designated historic assets within the Mona historic environment study area established for the Mona Onshore Substation options and with the ZTV include many examples which are of national importance. The sensitivity of the receptor is therefore considered to be up to **high**.

### Significance of the effect

19.8.6.7 Overall, the magnitude of the 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. The effect would be long-term and reversible.

## 19.8.7 The impact of operation and maintenance of the Mona Onshore Substation on the character of the historic landscape

### Operations and maintenance

19.8.7.1 The operation and maintenance of the Mona Onshore Substation would change the character of the historic landscape within that part of Mona 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 19.11.

### Magnitude of impact

19.8.7.2 Impacts on the character of the historic landscape during operation and maintenance of the Mona Onshore Substation construction would be indirect and long-term. Following the selection of a preferred option for the Mona Onshore Substation, more detailed design would be undertaken with regard to the location of the substation within the option site and also the landscaping that would be established in the vicinity of the substation in order to reduce visual impacts. Both of these elements of scheme design would include consideration of the need to avoid or reduce impacts on the character of the historic landscape.

19.8.7.3 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

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

### Significance of the effect

19.8.7.5 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.

## 19.9 Cumulative effect assessment methodology

### 19.9.1 Methodology

19.9.1.1 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: CEA screening matrix of the PEIR). 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.

19.9.1.2 The historic environment CEA methodology has followed the methodology set out in volume 1, chapter 5: EIA methodology of the PEIR. 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.

19.9.1.3 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.

19.9.1.4 This tiered approach is adopted to provide a clear assessment of the Mona Offshore Wind Project alongside other projects, plans and activities.

19.9.1.5 The specific projects, plans and activities scoped into the CEA, are outlined in Table 19.14. The locations of such projects, plans and activities are indicated on Figure 19.6.

19.9.1.6 National Grid Electricity Transmission (NGET) are proposing to undertake upgrades to their Bodelwyddan substation; to facilitate the connection of multiple projects (e.g. Awel Y Mor). The upgrades will comprise works to the existing substation, an extension to the substation and associated works and infrastructure (e.g. new overhead gantries).

19.9.1.7 It is understood that works to the existing substation will be undertaken via NGET's permitted development rights. The proposed extension to Bodelwyddan National Grid Substation will require planning consent. At the time of writing, an application had not been submitted to Denbighshire County Council but the anticipated timeframe is early 2024. Given that an application has not been submitted, the potential cumulative impacts of the Bodelwyddan upgrade have not been assessed within the PEIR. This will be re-visited in the application for consent for the Mona Offshore Wind Project should further information become available

**Table 19.14: List of other projects, plans and activities considered within the CEA.**

Project/Plan	Status	Distance from the Mona array area (km)	Distance from the Mona offshore/onshore cable corridor (km)	Description of project/plan	Dates of construction (if applicable)	Dates of operation (if applicable)	Overlap with the Mona Offshore Wind Project
<b>Tier 1</b>							
Awel y Mor Offshore Wind Farm (onshore infrastructure)	Application submitted.	12.2	0.0	Onshore transmission assets (cable routes and onshore substation).	Construction to commence in 2026.	Site to be commissioned in 2030.	South end of cable route connecting through to the Bodelwyddan National Grid Substation has some overlap with the Mona Proposed Onshore Development Area.
<b>Tier 2</b>							
St Asaph Solar Farm	Screening direction provided by Planning and Environmental Decisions Wales (PEDW).	42.4	0.0	Solar farm (photovoltaic).			Proposal site comprises two separate block of land, both of which are within the west end of the Mona Proposed Onshore Development Area.



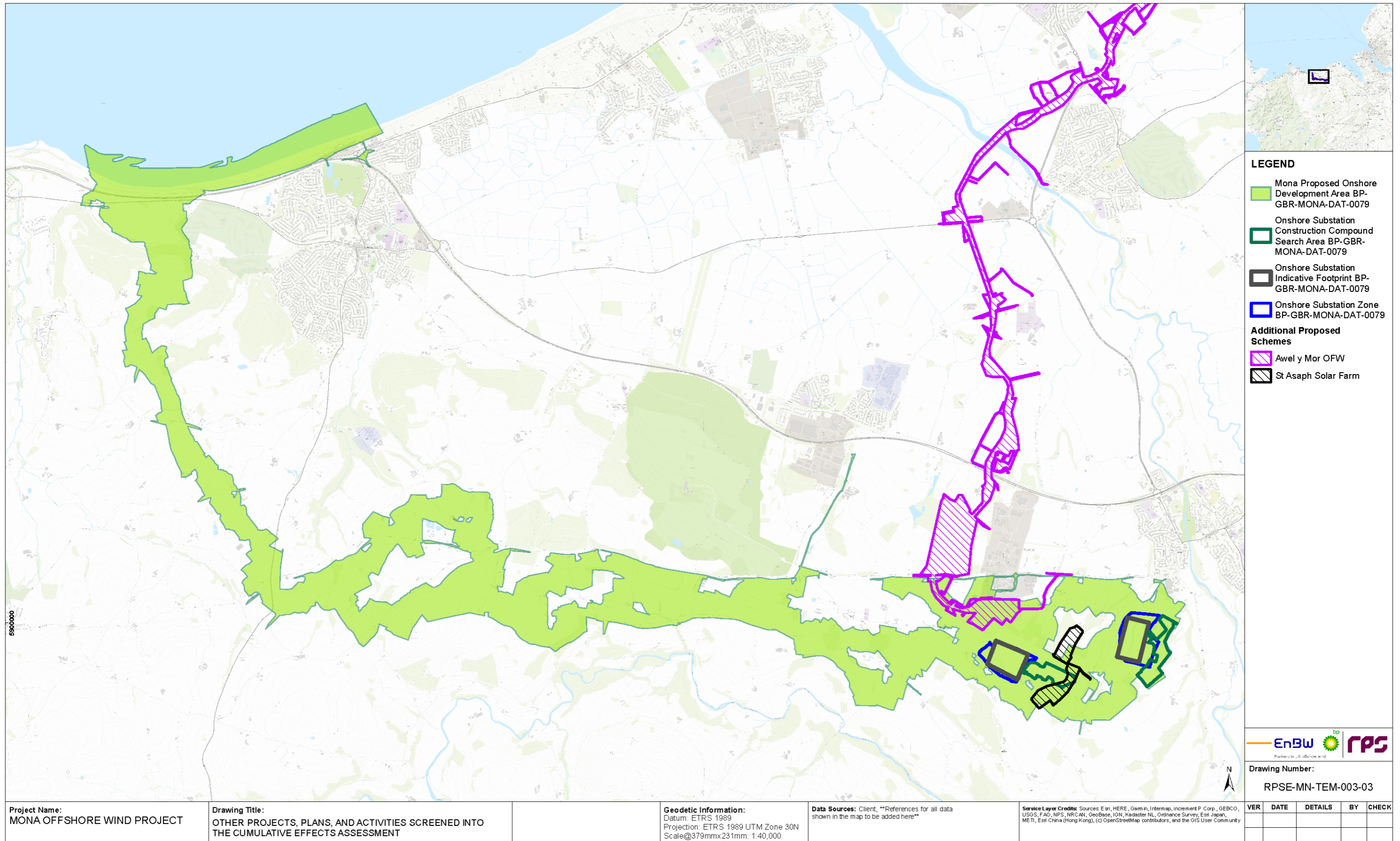


Figure 19.6: Other projects, plans and activities screened into the cumulative effects assessment.

## 19.9.2 Maximum design scenario

- 19.9.2.1 The maximum design scenarios (MDS) identified in Table 19.15 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 PEIR as well as the information available on other projects and plans, in order to inform a '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.

**Table 19.15: Maximum design scenario considered for the assessment of potential cumulative effects on the historic environment.**

<sup>a</sup> C=construction, O=operation and maintenance, D=decommissioning

Potential cumulative effect	Phase <sup>a</sup>			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 19.11) assessed cumulatively with the following other projects/plans: <b>Tier 1</b> <ul style="list-style-type: none"> <li>Awel y Mor Offshore Wind Farm (onshore infrastructure)</li> </ul> <b>Tier 2</b> <ul style="list-style-type: none"> <li>St Asaph Solar Farm</li> </ul>	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 19.11) assessed cumulatively with the following other projects/plans: <b>Tier 1</b> <ul style="list-style-type: none"> <li>Awel y Mor Offshore Wind Farm (onshore infrastructure)</li> </ul> <b>Tier 2</b> <ul style="list-style-type: none"> <li>St Asaph Solar Farm</li> </ul>	The other schemes may lead to additional changes within the setting of above ground historic assets.
The impact of operation 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 19.11) assessed cumulatively with the following other projects/plans: <b>Tier 1</b> <ul style="list-style-type: none"> <li>Awel y Mor Offshore Wind Farm (onshore infrastructure)</li> </ul> <b>Tier 2</b> <ul style="list-style-type: none"> <li>St Asaph Solar Farm</li> </ul>	The other schemes may lead to additional changes within the setting of above ground historic assets.
The impact of the onshore transmission assets on the character of the historic landscape.	✓	x	✓	MDS as described for the Mona Offshore Wind Project (Table 19.11) assessed cumulatively with the following other projects/plans: <b>Tier 1</b> <ul style="list-style-type: none"> <li>Awel y Mor Offshore Wind Farm (onshore infrastructure)</li> </ul> <b>Tier 2</b> <ul style="list-style-type: none"> <li>St Asaph Solar Farm</li> </ul>	The other schemes may lead to additional changes to the character of the historic landscape.
The impact of operation and maintenance of the onshore substation on the character of the historic landscape.	x	✓	x	MDS as described for the Mona Offshore Wind Project (Table 19.11) assessed cumulatively with the following other projects/plans: <b>Tier 1</b> <ul style="list-style-type: none"> <li>Awel y Mor Offshore Wind Farm (onshore infrastructure)</li> </ul> <b>Tier 2</b> <ul style="list-style-type: none"> <li>St Asaph Solar Farm</li> </ul>	The other schemes may lead to additional changes to the character of the historic landscape.

## 19.10 Cumulative effects assessment

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

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

19.10.2.1 Where land within the Mona Proposed 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.

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

19.10.3.1 With regard to the Mona Proposed Onshore Development Area, this impact would only occur at the very west end of the Mona 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.

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

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

#### Tier 1

#### **Construction phase**

#### **Magnitude of impact**

19.10.4.2 The changes within the setting of above ground heritage assets arising from the construction and operation 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 Proposed Onshore Development Area as this is where the Mona Onshore Substation would be visible in conjunction with the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

19.10.4.3 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. The magnitude of the cumulative impact is considered to be **negligible**.

#### **Sensitivity of the receptor**

19.10.4.4 Designated historic assets within the Mona 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**

19.10.4.5 Overall, the magnitude of the 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**

19.10.4.6 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 operation and maintenance of the Mona Onshore Transmission Assets. This would only occur at the east end of the Mona Proposed Onshore Development Area as this is where the Mona Onshore Substation would be visible in conjunction with the similar onshore facility required for the Awel y Mor Offshore Wind Farm.

19.10.4.7 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. The magnitude of the cumulative impact is considered to be **negligible**.

#### **Sensitivity of the receptor**

19.10.4.8 Designated historic assets within the Mona 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**

19.10.4.9 Overall, the magnitude of the 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 2

## Construction phase

### Magnitude of impact

- 19.10.4.10 The changes within the setting of above ground heritage assets arising from the construction and operation 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.
- 19.10.4.11 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. The magnitude of the cumulative impact is considered to be **negligible**.

### Sensitivity of the receptor

- 19.10.4.12 Designated historic assets within the Mona 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

- 19.10.4.13 Overall, the magnitude of the 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.

## Operation and maintenance phase

### Magnitude of impact

- 19.10.4.14 The changes within the setting of above ground heritage assets arising from the construction and operation and maintenance of the St Asaph solar farm would be considerably less than those arising from the operation and maintenance of the Mona Onshore Transmission Assets due to the nature of solar farm developments.
- 19.10.4.15 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. The magnitude of the cumulative impact is therefore, considered to be **negligible**.

### Sensitivity of the receptor

- 19.10.4.16 Designated historic assets within the Mona 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

- 19.10.4.17 Overall, the magnitude of the 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.

## 19.10.5 The impact of the onshore transmission assets on the character of the historic landscape

### Tier 1

## Construction phase

### Magnitude of impact

- 19.10.5.1 It is possible that the character of the historic landscape could experience change from the construction of the Mona Onshore Transmission Assets and also from the construction or operation and maintenance of other projects or plans included within the CEA.
- 19.10.5.2 The changes to the character of the historic landscape arising from the construction and operation 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 Proposed Onshore Development Area and would most likely happen with regard to the proximity of the Mona Onshore Substation to the similar onshore facility required for the Awel y Mor Offshore Wind Farm.
- 19.10.5.3 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

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

### Significance of the effect

- 19.10.5.5 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.

## Operation and maintenance phase

### Magnitude of impact

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

19.10.5.7 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

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

#### Significance of the effect

19.10.5.9 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 2

#### Construction phase

##### Magnitude of impact

19.10.5.10 The changes to the character of the historic landscape arising from the construction and operation 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.

19.10.5.11 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

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

#### Significance of the effect

19.10.5.13 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.

#### Operation and maintenance phase

##### Magnitude of impact

19.10.5.14 The changes to the character of the historic landscape arising from the construction and operation and maintenance of the St Asaph solar farm would be considerably less

than those arising from the operation and maintenance of the Mona Onshore Transmission Assets due to the nature of solar farm developments.

19.10.5.15 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

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

#### Significance of the effect

19.10.5.17 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.

### 19.11 Transboundary effects

19.11.1.1 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.

### 19.12 Inter-related effects

19.12.1.1 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, operation 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.

19.12.1.2 A description of the likely interactive effects arising from the Mona Offshore Wind Project on the historic environment is provided in volume 3, chapter 25: Inter-related effects of the PEIR.

## 19.13 Summary of impacts, mitigation measures and monitoring

- 19.13.1.1 Information on the historic environment within the Mona 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.
- 19.13.1.2 Table 19.16 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
  - 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 operation and maintenance of the Mona Onshore Substation on above ground historic assets as a result of change within their setting
  - The impact of operation and maintenance of the Mona 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.
- 19.13.1.3 Overall it is concluded that there will be the following significant effects arising from the Mona Offshore Wind Project during the construction, operation and maintenance or decommissioning phases:
- Effects of up to **moderate adverse** significance arising from the loss of, or harm to, above ground historic assets during construction.
- 19.13.1.4 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 PEIR will be avoided or reduced to the extent that they are no longer significant.
- 19.13.1.5 Table 19.17 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.
- 19.13.1.6 Overall, it is concluded that there will be no significant cumulative effects from the Mona Offshore Wind Project alongside other projects and plans.

- 19.13.1.7 No potential transboundary effects on historic environment resources have been identified in regard to impacts arising from the terrestrial elements of the Mona Offshore Wind Project.

**Table 19.16: Summary of potential environmental effects, mitigation and monitoring.**

<sup>a</sup> C=construction, O=operation and maintenance, D=decommissioning

Description of impact	Phase <sup>a</sup>			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. Low	Unknown	Unknown	Effects offset through programme of further investigation ahead of and during construction.	Unknown	None
Loss of, or harm to, above ground historic assets.	✓	×	✓	Careful scheme design where cable route could directly impact above ground historic assets.	C. Low	High	Up to <b>Moderate adverse</b>	Effects offset through programme of further research and investigation ahead of and during construction.	Up to <b>Moderate adverse</b>	None
					D. Negligible	High	Minor adverse	None	<b>Minor adverse</b>	None
Impact on 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 <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	None
					O. Negligible	Up to High	Up to <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	None
					D. Negligible	Up to High	Up to <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	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	<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None
					O. Low	Low	<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None
					D. Low		<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None

**Table 19.17: Summary of potential cumulative environmental effects, mitigation and monitoring.**

<sup>a</sup> C=construction, O=operation and maintenance, D=decommissioning

Description of effect	Phase <sup>a</sup>			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							
<b>Tier 1</b>										
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
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 <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	None
					O. Negligible	Up to High	Up to <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	None
					D. Negligible	Up to High	Up to <b>Minor adverse</b>	None	Up to <b>Minor adverse</b>	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 impacts, landscape plans to further minimise impacts.	C. Low	Low	<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None
					O. Low	Low	<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None
					D. Low	Low	<b>Negligible or Minor adverse</b>	None	<b>Negligible or Minor adverse</b>	None



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Description of effect	Phase <sup>a</sup>			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							
									Negligible or Minor adverse	
<b>Tier 2</b>										
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
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
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	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

## 19.14 Next steps

- 19.14.1.1 The ongoing programme of geophysical survey will be completed and will be followed by a programme of archaeological trial trenching at selected locations agreed in advance with the relevant stakeholders. The results of this staged programme of archaeological fieldwork will feed into the project optioneering to enable the identification of a preferred location for the proposed Mona Onshore Substation and the preferred routes for the Onshore Cable Corridor and the Mona 400kV Grid Connection Cable.
- 19.14.1.2 The results of the archaeological fieldwork along with the review of additional data sources and more detailed examination of sources already consulted will enable the preparation of an updated DBA which will then form an annex to the Environmental Statement submitted as part of the DCO application.
- 19.14.1.3 Following selection of the preferred location for the proposed Mona Onshore Substation and the development of preliminary designs for that facility, the preparation of a revised ZTV will allow the identification of designated historic assets whose setting may be affected by its construction and operation and maintenance. The results of this element of the further work may feed into the more detailed design for the proposed Mona Onshore Substation.
- 19.14.1.4 Following the selection of the Mona Onshore Substation option, and the preparation of an indicative layout, further site visits will then be undertaken to selected designated historic assets in order to undertake the settings assessment to the required level. Visualisations may need to be produced to assist with the assessment of impacts and effects.
- 19.14.1.5 Following the refinement of the cable route across the Mona Landfall area, a further phase of intertidal survey may be undertaken. This would be in the form of a borehole survey to examine the potential for deposits of geoarchaeological or palaeoenvironmental interest to be present along the onshore export cable route in this area. This survey may be combined with a programme of geotechnical site investigation of the intertidal zone.
- 19.14.1.6 Information from the programme of fieldwork will be reported in the historic environment chapter of the Environmental Statement. 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 PEIR will be avoided or reduced to the extent that they are no longer significant.

## 19.15 References

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