Environmental Impact Assessment Report

Proposed Clonberne Wind Farm Development, Co. Galway

Chapter 13 – Cultural Heritage

DOCUMENT DETAILS

Client:	**Clonberne Windfarm Limited**
Project Title:	**Proposed Clonberne Wind Farm Development, Co. Galway**
Project Number:	**180740**
Document Title:	**Environmental Impact Assessment Report**
Document File Name:	**Ch 13. Cultural Heritage F - 2024.06.20 - 180740**
Prepared By:	**MKO** **Tuam Road** **Galway** **Ireland** **H91 VW84**

Planning and Environmental Consultants

Rev	Status	Date	Author(s)	Approved By
01	Final	20/06/2024	MC	JF, OC

13. CULTURAL HERITAGE

13.1 Introduction

This cultural heritage chapter was prepared by Tobar Archaeological Services Ltd. It presents the results of an archaeological, architectural and cultural heritage impact assessment of the construction, operation and decommissioning of the Proposed Project, located at Clonberne and adjacent townlands in Co. Galway.

The purpose of this chapter is to assess the potential direct and indirect effects of the Proposed Project on the surrounding archaeological, architectural and cultural heritage landscape. The assessment is based on both a desktop review of the available cultural heritage and archaeological data, and a field inspection of the Proposed Project footprint. An assessment of potential effects, including cumulative effects, is presented.

For the purposes of this EIAR:

- The 'Proposed Wind Farm Site' refers to the 11 no. turbines and associated foundations and hard-standing areas, junction accommodation works, access roads, temporary construction compound, underground cabling, peat, spoil and overburden management, site drainage, tree felling and all ancillary works and apparatus.
- The 'Proposed Grid Connection' refers to the on-site 220kV Substation, Underground 220kV Cabling Route, 2 no. new interface towers, Site Drainage, Operational Site Signage and all associated infrastructure.
- The 'Proposed Project' comprises the Proposed Wind Farm Site and the Proposed Grid Connection, all of which are located within the EIAR Study Boundary (the 'Site') and assessed together within this EIAR.

A detailed description of the Proposed Project is provided in Chapter 4 of this EIAR.

13.1.1 Location and Topography

The Proposed Project is located approximately 14km to the north-east of Tuam and approximately 6.5km to the south-east of Dunmore in Co. Galway. The approximate location of the centre of the Site is X554464, Y756549 in Irish Transverse Mercator (ITM). The proposed site covers an approximate area of 353 hectares (ha) in total. The Proposed Wind Farm Site predominantly comprises pastoral agricultural land and cut-over bog.

13.1.2 Statement of Authority

This chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by Miriam Carroll of Tobar Archaeological Services Ltd. Miriam graduated from University College Cork in 1998 with a Masters degree in Methods and Techniques in Irish Archaeology. She is licensed by the Department of Housing, Local Government and Heritage (DHLGH) to carry out excavations and is a member of the Institute of Archaeologists of Ireland. Miriam has been working in the field of archaeology since 1994 and has undertaken numerous projects for both the private and public sectors including excavations, site assessments (EIAR) and surveys. Miriam Carroll is a director of Tobar Archaeological Services which has been in operation for over 20 years.

13.1.3 Relevant Guidance and Legislation

13.1.3.1 Guidance

The assessment of the potential effects of the Proposed Project on cultural heritage has been carried out in accordance with the various planning policies and strategy guidance detailed in Section 1.2 in Chapter 1 of this EIAR and the following:

- Architectural Heritage Protection Guidelines for Planning Authorities (Department of Arts, Heritage and the Gaeltacht, 2011).
- Advice Notes on Current Practice (in preparation of Environmental Impact Statements) (Environmental Protection Agency (EPA), 2003).
- Guidelines on the information to be contained on the Environmental Impact Assessment Report (EPA, 2022).
- Department of Arts, Heritage, Gaeltacht and the Islands, 1999, Framework and Principles for the Protection of the Archaeological Heritage, 1999.
- Guidance on Setting and the Historic Environment, Historic Environment Division, February 2018.
- European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites. Publications Office of the European Union, Luxembourg.
- European Commission (2020). Guidance document on wind energy developments and EU nature legislation. Publications Office of the European Union, Luxembourg.
- Planning and Development Act 2000 (as amended).
- NRA (2009). Guidelines for Assessment of Ecological Impacts of National Road Schemes. National Roads Authority, Ireland.
- DoHPLG (2018). Guidelines for planning authorities and An Bord Pleanála on carrying out Environmental Impact Assessment. Department of Housing, Planning and Local Government, Government of Ireland, Dublin.
- Galway County Council (2022). Galway County Development Plan 2022-2028.

13.1.3.2 Legislation

Archaeological monuments are safeguarded through national and international policy, which is designed to secure the protection of the cultural heritage resource. This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention). This was ratified by Ireland in 1997.

Both the National Monuments Acts 1930 to 2004 and relevant provisions of the Cultural Institutions Act 1997 are the primary means of ensuring protection of archaeological monuments, the latter of which includes all man-made structures of whatever form or date. There are a number of provisions under the National Monuments Acts which ensure protection of the archaeological resource. These include the Register of Historic Monuments (1997 Act) which means that any interference to a monument is illegal under that Act. All registered monuments are included on the Record of Monuments and Places (RMP).

The Record of Monuments and Places (RMP) was established under Section 12 (1) of the National Monuments (Amendment) Act 1994 and consists of a list of known archaeological monuments and accompanying maps. The Record of Monuments and Places affords some protection to the monuments entered therein. Section 12 (3) of the 1994 Amendment Act states that any person proposing to carry out work at or in relation to a recorded monument must give notice in writing to the Minister (Environment, Heritage and Local Government) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

The term 'national monument' as defined in Section 2 of the National Monuments Act 1930 means a monument 'the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto'. National monuments in State care include those which are in the ownership or guardianship of the Minister for Arts, Heritage and the Gaeltacht. Section 5 of the National Monuments Act (1930) allows owners of other national monuments to appoint the Minister for the Arts, Heritage and the Gaeltacht or the relevant local authority as guardian of such monuments, subject to their consent. This means in effect that while the property of such a monument remains vested in the owner, its maintenance and upkeep are the responsibility of the State. Some monuments are also protected by Preservation Orders and are also regarded as National Monuments. National Monuments also includes (but not so as to limit, extend or otherwise influence the construction of the foregoing general definition) every monument in Saorstát Éireann to which the Ancient Monuments Protection Act, 1882, applied immediately before the passing of this Act, and the said expression shall be construed as including, in addition to the monument itself, the Site of the monument and the means of access thereto and also such portion of land adjoining such site as may be required to fence, cover in, or otherwise preserve from injury the monument or to preserve the amenities thereof.

Under the Heritage Act (1995) architectural heritage is defined to include 'all structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents...'. A heritage building is also defined to include 'any building, or part thereof, which is of significance because of its intrinsic architectural or artistic quality or its setting or because of its association with the commercial, cultural, economic, industrial, military, political, social or religious history of the place where it is situated or of the country or generally'.

13.1.3.3 Granada Convention

The Council of Europe, in Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), states that *'for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member State will undertake to maintain inventories of that architectural heritage'*. The Granada Convention emphasises the importance of inventories in underpinning conservation policies.

The NIAH was established in 1990 to fulfil Ireland's obligations under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architectural heritage of Ireland. Article 1 of the Granada Convention establishes the parameters of this work by defining 'architectural heritage' under three broad categories of Monument, Groups of Buildings, and Sites:

- Monument: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;
- Group of buildings: homogeneous groups of urban or rural buildings conspicuous for their historical, archaeological, artistic, scientific, social or technical interest, which are sufficiently coherent to form topographically definable units;
- Sites: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable, and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest.

The Council of Europe's definition of architectural heritage allows for the inclusion of structures, groups of structures and sites which are considered to be of significance in their own right, or which are of significance in their local context and environment. The NIAH believes it is important to consider the architectural heritage as encompassing a wide variety of structures and sites as diverse as post boxes, grand country houses, mill complexes and vernacular farmhouses.

13.1.3.4 Galway County Development Plan 2022-2028

The Galway County Development Plan 2022-2028 (CDP) outlines a number of policies and objectives relating to archaeology and cultural heritage as follows:

13.1.3.4.1 *Archaeological Heritage*

ARC 1 Legislative Context

Support and promote the preservation, conservation and appropriate management and enhancement of the County's archaeological sites and monuments, together with the settings of these monuments, having regard to the legislative, statutory and policy provisions relevant to the conservation of the archaeological heritage.

ARC 2 Archaeological Sites

Seek to encourage and promote awareness of and access to archaeological heritage of the County for all, through the provision of information to landowners and the community generally, in co-operation with statutory and other partners.

ARC 3 Archaeological Landscapes

To facilitate where possible the identification of important archaeological landscapes in the County.

ARC 4 Protection of Archaeological Sites

Protect archaeological sites and monuments their settings and visual amenity and archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments, or that are newly discovered and seek to protect important archaeological landscapes.

ARC 5 Development Management

All planning applications for new development, redevelopment, any ground works, refurbishment, and restoration, etc. within areas of archaeological potential or within close proximity to Recorded Monuments or within the historic towns of County Galway will take account of the archaeological heritage of the area and the need for archaeological mitigation.

ARC 6 Burial Grounds

Protect the burial grounds, identified in the Record of Monuments and Places, in co-operation with the National Monuments Service of the Department of Housing, Local Government and Heritage. Encourage the local community to manage burial grounds in accordance with best conservation and heritage principles.

ARC 7 Battlefield Sites

Protect the Battle of Aughrim site and other battlefield sites and their settings.

ARC 8 Underwater Archaeological Sites

To protect and preserve the archaeological value of underwater archaeological sites and associated features. In assessing proposals for development, the Council will take account of the potential underwater archaeology of rivers, lakes, intertidal and sub-tidal locations.

ARC 9 Recorded Monuments

Ensure that any development in the immediate vicinity of a Recorded Monument is sensitively designed and sited and does not detract from the monument or its visual amenity.

ARC 10 Zones of Archaeological Potential

To protect the Zones of Archaeological Potential located within both urban and rural areas and around archaeological monuments generally as identified in the Record of Monuments and Places. Any development within the ZAPs will need to take cognisance of the potential for subsurface archaeology and if archaeology is demonstrated to be present appropriate mitigation (such as preservation in situ/buffer zones) will be required.

ARC 11 Industrial and Post Medieval Archaeology

Protect and preserve the archaeological value of industrial and post medieval archaeology such as mills, limekilns, bridges, piers, harbours, penal chapels and dwellings. Proposals for refurbishment, works to or redevelopment/conversion of these sites should be subject to careful assessment.

ARC 12 Archaeology and Infrastructure Schemes

Have regard to archaeological concerns when considering proposed service schemes (including electricity, sewerage, telecommunications, water supply) and proposed roadwork's (both realignments and new roads) located in close proximity to Recorded Monuments and Places and their known archaeological monuments.

13.1.3.4.2 *Architectural Heritage*

The plan also outlines policies and objectives in relation to architectural heritage including Protected Structures.

AH 1 Architectural Heritage

Ensure the protection of the architectural heritage of County Galway, which is a unique and special resource, having regard to the policy guidance contained in the Architectural Heritage Protection Guidelines 2011 (and any updated/superseding document).

AH 2 Protected Structures (Refer to Appendix 6 of the CDP)

(a) Ensure the protection and sympathetic enhancement of structures including their curtilage and attendant grounds included and proposed for inclusion in the Record of Protected Structures (RPS) that are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, together with the integrity of their character and setting. (b) Review the Record of Protected Structures in order to provide a comprehensive schedule for the protection of structures of special importance in the County during the lifetime of the plan. (c) Ensure that development proposals are appropriate in terms of architectural treatment, character, scale and form to the existing protected structure and not detrimental to the special character and integrity of the protected structure and its

setting. (d) Ensure high quality architectural design of all new developments relating to or which may impact on structures (and their settings) included in the Record of Protected Structures. (e) Promote and ensure best conservation practice through the use of specialist conservation professionals and craft persons. (f) Prohibit development proposals, either in whole or in part, for the demolition of protected structures, save in exceptional circumstances.

AH 3 Protection of Structure on the NIAH

Give regard to and consideration of all structures which are included in the NIAH for County Galway, which are not currently included in the Record of Protected Structures, in development management functions.

AH 4 Architectural Conservation Areas (Refer to Appendix 7 of the CDP)

Protect, conserve and enhance the special character of the Architectural Conservation Areas (ACA) included in this plan through the appropriate management and control of the design, location and layout of new development, modifications, alterations or extensions to existing structures, surviving historic plots and street patterns and/or modifications to the character or setting of the Architectural Conservation Area. Works within the ACA shall ensure the conservation of traditional features and building elements that contribute to the character of the area. The special character of an area includes its traditional building stock and material finishes, spaces, streetscape, shop fronts, landscape and setting. New proposals shall have appropriate regard to scale, plot, form, mass, design, materials, colours and function. This will be achieved by;
(a) Protecting all buildings, structures, groups of structures, sites, landscapes and all features which contribute to the special character of the ACA from demolition and non– sympathetic alterations.
(b) Promote appropriate and sensitive reuse and rehabilitation of buildings and sites within the ACA.
(c) Ensure new development within or adjacent to an ACA respects the established character of the area and contributes positively in terms of design, scale, setting and material finishes to the ACA.
(d) Promote high quality architectural design within ACAs.
(e) Seek the repair and reuse of traditional shopfronts and where appropriate, encourage new shopfronts of a high-quality architectural design.
(f) Ensure that all new signage, lighting, advertising and utilities to buildings within ACA are designed, constructed, and located in such a manner that they do not detract from the character of the ACA.
(g) Protect and enhance the quality of open spaces within ACAs and ensure the protection and where necessary reuse of street furniture and use of appropriate materials during the course of public infrastructure schemes within ACAs.
(h) Prohibit development proposals, either in whole or in part for the demolition of a structure within an Architectural Conservation Area that contributes to the special character of the area.
(i) Protect structures in ACAs from non-sympathetic alterations and encourage appropriate infill developments.
(j) Works materially affecting the character of a protected structure or the exterior of a building/ structure within an ACA will require planning permission;
(k) Any works carried out to a protected structure or the exterior of a building/structure within an ACA shall be in accordance with best conservation practice and use sustainable and appropriate materials.
(l) Ensure that any development, modifications, alterations, or extensions materially affecting the character of a protected structure, or a structure adjoining a protected structure, or a structure within or adjacent to an Architectural Conservation Area (ACA), is sited and designed appropriately and is not detrimental to the character or setting of the protected structure or of the ACA.

AH 5 Maintenance and Re-use of existing Building Stock

Promote the maintenance and appropriate re-use of the existing stock of buildings with architectural merit as a more sustainable option to their demolition and redevelopment.

AH 6 Vernacular Architecture

Recognise the importance of the contribution of vernacular architecture to the character of a place and ensure the protection, retention and appropriate revitalisation and reuse of the vernacular built heritage including structures that contribute to landscape and townscape character and resist the demolition of these structures.

AH 7 Local Place Names

Protect local place names as an important part of the cultural heritage and unique character of an area. Support the use of appropriate names for new developments that reflect the character and heritage of the area and that contribute to the local distinctiveness of a place.

AH 8 Energy Efficiency and Traditionally Built Structures

Ensure that measures to upgrade the energy efficiency of protected structures and traditionally built historic structures are sensitive to traditional construction methods, employ best practice and use appropriate materials and methods that will not have a detrimental impact on the material, functioning or character of the building.

AH 9 Local Landscape and Place Assessment

To support proposals from local communities including Tidy Town Committees, Chambers of Commerce and residents' groups in analysing the character of their place and promoting its regeneration for their own use and enjoyment and that of visitors to the area.

AH 10 Designed Landscapes

Protect the surviving historic designed landscapes in the County and promote the conservation of their essential character, both built and natural. Consider protection of the designed landscape by inclusion in an Architectural Conservation Area. Development proposals in designed landscape shall be accompanied by an appraisal of the contributing elements and an impact assessment.

AH 11 Custodianship

Promote an inter-disciplinary approach demonstrating best practice with regard to the custodianship of protected structures, recorded monuments and elements of built heritage.

AH 12 Placemaking for Towns and villages

Promote the value of placemaking in cooperation with communities in their towns, villages and local areas.

AH 13 Traditional Building Skills

Support and promote traditional building skills, training and awareness of the use of appropriate materials and skills within the Local Authority, community groups, owners and occupiers of traditionally built structures.

AH 14 Design and Landscaping in New Buildings

Encourage new buildings that foster an innovative approach to design and acknowledges the diversity of suitable design solutions in appropriate locations while promoting the added economic, amenity and environmental value of good design.

13.1.3.4.3 *Cultural Heritage*

The CDP also outlines policy objectives in relation to cultural heritage.

CUH 1 Cultural heritage

Protect and promote the cultural heritage assets and the intangible cultural heritage assets of County Galway as important social and economic assets.

CUH 2 Special Places of Historic Interest

To protect and promote where possible special places of historical interest.

CUH 3 Placenames/Naming of New Developments

Promote and preserve local place names, local heritage and the Irish language by ensuring the use of local place names or geographical or cultural names which reflect the history and landscape of their settings in the naming of new residential and other developments. All names will be in the Irish language only. The naming and numbering schemes including associated signage must be submitted to the Planning Authority prior to the commencement of a new development.

CUH 4 The Gaeltacht and Linguistic Heritage

(a) To protect the linguistic and cultural heritage of the Gaeltacht and to promote Irish as a community language. To promote and facilitate the sustainable development of An Ghaeltacht and Island communities in County Galway.
(b) To support organisations involved in the continued promotion and preservation of the Irish language and culture. To work in a positive and encouraging way to create and maintain a bilingual environment in the County, and to ensure the availability of opportunities for the use of spoken and written Irish.

CUH 5 Library and Archives

(a) To facilitate the development and implementation of Galway Library Development Programme 2016-2021 or subsequent programme and support the development and promotion of the library network in the county.

(b) Galway County Council shall support the provision of a purpose-built repository, meeting international archival standards, to house, and ensure the preservation, of this important heritage resource.

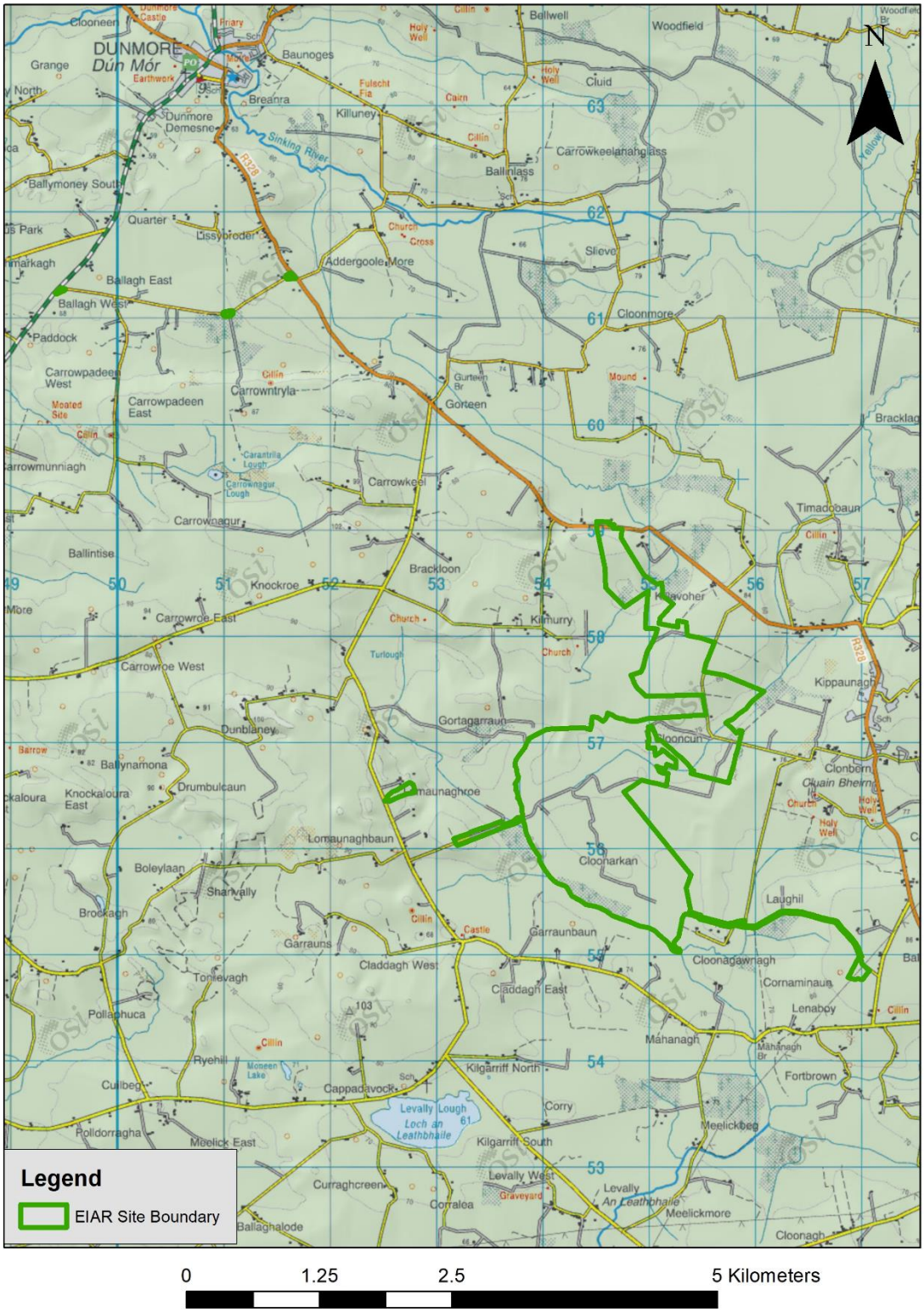

Figure 13-1: Site location map.

13.1.4 Statutory Consultations

No scoping responses relating to Cultural Heritage were received from the various statutory bodes consulted as part of the scoping process.

13.2 Assessment Methodology

The assessment of the Cultural Heritage of the Proposed Project included geographic information system (GIS) mapping, desk-based research and field inspection.

13.2.1 Geographical Information Systems (GIS)

GIS is a computer database which captures, stores, analyses, manages and presents data that is linked to location. GIS is geographic information systems which includes mapping software and its application with remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography and tools that can be implemented with GIS software. GIS was used to manage the datasets relevant to the archaeological and architectural heritage assessment and for the creation of all the maps in this section of the report. This involved the overlaying of the relevant archaeological and architectural datasets on georeferenced aerial photographs and road maps (i.e. Economic and Social Research Institute (ESRI)), where available. The integration of this spatial information allows for the accurate measurement of distances of a proposed development from archaeological and cultural heritage sites and the extraction of information on 'monument types' from the datasets. Areas of archaeological or architectural sensitivity may then be highlighted in order to mitigate the potential negative effects of a development on archaeological, architectural and cultural heritage.

13.2.2 Desktop Assessment

The following sources were consulted as part of the desktop assessment for the Proposed Project:

- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- National Monuments in State Care County Galway
- The Topographical Files of the National Museum of Ireland
- First edition Ordnance Survey maps (OSI)
- Second edition Ordnance Survey maps (OSI)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI)[1]
- Excavations Database
- National Inventory of Architectural Heritage (NIAH)
- Record of Protected Structures
- Galway County Development Plan 2022-2028

Each of these are discussed in the following sections.

13.2.2.1 Record of Monuments and Places, Sites and Monuments Record and National Monuments

A primary cartographic source and base-line data for the assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Galway. All

[1] *On the 1st March 2023, the Ordnance Survey of Ireland along with the Property Registration Authority and the Valuation Office merged into the newly formed Tailte Éireann*

known recorded archaeological monuments are indicated on 6-inch Ordnance Survey (OS) maps and are listed in these records. The SMR/RMP is not a complete record of all monuments as newly discovered sites may not appear in the list or accompanying maps. In conjunction with the consultation of the SMR and RMP the electronic database of recorded monuments and SMRs which may be accessed at www.heritagedata.maps.arcgis.com was also consulted.

A review of all National Monuments in State Care and those subject to Preservation Orders in County Galway was also undertaken as part of the assessment.

13.2.2.2 Cartographic Sources and Aerial Photography

The 1st (1840s) and 2nd (1900s) edition OS maps for the area were consulted, where available, as was OSI aerial photography.

13.2.2.3 Topographical Files - National Museum of Ireland

Details relating to finds of archaeological material and monuments in numerous townlands in the country are contained in the topographical files held in the National Museum of Ireland. In order to establish if any new or previously unrecorded finds had been recovered from the Site these files, as available on Heritage Maps (www.heritagemaps.ie), were consulted for each townland within and immediately adjacent to the Site.

13.2.2.4 Archaeological Inventory Series

Further information on archaeological sites may be obtained in the published County Archaeological Inventory series prepared by the Department of Housing, Local Government and Heritage (DHLGH). The archaeological inventories present summarised information on sites listed in the SMR/RMP and include detail such as the size and location of particular monuments, as well as any associated folklore or local information pertaining to each site. The inventories, however, do not account for all sites or items of cultural heritage interest which are undiscovered at the time of their publication. Many sites have been discovered since the publication of the Inventory Series, which have now been added to the Sites and Monuments Record.

13.2.2.5 Record of Protected Structures

The current County Development Plan was consulted for the schedule of buildings (Record of Protected Structures) and items of cultural, historical or archaeological interest which may be affected by the Proposed Project. The development plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of County Galway. The dataset for the Galway Record of Protected Structures was added to the base mapping for the Proposed Project in order to accurately assess any potential impacts on such structures.

13.2.2.6 Excavations Database

The Excavations Database is an annual account of all excavations carried out under license. The database is available online at www.excavations.ie and includes excavations from 1985 to 2023. This database was consulted as part of the desktop research for this assessment to establish if any archaeological excavations had been carried out within or near to the Site.

13.2.2.7 National Inventory of Architectural Heritage (NIAH)

This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county-by-county basis by the Department of Housing, Local Government and Heritage (DHLGH). The NIAH database was consulted for all townlands within and adjacent to the Site. The

NIAH survey has been published and the digital dataset was downloaded on to the base mapping for the Proposed Project (www.buildingsofireland.ie). The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Housing, Local Government and Heritage (DHLGH) and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for the Department of Culture, Heritage and the Gaeltacht to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).

13.2.2.8 Previous Assessments

No previous assessments were carried out on the Site.

13.2.3 Field Inspection

The Site was subject to a walk-over survey and windscreen survey in 2020, 2021, 2022 and 2024. A photographic and descriptive record was made of the Site and any features of interest therein. The photographic record is included as Appendix 13-1 of this EIAR. All SMR sites within the EIAR Site Boundary were inspected as well as any other relevant cultural heritage features.

13.2.3.1 Limitations Associated with Fieldwork

No limitations were encountered during fieldwork and all areas were accessed.

13.2.4 Assessment of Likely Significant Effects

The likely effects on the existing archaeological, architectural and cultural heritage environment are assessed using the criteria as set out in the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports'* (EPA, May 2022) and described in section 1.7 of Chapter 1. The following terminology is used when describing the likely effects of the Proposed Project from a Cultural Heritage perspective.

13.2.4.1 Types of Effect

- Direct effects arise where an archaeological heritage feature or site is physically located within the footprint of the development whereby the removal of part, or all of the feature or site is thus required.
- Indirect effects may arise as a result of subsurface works undertaken outside the footprint of the development, secondary environmental change such as a reduction in water levels and visual effects.
- Cumulative effects arise when the addition of many effects create a larger, more significant impact.
- Residual effects are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

13.2.4.1.1 *Magnitude of Effects (Significance)*

- Profound: Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological site is completely and irreversibly destroyed.

- Very Significant: An effect which by its character, magnitude, duration or intensity significantly alters most of the sensitive aspect of the environment.
- Significant: An effect which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. An effect like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological site.
- Moderate: A moderate effect arises where a change to an archaeological site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.
- Slight: An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site.
- Not Significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.
- Imperceptible: An effect on an archaeological site capable of measurement but without noticeable consequences.

13.2.5 Methodology for the assessment of impacts on visual setting (indirect effects)

A standardised approach was utilised for the assessment of impacts of visual setting (indirect effects) according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity. This assessment does not include visits to each and every site as this is considered to be beyond the scope of this EIAR as they are mainly located on private lands to which the public have no access. The assessment of impacts on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 14 of this EIAR, and also photomontages / Photowires from specific cultural heritage assets. The analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 10km and 20km considers the effects of the proposed turbines only. The tall, vertical nature of the proposed turbines make them the most prominent elements of the Proposed Project from a visual perspective and have the most potential to give rise to significant, indirect, effects. The proposed on-site substation and the proposed interface masts are also considered in terms of potential visual effects.

Other components of the Proposed Project i.e. other components of the Proposed Wind Farm such as roads, hardstands, etc and the underground element of the Proposed Grid Connection are not deemed to be as visually prominent as the proposed turbines the proposed substation and the proposed interface towers.

While direct physical effects to a site or monument can easily be assessed in quantitative terms, the assessment of effects on setting can be subjective and as such is a matter of qualitative, professional judgement and experience. The distances below used in the assessment of effects on setting are regarded as appropriate and are based on professional judgement.

Plate 13-1: Doorway of Dunmore Friary (Nat. Mon. No. 273).

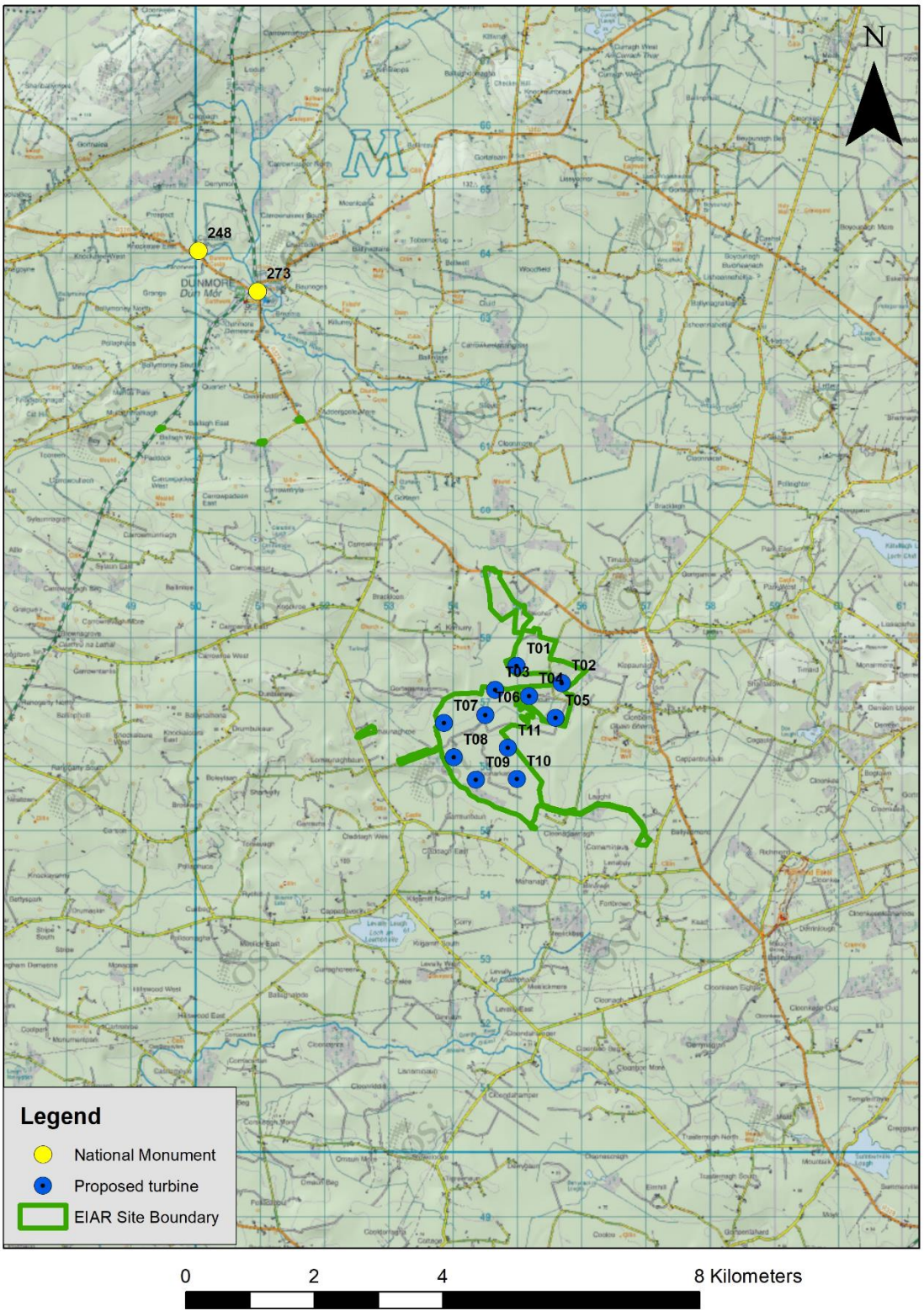

Figure 13-2: National Monuments within 10km of the nearest proposed turbine.

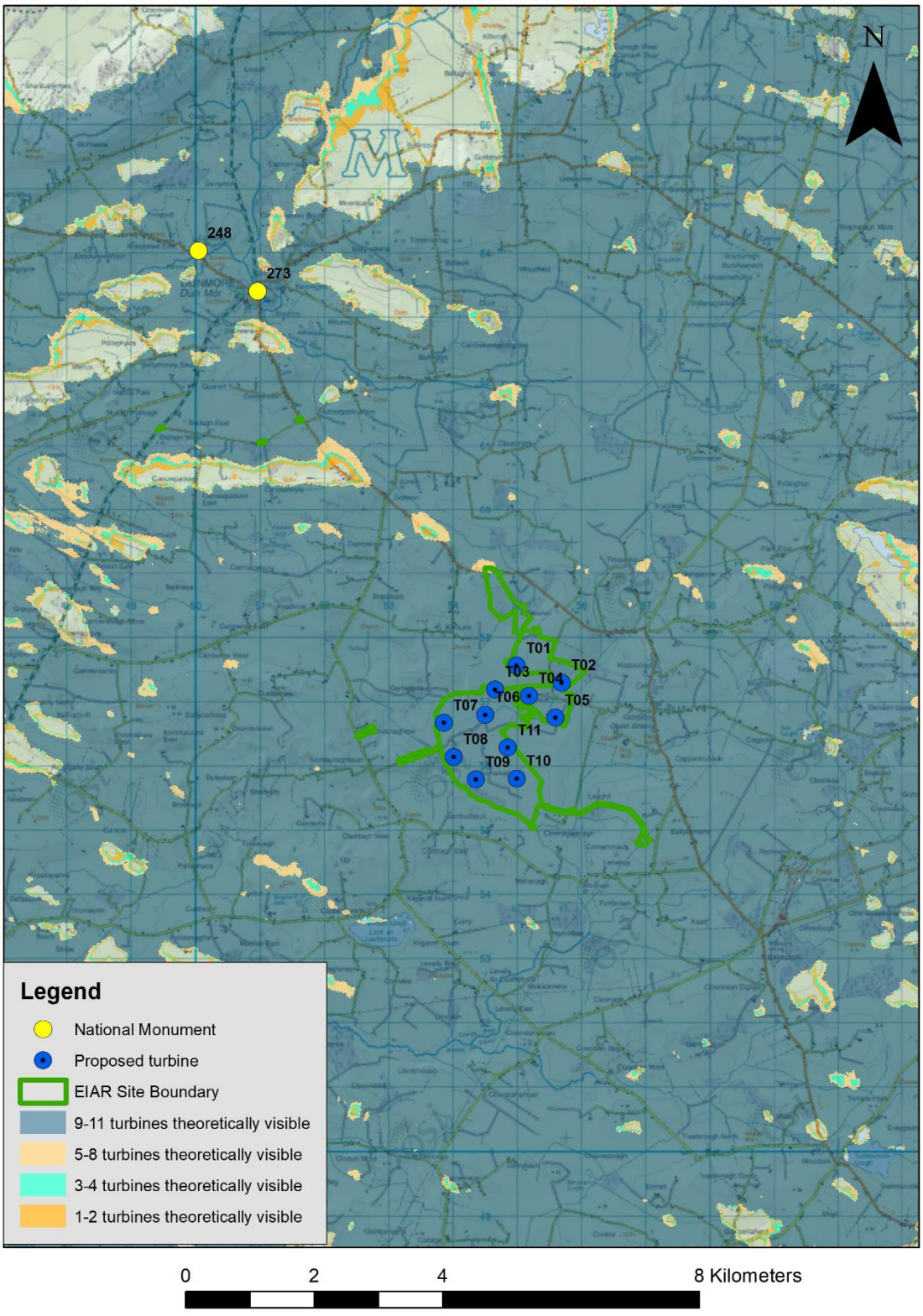

Figure 13-3: National Monuments with ZTV.

13.3.3.3 Recorded Monuments within the Proposed Wind Farm Site

One recorded monument, GA030-073— Enclosure, is located within the Proposed Wind Farm Site. The monument is listed in Table 13-4 and shown on Figure 13-4 below. A description from the HEV is provided with supplementary information from field survey carried out as part of this assessment. It should be noted that the distance to the nearest turbine, T2, as shown in Table 13-4 is to the centre-point of the monument as depicted on the HEV, however, field survey carried out for this assessment showed that the monument is situated slightly further to the west (see below).

Table 13-4: SMR located within the Proposed Wind Farm Site

SMRS	ITM (E)	ITM (N)	Class	Townland	Turbine No.	Distance (m)
GA030-073—	555740	757382	Enclosure	KILLAVOHER	T02	95

13.3.3.3.1 *GA030-073---- : Enclosure : KILLAVOHER*

Description: On a SE-facing slope in reclaimed grassland overlooking bogland to E and S. Poorly preserved subcircular platform (E-W 30m) defined by a degraded scarp. It has been quarried out at NE and SE, and does not survive from SE to SW where a field boundary cuts the monument. The above description is derived from the published 'Archaeological Inventory of County Galway Vol. II - North Galway'. Compiled by Olive Alcock, Kathy de hÓra and Paul Gosling (Dublin: Stationery Office, 1999). Date of upload: 05 August 2010

This monument was visited as part of the walk-over survey carried out for this assessment. It was apparent as a raised platform defined by a scarped edge. It was noted, however, that the enclosure is located slightly further to the west than indicated by the centre point on the HEV. Also, the field boundary referred to in the description of this monument is not present and has been replaced by a post and wire fence. The outer extent of the monument as discerned by the site inspection and a review of the available historic OS mapping is shown in Figure 13-7 and at its closest point is located c. 22m to the east of the hardstand for T2. Potential effects and mitigation are addressed in Section 13.4 below.

Plate 13-2: Enclosure GA030-073—, looking NW.

Figure 13-4: Recorded monument GA030-073—, Enclosure within the Proposed Wind Farm Site.

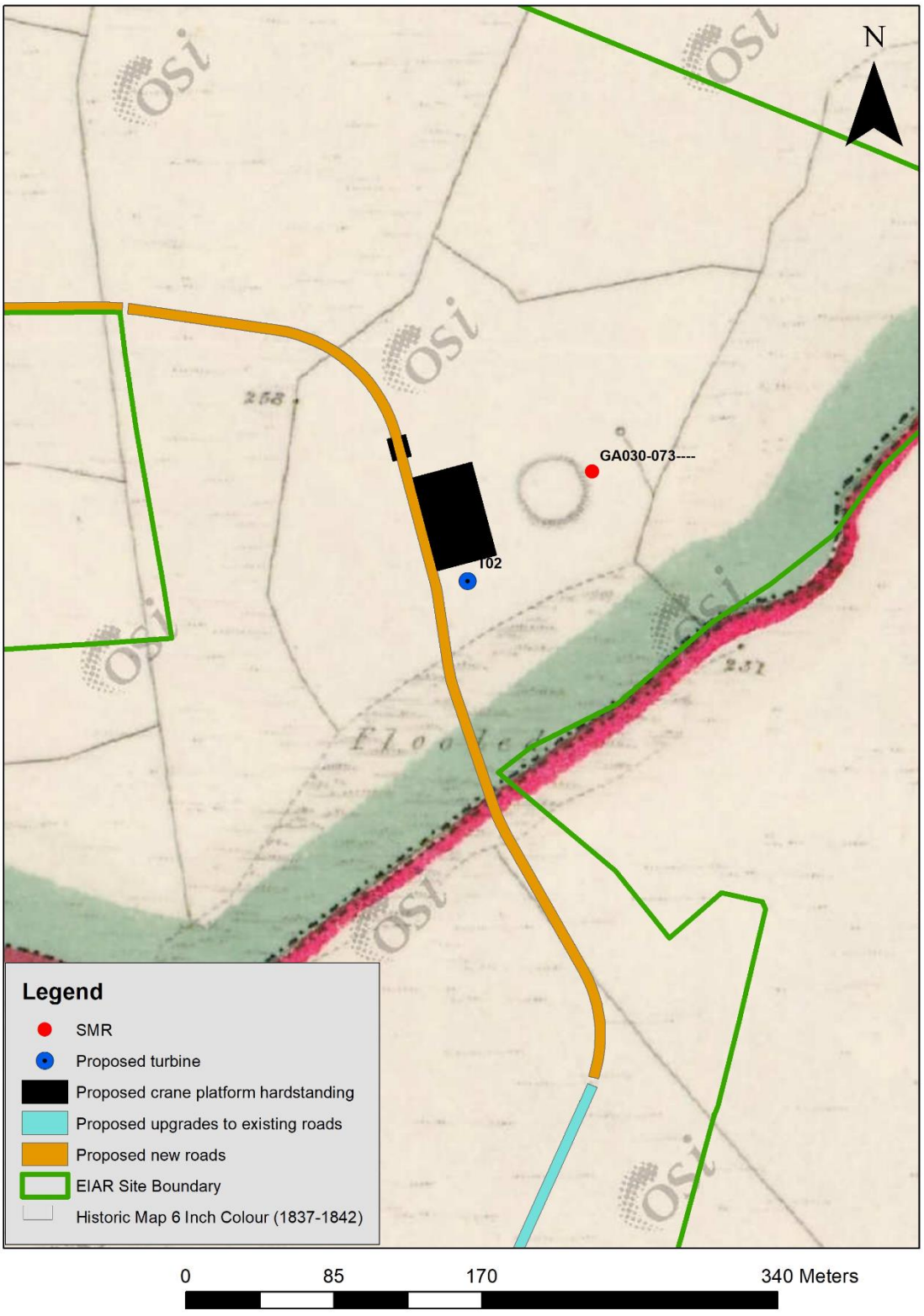

Figure 13-5: Enclosure GA030-073— as depicted on 1st edition OS map.

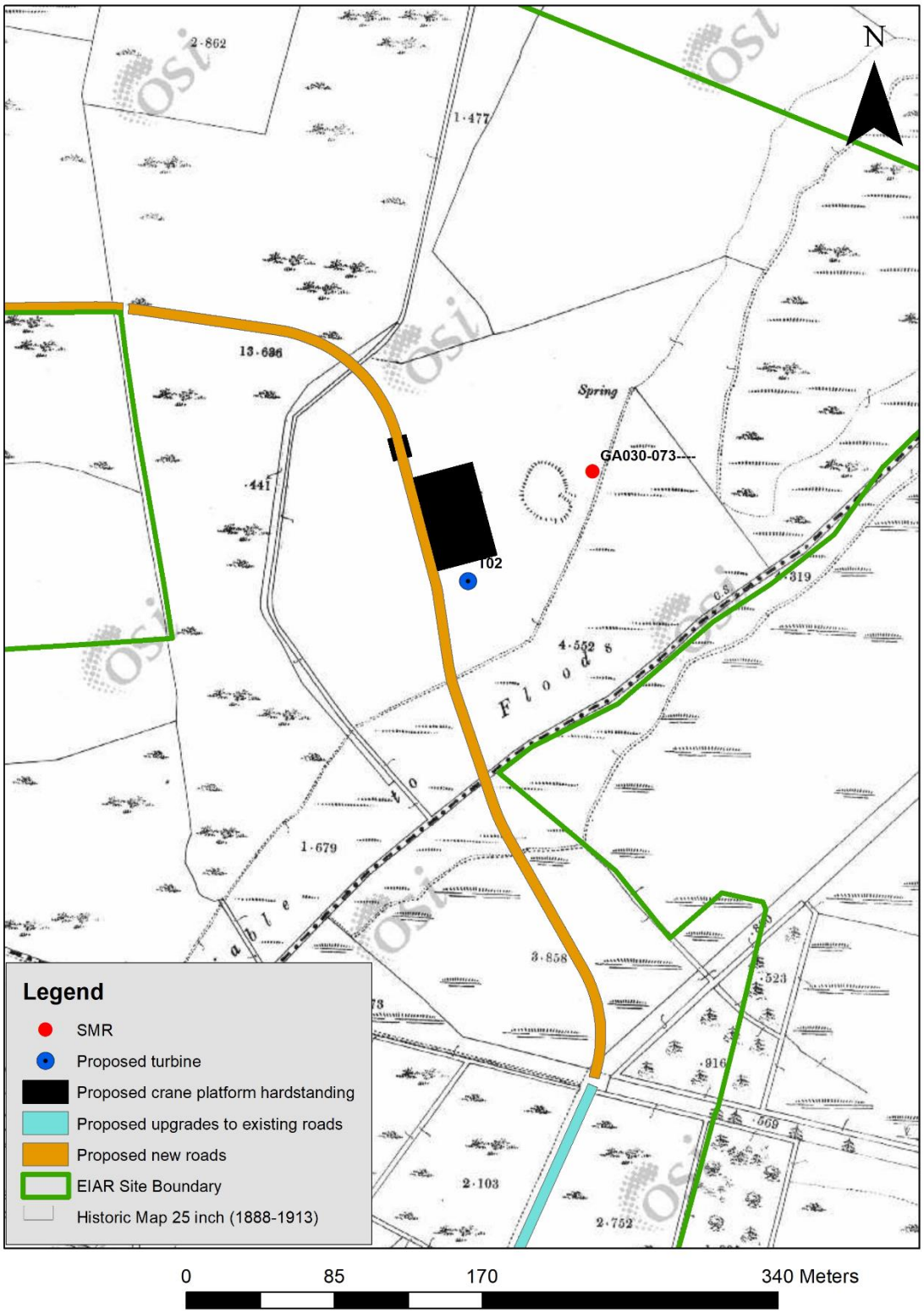

Figure 13-6: GA030-073— as depicted on 2nd edition OS map.

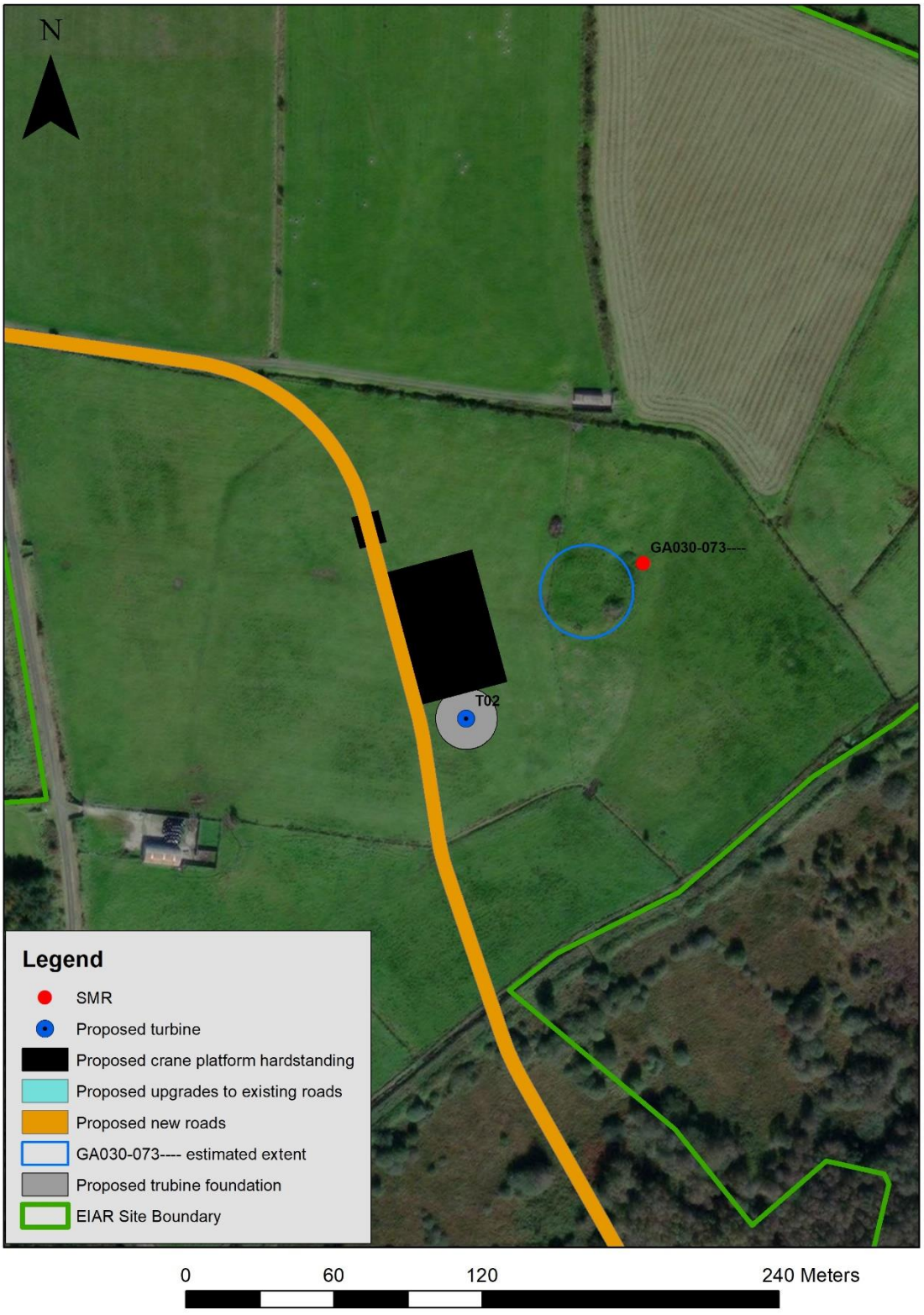

Figure 13-7: Extent of enclosure GA030-073— as estimated from field survey and historic mapping.

13.3.3.4 Recorded Monuments within 5km of the nearest proposed turbine

A total of one hundred and seventy-one (171) recorded monuments are located within 5km of the nearest proposed turbine. This number includes the monument located within the Proposed Wind Farm Site discussed above in Section 13.3.3.3. The monument locations are shown on Figure 13-8 and

listed in Table 13-5. The ZTV shows that 158 of the 171 monuments are located in areas where 9-11 turbines will theoretically be visible (Figure 13-9). An overview of the broad periods and monument types represented within the 5km study area is presented below.

Table 13-5: Recorded monuments within 5km of the nearest proposed turbine.

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
1	GA030-073—	KILLAVOHER	555740	757382	Enclosure	T02	95
2	GA030-044—	CLONBERN,GORTAGARRAUN,KILMURRY (Ballymoe By.)	554581	757348	Boundary mound	T03	145
3	GA030-077—	KILMURRY (Ballymoe By.)	554592	757460	Boundary mound	T03	251
4	GA030-045—	CLONBERN,CLOONARKAN	555366	755789	Boundary mound	T10	397
5	GA030-061—	GARRAUNBAUN (Ballymoe By.)	554232	755319	Ringfort - rath	T09	503
6	GA017-121001-	KILMURRY (Ballymoe By.)	554324	757913	Church	T01	721
7	GA017-121002-	KILMURRY (Ballymoe By.)	554321	757922	Graveyard	T01	728
8	GA017-121003-	KILMURRY (Ballymoe By.)	554321	757922	Ecclesiastical enclosure	T01	728
9	GA018-024—	KILLAVOHER	556084	757936	Enclosure	T02	744

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
10	GA030-067—	GORTAGARRAUN	553442	757351	Ringfort - rath	T07	762
11	GA017-108—	KILLAVOHER	555950	758212	Ringfort - rath	T02	936
12	GA031-016—	CLONBERN	556526	756528	Church	T05	989
13	GA031-016001-	CLONBERN	556535	756519	Graveyard	T05	1000
14	GA031-018—	CLONBERN	556510	756316	Ritual site - holy well	T05	1048
15	GA017-109—	KILLAVOHER	555770	758402	Monumental structure	T02	1088
16	GA030-042001-	CLADDAGH WEST	553204	755222	Enclosure	T08	1228
17	GA030-042—	CLADDAGH WEST	553187	755201	Castle - tower house	T08	1255
18	GA030-039—	CLADDAGH EAST	553486	754850	Ringfort - rath	T09	1281
19	GA030-097—	LOMAUNAGHBAUN	552601	755992	Ringfort - cashel	T08	1400
20	GA031-069—	KIPPAUNAGH	557069	757194	Architectural feature	T02	1406
21	GA017-120—	KILMURRY (Ballymoe By.)	553793	758383	Ringfort - rath	T01	1419

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
22	GA030-040002-	CLADDAGH WEST	552724	755437	Souterrain	T08	1460
23	GA030-040001-	CLADDAGH WEST	552724	755436	Children's burial ground	T08	1461
24	GA030-040—	CLADDAGH WEST	552724	755435	Ringfort - rath	T08	1461
25	GA031-017—	CLONBERN	557066	756286	Ritual site - holy well	T05	1575
26	GA030-058—	DUNBLANEY	552294	757147	Ringfort - rath	T07	1603
27	GA030-094—	LOMAUNAGHBAUN	552304	755683	Ringfort - rath	T08	1754
28	GA017-024—	BRACKLOON (Ballymoe By.)	552836	758165	Church	T07	1774
29	GA017-024001-	BRACKLOON (Ballymoe By.)	552844	758171	Graveyard	T07	1775
30	GA017-024002-	BRACKLOON (Ballymoe By.)	552844	758171	Ecclesiastical enclosure	T07	1775
31	GA017-023—	BRACKLOON (Ballymoe By.)	553317	758514	Ringfort - rath	T03	1852

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
32	GA017-023001-	BRACKLOON (Ballymoe By.)	553301	758499	Enclosure	T03	1853
33	GA030-095—	LOMAUNAGHBAUN	552052	756061	Enclosure	T07	1891
34	GA031-022—	COGAULA	557588	757306	Ringfort - rath	T02	1920
35	GA018-061001-	TIMADOOAUN	556754	758993	Children's burial ground	T02	1995
36	GA018-061—	TIMADOOAUN	556755	758993	Enclosure	T02	1996
37	GA030-041—	CLADDAGH WEST	552181	755273	Ringfort - rath	T08	2017
38	GA030-043—	CLADDAGH WEST	552588	754694	Enclosure	T08	2032
39	GA031-050—	LAUGHIL (Ballymoe By.)	556760	754863	Ringfort - rath	T10	2032
40	GA017-033—	CARROWKEEL (Ballymoe By.)	553941	759392	Ringfort - rath	T01	2078
41	GA030-056—	DUNBLANEY	551781	757262	Ringfort - rath	T07	2128
42	GA031-021—	COGAULA	557819	757393	Ringfort - rath	T02	2152

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
43	GA017-025—	BRACKLOON (Ballymoe By.)	553281	758982	Ringfort - rath	T01	2189
44	GA018-035—	LERHIN	557617	758341	Ringfort - rath	T02	2200
45	GA030-059—	DUNBLANEY	551641	757412	Ringfort - rath	T07	2305
46	GA030-062001-	GARRAUNS (Ballymoe By.)	552051	754839	Souterrain	T08	2349
47	GA030-062—	GARRAUNS (Ballymoe By.)	552051	754839	Ringfort - rath	T08	2349
48	GA017-034—	CARROWKEEL (Ballymoe By.)	553398	759361	Ringfort - rath	T01	2369
49	GA018-020001-	GORTGARROW	557184	759299	Enclosure	T02	2493
50	GA030-057001-	DUNBLANEY	551330	756976	Souterrain	T07	2518
51	GA030-057—	DUNBLANEY	551330	756977	Ringfort - rath	T07	2518
52	GA018-020002-	GORTGARROW	557177	759344	Redundant record	T02	2525
53	GA031-004—	BALLYEDMOND	557140	754503	Children's burial ground	T10	2541
54	GA030-063—	GARRAUNS (Ballymoe By.)	551635	755195	Enclosure	T08	2547

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
55	GA018-021—	GORTGARROW	557816	758820	Enclosure	T02	2620
56	GA017-133—	KNOCKROE (Ballymoe By.)	552258	758792	Enclosure	T07	2621
57	GA030-020—	CAPPADAVOCK	552657	753786	Ringfort - rath	T09	2629
58	GA030-020001-	CAPPADAVOCK	552657	753785	Souterrain	T09	2630
59	GA031-037—	FORTBROWN	556850	753983	Enclosure	T10	2633
60	GA031-070—	COGAULA	558280	756946	Children's burial ground	T02	2638
61	GA018-036001-	LERHIN	558298	758104	Bawn	T02	2744
62	GA018-036002-	LERHIN	558298	758104	Bawn	T02	2744
63	GA018-036—	LERHIN	558300	758100	Castle - unclassified	T02	2745
64	GA018-036003-	LERHIN	558299	758104	Earthwork	T02	2745
65	GA018-036004-	LERHIN	558299	758104	Building	T02	2745
66	GA031-038—	FORTBROWN	556980	753927	Redundant record	T10	2765
67	GA030-126—	TONREVAGH	551449	754999	Ringfort - rath	T08	2796
68	GA030-047—	CORRALEA (Ballymoe By.)	552931	753383	Crannog	T09	2804

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
69	GA030-092—	LEVALLY WEST	553951	753003	Ringfort - rath	T09	2834
70	GA017-135—	KNOCKROE (Ballymoe By.)	551791	758692	Ringfort - rath	T07	2854
71	GA017-075—	CLOONMORE (Ballymoe By.)	554925	760453	Mound	T01	2868
72	GA017-036—	CARROWKEEL (Ballymoe By.)	552222	759078	Enclosure	T07	2874
73	GA030-055—	DUNBLANEY	551055	757482	Ringfort - rath	T07	2887
74	GA030-021—	CAPPADAVOCK, RYEHILL	551824	754246	Ringfort - rath	T08	2894
75	GA030-064—	GINNAUN	554041	752843	Graveyard	T09	2983
76	GA017-164—	CARROWKEEL (Ballymoe By.)	552301	759341	Enclosure	T07	3055
77	GA017-134—	KNOCKROE (Ballymoe By.)	551287	758405	Ringfort - rath	T07	3066
78	GA017-134001-	KNOCKROE (Ballymoe By.)	551286	758404	Souterrain	T07	3066
79	GA018-037—	LERHIN	558690	758102	Enclosure	T02	3121

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
80	GA017-035—	CARROWKEEL (Ballymoe By.)	551959	759209	Ringfort - rath	T07	3134
81	GA030-122—	SHANVALLY (Dunmore By.)	550938	755396	Ringfort - rath	T08	3147
82	GA030-130—	SHANVALLY (Dunmore By.)	550819	755733	Burial	T07	3164
83	GA030-132—	DRUMBULCAUN	550644	756389	Ringfort - cashel	T07	3204
84	GA030-019—	CAPPADAVOCK	551911	753713	Enclosure	T09	3204
85	GA030-066—	GINNAUN,LEVALLY EAST	554195	752574	Enclosure	T09	3240
86	GA030-129—	LEVALLY EAST	554319	752558	Church	T09	3254
87	GA017-046—	CARROWNAGUR	551331	758822	Ringfort - rath	T07	3282
88	GA030-090001-	LEVALLY EAST	554278	752529	Chapel	T09	3283
89	GA030-090002-	LEVALLY EAST	554324	752520	Castle - unclassified	T09	3292
90	GA030-046002-	CORRALEA (Ballymoe By.)	552925	752826	Souterrain	T09	3301
91	GA030-046—	CORRALEA (Ballymoe By.)	552925	752825	Ringfort - rath	T09	3302

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
92	GA030-046001-	CORRALEA (Ballymoe By.)	552925	752825	Children's burial ground	T09	3302
93	GA030-125—	TONREVAGH	550899	755002	Ringfort - rath	T08	3303
94	GA030-048—	CURRAGHCREEN (Ballymoe By.)	552201	753283	Ringfort - rath	T09	3307
95	GA030-049—	CURRAGHCREEN (Ballymoe By.)	552731	752843	Ringfort - rath	T09	3373
96	GA030-120001-	TONREVAGH	551283	754150	Children's burial ground	T08	3375
97	GA030-120002-	TONREVAGH	551282	754150	Souterrain	T08	3375
98	GA030-120—	RYEHILL,TONREVAGH	551267	754132	Ringfort - rath	T08	3398
99	GA030-030—	CARROWROE WEST (Ballymoe By.)	550469	757217	Ringfort - rath	T07	3404
100	GA030-127—	BOLEYLAAN	550518	755898	Redundant record	T07	3410
101	GA030-128—	BOLEYLAAN	550533	755806	Redundant record	T07	3418
102	GA030-054—	DRUMBULCAUN	550396	756539	Kiln - lime	T07	3440
103	GA030-053—	DRUMBULCAUN	550386	756600	Ringfort - cashel	T07	3448

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
104	GA030-052—	DRUMBULCAUN	550380	756719	Ringfort - rath	T07	3453
105	GA030-007001-	BALLYNAMONA (Dunmore By.)	550198	756875	Souterrain	T07	3639
106	GA030-007—	BALLYNAMONA (Dunmore By.)	550198	756875	Ringfort - rath	T07	3639
107	GA030-091—	LEVALLY EAST	554481	752143	Enclosure	T09	3671
108	GA030-050—	CURRAGHCREEN (Ballymoe By.),RYEHILL	551561	753313	Ringfort - rath	T09	3732
109	GA017-066—	AN CHEATHRÚ RUA THOIR,CARROWROE WEST (Ballymoe By.)	550309	757957	Ringfort - rath	T07	3742
110	GA018-062—	TIMARD	559280	758442	Ringfort - rath	T02	3782
111	GA018-062001-	TIMARD	559280	758442	Children's burial ground	T02	3782
112	GA030-121—	RYEHILL	550961	753830	Ringfort - rath	T08	3825
113	GA030-006—	BALLYNAMONA (Dunmore By.)	550005	756897	Ringfort - rath	T07	3833

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
114	GA018-011—	CLOONMORE (Ballymoe By.),CLOONNACAT	557020	761021	Boundary mound	T02	3941
115	GA017-099—	GORTEEN (Carrownagur ED)	552407	760586	Quarry	T01	3944
116	GA030-131—	CARROWROE WEST (Ballymoe By.)	549930	757281	Enclosure	T07	3946
117	GA017-100—	GORTEEN (Carrownagur ED)	552332	760575	Ringfort - rath	T01	3985
118	GA030-029—	CARROWROE WEST (Ballymoe By.)	549836	757039	Ringfort - rath	T07	4011
119	GA018-058—	PARK WEST	559367	758879	Castle - tower house	T02	4014
120	GA018-058001-	PARK WEST	559367	758879	Bawn	T02	4014
121	GA030-133—	KNOCKALOURA EAST	549722	756381	Enclosure	T07	4123
122	GA017-053—	CARROWNTRYLA	551550	760147	Designed landscape - tree-ring	T07	4137

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
123	GA030-109—	POLLAPHUCA (Carrowrevagh ED)	550042	754855	Ringfort - rath	T08	4160
124	GA030-109001-	POLLAPHUCA (Carrowrevagh ED)	550042	754855	Structure	T08	4160
125	GA018-043—	CLOONMORE (Ballymoe By.),CLOONNACAT,LISHEENNAHELTIA	557073	761257	Boundary mound	T02	4181
126	GA030-031—	CARROWROE WEST (Ballymoe By.)	549735	757714	Ringfort - rath	T07	4222
127	GA018-010001-	CLOONNACAT	558311	760661	Children's burial ground	T02	4260
128	GA018-010002-	CLOONNACAT	558311	760661	Mound	T02	4260
129	GA030-082—	KNOCKALOURA EAST	549572	756182	Enclosure	T07	4292
130	GA018-055—	PARK EAST	559478	759405	Quarry	T02	4343
131	GA017-051—	CARROWNTRYLA	551141	760132	Enclosure	T07	4364

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
132	GA017-051001-	CARROWNTRYLA	551139	760131	Burial	T07	4364
133	GA017-051002-	CARROWNTRYLA	551140	760132	Building	T07	4364
134	GA030-032—	CARROWROE WEST (Ballymoe By.)	549612	757822	Enclosure	T07	4368
135	GA017-067—	CARROWROE WEST (Ballymoe By.)	549716	758280	Ringfort - rath	T07	4411
136	GA030-028—	CARROWROE WEST (Ballymoe By.)	549456	757358	Ringfort - rath	T07	4426
137	GA030-028001-	CARROWROE WEST (Ballymoe By.)	549456	757358	Souterrain	T07	4426
138	GA017-050001-	CARROWNTRYLA	551399	760415	Children's burial ground	T07	4444
139	GA017-050—	CARROWNTRYLA	551399	760416	Ringfort - rath	T07	4444

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
140	GA017-049—	CARROWNTRYLA	551521	760578	Enclosure	T07	4517
141	GA044-036—	CLOONDAHAMPER (Blake),CLOONDAHAMPER (Brown)	555189	751258	Redundant record	T10	4574
142	GA030-078—	KNOCKALOURA EAST	549198	756783	Ringfort - rath	T07	4636
143	GA030-078001-	KNOCKALOURA EAST	549198	756784	House - indeterminate date	T07	4636
144	GA030-024—	CARROWNTANLIS	549292	757682	Cairn - unclassified	T07	4646
145	GA044-076—	LISNAMINAUN	553672	751198	Enclosure	T09	4661
146	GA017-038—	CARROWKEELANAHGLASS	554701	762251	Fulacht fia	T01	4673
147	GA030-079001-	KNOCKALOURA EAST	549169	756033	Souterrain	T07	4711
148	GA030-079002-	KNOCKALOURA EAST	549169	756033	House - indeterminate date	T07	4711

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
149	GA030-079—	KNOCKALOURA EAST	549169	756032	Ringfort - rath	T07	4711
150	GA017-048—	CARROWNTRYLA	551570	760861	Ringfort - rath	T01	4719
151	GA030-026—	CARROWREVAGH MORE	549218	757896	Ringfort - rath	T07	4768
152	GA017-008005-	ADDERGOOLE MORE	552643	761785	Cross-slab	T01	4800
153	GA017-008004-	ADDERGOOLE MORE	552632	761793	Children's burial ground	T01	4812
154	GA030-080—	CARTRON (Carrowrevagh ED),KNOCKALOURA EAST	549063	756018	Ringfort - cashel	T07	4818
155	GA017-008003-	ADDERGOOLE MORE	552646	761808	Enclosure	T01	4819
156	GA017-008006-	ADDERGOOLE MORE	552638	761804	Cross-inscribed stone	T01	4819
157	GA017-008007-	ADDERGOOLE MORE	552638	761805	Cross-slab	T01	4820

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
158	GA017-008002-	ADDERGOOLE MORE	552628	761800	Church	T01	4820
159	GA017-008001-	ADDERGOOLE MORE	552638	761827	Ecclesiastical enclosure	T01	4839
160	GA031-030—	DERREEN UPPER	560489	756747	Ringfort - rath	T02	4854
161	GA030-025—	CARROWNTANLIS,CARROWREVAGH MORE	549086	757781	Enclosure	T07	4869
162	GA030-083—	KNOCKALOURA WEST	548964	756978	Barrow - unclassified	T07	4877
163	GA030-034—	CARTRON (Carrowrevagh ED)	549287	754775	Ringfort - rath	T08	4904
164	GA030-034001-	CARTRON (Carrowrevagh ED)	549287	754775	Souterrain	T08	4904
165	GA030-033—	CARTRON (Carrowrevagh ED)	549007	755768	Enclosure	T07	4915
166	GA030-081001-	KNOCKALOURA EAST	548952	756053	House - indeterminate date	T07	4923
167	GA030-081—	KNOCKALOURA EAST	548952	756052	Ringfort - rath	T07	4923

MAP ID	SMR	TD.	ITM E	ITM N	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)
168	GA017-056—	CARROWPADEEN EAST	550569	760387	Ringfort - rath	T07	4926
169	GA017-037—	CARROWKEELANAHGLASS	554091	762441	Ringfort - rath	T01	4934
170	GA031-029—	DERREEN UPPER	560599	757088	Ringfort - rath	T02	4936
171	GA030-087—	KNOCKALOURA WEST	548857	756726	Ritual site - holy/saint's stone	T07	4976

13.3.3.4.1 The Prehistoric Period

The prehistoric period is represented by a low number of monuments (3) which comprise an unclassified barrows (1), an unclassified cairn (1), and a fulacht fia (1).

Various types of barrow are known in the archaeological record and include bowl barrows, mound barrows, ring barrows and ditch barrows. Ring Barrows are a circular or oval raised area (generally up to 1m above the external ground level or level with it) enclosed by fosse(s) and outer bank(s), with or without an entrance. They are part of the Bronze/Iron Age burial tradition (c. 2400 BC - AD 400).

Various types of cairn also exist in the archaeological record including burial cairns, unclassified cairns and roadside cairns. Burial cairns consist of a mound constructed primarily of stone which covers a burial or burials. The term cairn is derived from the Irish work 'carn' meaning a heap or pile of stones. They can date to any period from prehistory onwards.

Fulacht fia comprise a horseshoe-shaped or kidney-shaped mound consisting of fire-cracked stone and charcoal-enriched soil built up around a sunken trough located near or adjacent to a water supply, such as a stream or spring, or in wet marshy areas. The first recorded use of the Irish term 'fulacht fiadh/fia' (cooking pit of the deer or of the wild) as relating to ancient cooking sites was in the 17th century. These are generally interpreted to have been associated with cooking and date primarily to the Bronze Age (c. 2400-500 BC).

The monuments dating to the prehistoric period are located at distances of between 4.6km-4.8km from the nearest proposed turbines, T1 and T7.

13.3.3.4.2 The Early Medieval Period

The Early Medieval period is the most well represented period within the 5km study area. It is represented by enclosures and ringforts (including cashels), a crannog and souterrains which account for 105 of the 171 monuments within 5km of the nearest proposed turbine. Enclosures consist of an area defined by an enclosing element (e.g. bank, wall, fosse, scarp), or indicated as such cartographically, and occurring in a variety of shapes and sizes, possessing no diagnostic features which would allow classification within another monument category. These may date to any period from prehistory onwards. Enclosures with a diameter greater than 70m should be classed as Large Enclosure. Ringforts are a roughly circular or oval area surrounded by an earthen bank with an external fosse. Some examples have two (bivallate) or three (trivallate) banks and fosses, but these are less common and have been equated with higher status sites belonging to upper grades of society. They functioned as residences and/or farmsteads and broadly date from 500 to 1000 AD. Crannógs consist of an island, partly or wholly artificial, built up by dumping timber, earth and stones onto a lake or river bed, often revetted with timber piles or a palisade. Derived from the Irish word 'crannóg'; the Irish word for tree is 'crann' and 'crannóg' principally means a piece of wood or a structure of wood. They date from the 6th to the 17th century AD. Souterrains are associated with ringforts and enclosures and comprise an underground structure consisting of one or more chambers connected by narrow passages or creepways, usually constructed of drystone-walling with a lintelled roof over the passages and a corbelled roof over the chambers. Most souterrains appear to have been built in the early medieval period by ringfort inhabitants (c. 500 - 1000 AD) as a defensive feature and/or for storage. The ringforts and enclosures in the study area are located at distances ranging between 20m and 4.9km from the nearest proposed turbine and include the enclosure (GA030-073—) located within the Proposed Wind Farm Site.

13.3.3.4.3 Medieval Period

At least 7 no. monuments within 5km of the nearest proposed turbine may be attributed to the medieval period. They include tower houses, bawns and unclassified castles.

Unclassified castles comprise a castle that cannot be more precisely classified. They can date from the late 12th to the 16th century AD.

Tower houses were a later development, primarily dating to the 15th and 16th centuries. They comprise a fortified residence in the form of a tower, usually four or five storeys high, and for the most part slightly more rectangular than square in plan. They were constructed by a lord or landholder and were often partially or completely enclosed by a bawn. The majority date to the 15th and 16th centuries AD.

The nearest of the castles and tower houses comprises GA030-042— at Claddagh West which is located c. 1.2km from the nearest proposed turbine, T8. It comprises a poorly preserved structure, however, with only grassed-over foundations and fragmentary remains of some walls extant.

13.3.3.4.4 Monuments with Religious Associations

At least 31 no. monuments within 5km of the nearest proposed turbine have religious associations and may date to a number of time periods. The monuments comprise churches, graveyards, burial grounds, burials, ecclesiastical enclosures, children's burial grounds, holy wells, cross slabs and a saint's stone. Some of these monuments are found near to or in association with each other and the nearest of these comprises a church, graveyard and ecclesiastical enclosure at Kilmurry townland c. 720m north-west the nearest proposed turbine, T1. This monument was visited as part of the walk-over survey and only the foundations and a low wall of the church now survive above-ground here (Plate 13-3). The monument is described on the HEV as follows:

GA017-121001- : Church : KILMURRY (Ballymoe By.)
Description: Within an early ecclesiastical enclosure (GA017-121003-). Marked on 1st ed. of OS 6-inch map as a roofed rectangular structure but named as 'in Ruins'. All that survives are the partially overgrown foundations of a rectangular building (E-W; L 23.2m, Wth 8.25m). Neary (1914, 124, no. 98) mentions the presence of 'a large doorway in the middle of the N. wall' but a field wall now overlies this and its position was not located. All that is visible of E gable is a grassed-over foundation line, outside of which is a large pile of rubble. Only E end of S wall can be traced, though a short length of wall, running N-S, appears to overlie its line at W end. The W gable (Wth 1m, H 2.1m int.) is the best preserved and is rendered internally. Traces of an internal division are visible towards W end, to W of which the floor level drops by 0.3m. The above description is derived from the published 'Archaeological Inventory of County Galway Vol. II - North Galway'. Compiled by Olive Alcock, Kathy de hÓra and Paul Gosling (Dublin: Stationery Office, 1999). Date of upload: 05 August 2010.

Plate 13-3: Ruins of church GA017-121001- at Kilmurry, looking W.

Plate 13-4: As above, looking E.

The church at Kilmurry is located within an ecclesiastical enclosure GA017-121003-. Ecclesiastical enclosures comprise a large oval or roughly circular area, usually over 50m in diameter, defined by a bank/banks and external fosse/fosses or drystone wall/walls, enclosing an early medieval church or monastery and its associated areas of domestic and industrial activity. They date to the early medieval period (5th-12th centuries AD). The enclosure at Kilmurry is described on the HEV as follows:

GA017-121003- : Ecclesiastical enclosure : KILMURRY (Ballymoe By.)
Description: In open low-lying farmland on W edge of an extensive bog. Probably the site of a small medieval monastery, either Franciscan or Dominican (Gwynn and Hadcock 1970, 233, 279; Knox 1902a, 401; 1903, 293; Neary 1914, 124-5, no. 98). It consists of a poorly preserved subcircular enclosure (E-W >88m), the E half of which is cut across by a boreen running roughly N-S. To E of the boreen, a curving scarp (H 0.7m) defines the enclosure from N to E. A curving depression (Wth 8m) at S and the short arc of a bank at W may indicate its continuation to W of the boreen. No definite trace of the 'segment of the old cashel wall or bank' noted by Neary (ibid., 124) '70 yards [64m] N.W.' of the church was found, though there is a straight stretch of a substantial bank (Wth 4m) 45m to W. The church (GA017-121001-) itself lies in W part of the interior. The OS Letters (O'Flanagan 1927, Vol. 1, 103-4) refer to this site as a small graveyard but no visible surface trace of such now survives. However, Neary (ibid.) mentions that 'Bones were dug up in quantities on N. side' of the church. The above description is derived from the published 'Archaeological Inventory of County Galway Vol. II - North Galway'. Compiled by Olive Alcock, Kathy de hÓra and Paul Gosling (Dublin: Stationery Office, 1999). Date of upload: 05 August 2010

Holy wells comprise a well or spring, though in some unusual cases a natural rock basin, which usually bears a saint's name and is often reputed to possess miraculous healing properties. These may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards. Holy trees are often found in association with holy wells. They comprise a named tree or bush, sometimes associated with a particular saint, often considered to have miraculous properties. They are generally found in close proximity to holy wells and formed part of the associated patterns or rounds performed on certain days. They are known in Irish as 'bile', which translates as sacred tree, sometimes corrupted into the English words 'bell' or bellow'. These may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards.

Children's burial grounds, of which there are ten (10), comprise an area of unconsecrated ground for the interment of unbaptised or stillborn children, often known under various Irish names: Cillín, Caldragh, Ceallúnach or Calluragh. The graves were generally marked by simple, low, upright stones or slabs almost invariably without any inscription or other carving. This burial practice may be medieval in origin and continued in Ireland until the 1960s. The nearest children's burial ground GA030-040001- is situated c. 1.4km south-west of T8.

13.3.3.4.5 Post Medieval Period

At least eleven (11) monuments which may be attributed to the post-medieval period are located within 5km of the nearest proposed turbine. They include a designed landscape feature (tree ring), quarries, a lime kiln and boundary mounds. The nearest of these monuments comprise three boundary mounds (GA030-044—, GA030-077— and GA030-045—) which are located 145m, 251m and 397m from the nearest proposed turbines (T3 and T10), respectively. Boundary mounds comprise a mound constructed primarily of earth located on or near a known boundary. They date from the 19th century onwards. The examples cited above are all located in cut-over bog.

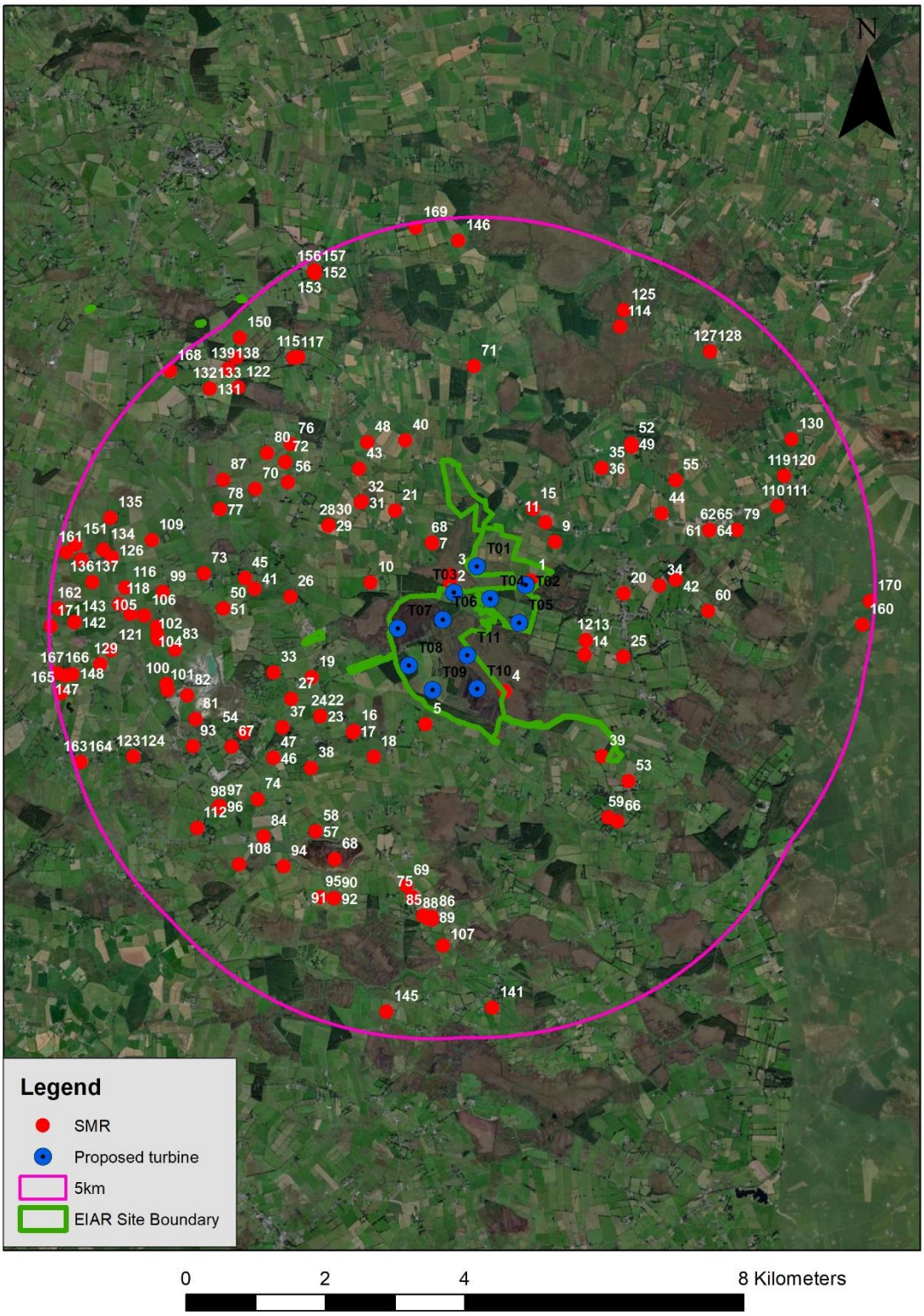

Figure 13-8: Recorded monuments within 5km of the nearest proposed turbine.

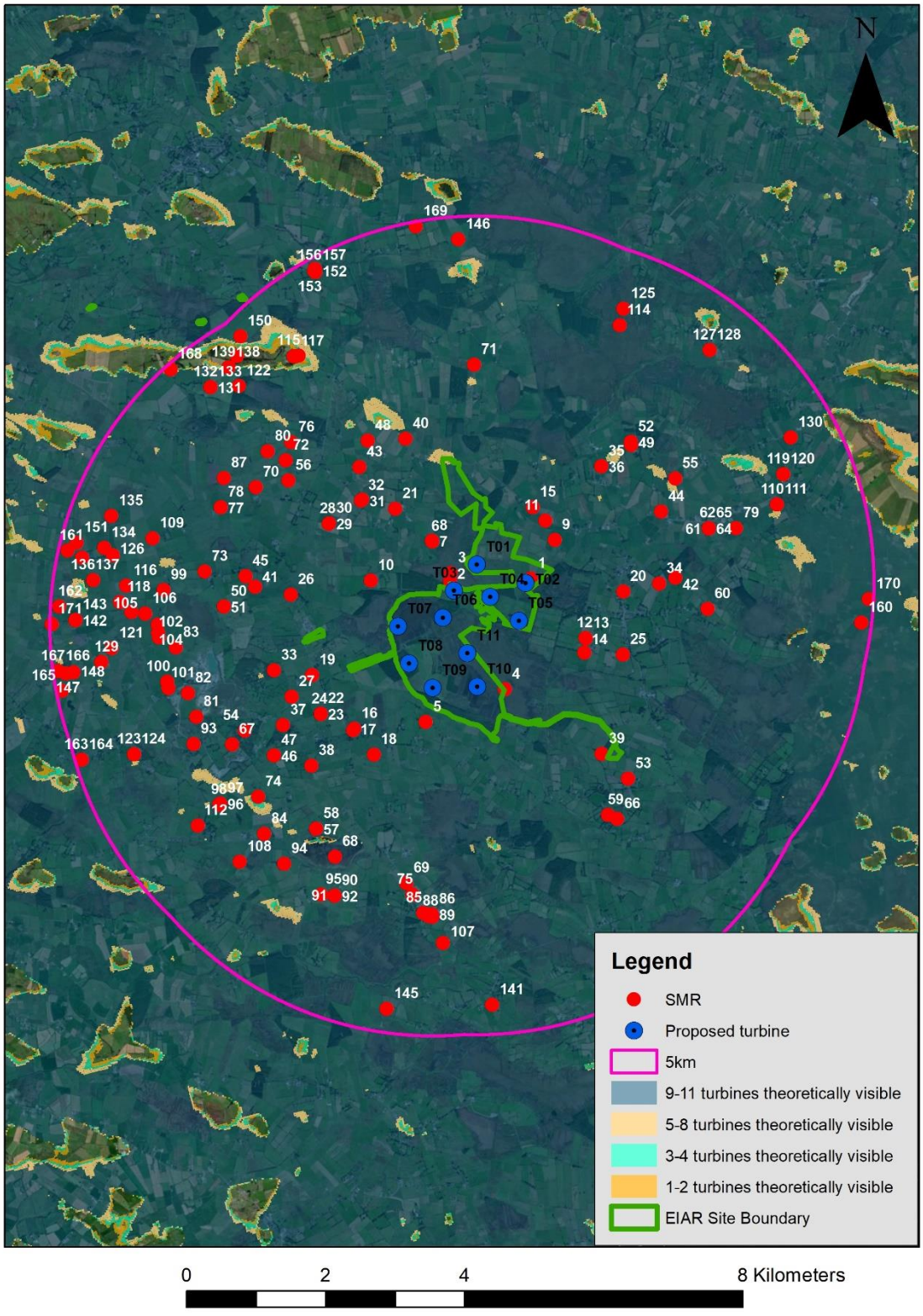

Figure 13-9: Recorded monuments within 5km of the nearest proposed turbine with ZTV.

13.3.3.5 Excavations Database

The database of excavations carried out in Ireland (www.excavations.ie) was consulted for any such licensed work which took place on or adjacent to the Proposed Wind Farm Site. Two entries were returned for Lisseybroder townland, neither of which were of any archaeological significance.

2005:620 - LISSEYBRODER, Galway
County: Galway Site name: LISSEYBRODER
Sites and Monuments Record No.: N/A Licence number: 05E0812
Author: Martin E. Byrne, Byrne Mullins & Associates, 7 Cnoc na Gréine Square, Kilcullen, Co. Kildare.
Site type: No archaeological significance
Period/Dating: –
ITM: E 529516m, N 724990m
Testing was carried out on 22 July 2005 at a single house site at Lissybroder, Dunmore. The site is located on the western side of the Dunmore–Mountbellew road, c. 1.2km south-east of Dunmore. There is a possible late 17th-century hermitage site (SMR 17:138) located to the west, but no visible surface traces of this site survive and its exact location is unclear.
Five trenches were excavated by machine fitted with a toothless ditching/grading bucket, following which the sides and bases were cleaned by hand. Nothing of archaeological interest was uncovered.

2008:567 - Lissybroder, Galway
County: Galway Site name: Lissybroder
Sites and Monuments Record No.: GA017–137 Licence number: 08E0329
Author: Rory Sherlock, 73 Churchfields, Lower Salthill, Galway.
Site type: Adjacent to ringfort
Period/Dating: –
ITM: E 551335m, N 761812m
A series of three test-trenches, totalling 48m in length, were excavated on the site of a proposed house and associated services at Lissybroder, Dunmore, due to the presence of a levelled ringfort nearby. No features of archaeological interest were found and a 10m buffer zone was established around the site of the ringfort so that the development could proceed without impacting upon the monument.

13.3.3.6 Topographical Files of the National Museum of Ireland

The topographical files of the National Museum of Ireland on www.heritagemaps.ie were consulted for archaeological finds from the townlands within or adjacent to the Proposed Wind Farm Site. No finds are recorded within the Proposed Wind Farm Site with the nearest shown on www.heritagemaps.ie being located c. 2.3km to the south-east of T10 and comprising a rotary quernstone which was found in Ballyedmond townland.

National Museum Point: Upper Rotary Quernstone
Name 1972:89
Object Type Upper Rotary Quernstone

13.3.3.7 Sub-Surface Archaeological Potential

Due to the extent of groundworks associated with the construction phase of the Proposed Wind Farm, the greenfield and bogland nature of the Proposed Wind Farm Site and the presence of a recorded monument within same, it is possible that previously unrecorded sub-surface archaeological finds, features or deposits are located within the Proposed Wind Farm Site. Bogs, both raised bogs and upland blanket peat, are regarded as areas of archaeological potential and may contain archaeological sites and finds both within and beneath the peat. The potential therefore exists that sub-surface archaeological sites or features, if present within the Proposed Wind Farm Site, may be directly affected

by construction phase activities. Mitigation measures to ameliorate this potential effect are detailed in Section 13.4 below.

13.3.3.8 Archaeological Landscapes

Section 12.6.12 of Galway CDP states the following in relation to archaeological landscapes:

'*ARC 3 Archaeological Landscapes To facilitate where possible the identification of important archaeological landscapes in the County.*

ARC 4 Protection of Archaeological Sites Protect archaeological sites and monuments their settings and visual amenity and archaeological objects and underwater archaeological sites that are listed in the Record of Monuments and Places, in the ownership/guardianship of the State, or that are subject of Preservation Orders or have been registered in the Register of Historic Monuments, or that are newly discovered and seek to protect important archaeological landscapes.'

No archaeological landscapes have been formally identified or designated in the CDP.

13.3.3.9 Protected Structures within 5km of the nearest proposed turbine

No Protected Structures are located within the Proposed Wind Farm Site.

A total of 6 no. protected structures are located within 5km of the nearest proposed turbine. They are shown on Figure 13-13 and listed in Table 13-6. The ZTV shows that all of the structures are located in areas where 9-11 turbines will theoretically be visible (Figure 13-14).

The nearest protected structure comprises a farmyard complex (Ref. 3995) in Clonberne townland c. 933m to the south-east of T2.

3995	30403106	Clonbern Park	U-plan yard of farm buildings, built c.1840, having multiple-bay two-storey stable block.	Though ruinous, this well-appointed former stableyard has stonework and detailing of impressive quality. The multiple vehicular arches indicate the wealth of the former Clonbern House, as do details such as the oculus over the main entrance.	Tuam	CLONBERN	X:156542 Y:256878	

Figure 13-10: Extract from Galway CDP RPS showing entry for farmyard complex Ref. 3995.

The graveyard (Ref. 41) and mausoleum (Ref. 40) at Clonberne c. 1km south-east of T5 are also protected structures.

41	30403110	Clonbern Old Graveyard	Ancient enclosed graveyard containing church site and various headstone and mausolea of various dates including the Egan mausoleum dated 1806 and the cast iron Dennis Mausoleum,.	Regional value on account of the age of the site and because it contains many examples of gravestones and mausolea. The graveyard is a significant landscape feature.	Tuam	CLONBERN	X:156620 Y:256450	

Figure 13-11: Extract from Galway CDP RPS showing entry for Clonberne Old Graveyard (Ref. 41).

40	30403109	Dennis Mausoleum	Freestanding cast-iron cylindrical mausoleum modelled on the Chronic monument of Lysicrates in Athens. Erected for Colonel Maurice Dennis of Bermingham House, c1865. Set in ancient churchyard.Now in poor repair.	Regional value because of its design quality, unusual form, use of materials and picturesquely setting.	Tuam	CLONBERN	X:156570 Y:256490	

Figure 13-12: Extract from Galway CDP RPS showing entry for Dennis Mausoleum (Ref. 40).

Plate 13-5: Dennis mausoleum (RPS Ref. 40), looking NW.

Table 13-6: RPS structures within 5km of the nearest proposed turbine.

RPS ID	NIAH REG.	STRUCTURE	LOCATION	ITM E	ITM N	TURBINE	DISTANCE TO TURBINE (m)
3995	30403106	Farmyard complex	CLONBERNE	556501	756899	T02	933
40	30403109	Mausoleum	Clonberne Old Graveyard	556529	756511	T05	997
41	30403110	Graveyard	Clonberne Dunmore	556579	756471	T05	1056
39	30403108	Church	Clonberne Dunmore	557309	756921	T02	1688
3893	30403111	House	CAPPANTRUHAUN	557576	756481	T05	2029
3898	30403008	Church	CAPPADAVOCK	552733	753756	T09	2605

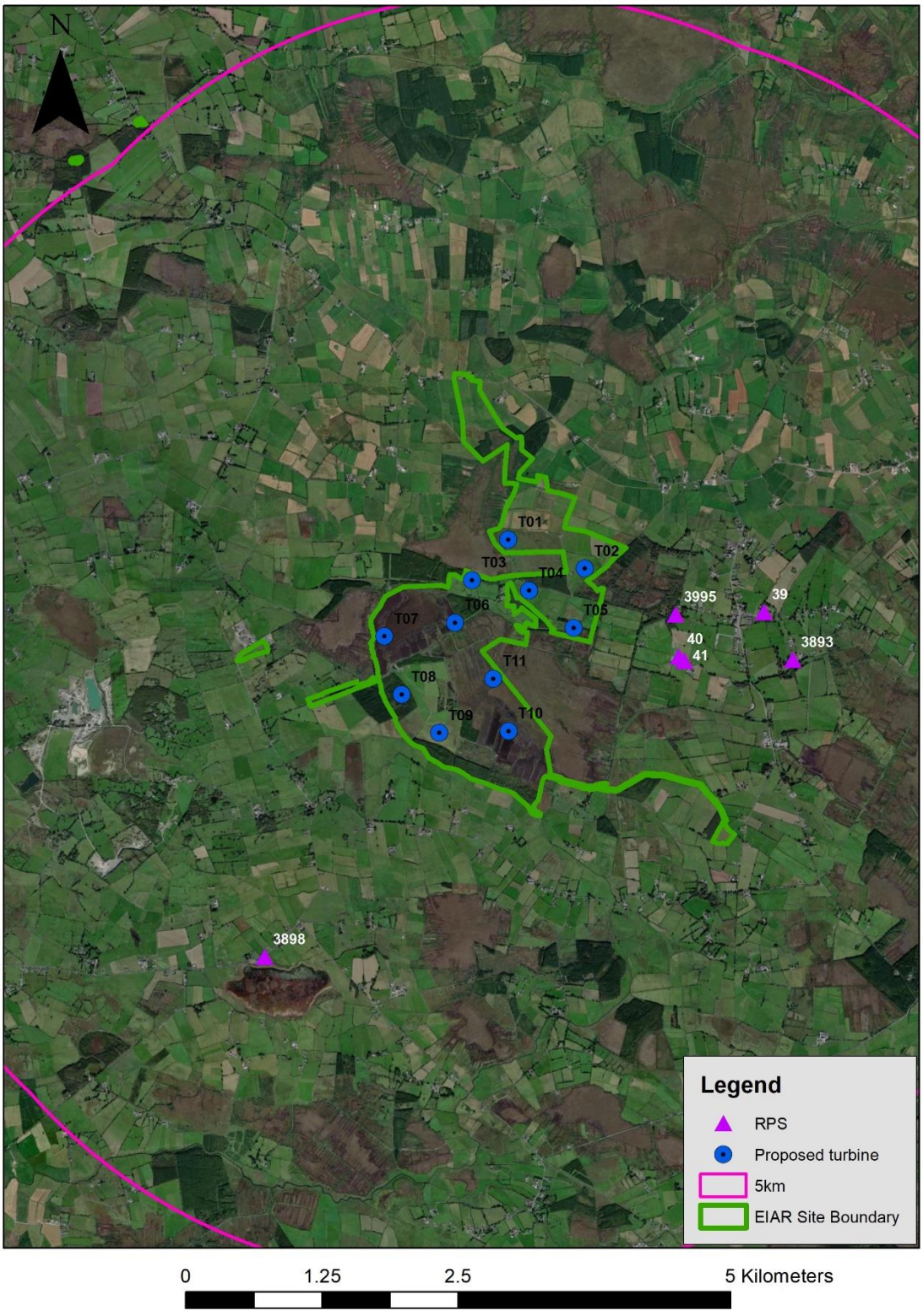

Figure 13-13: Protected structures within 5km of the nearest proposed turbine.

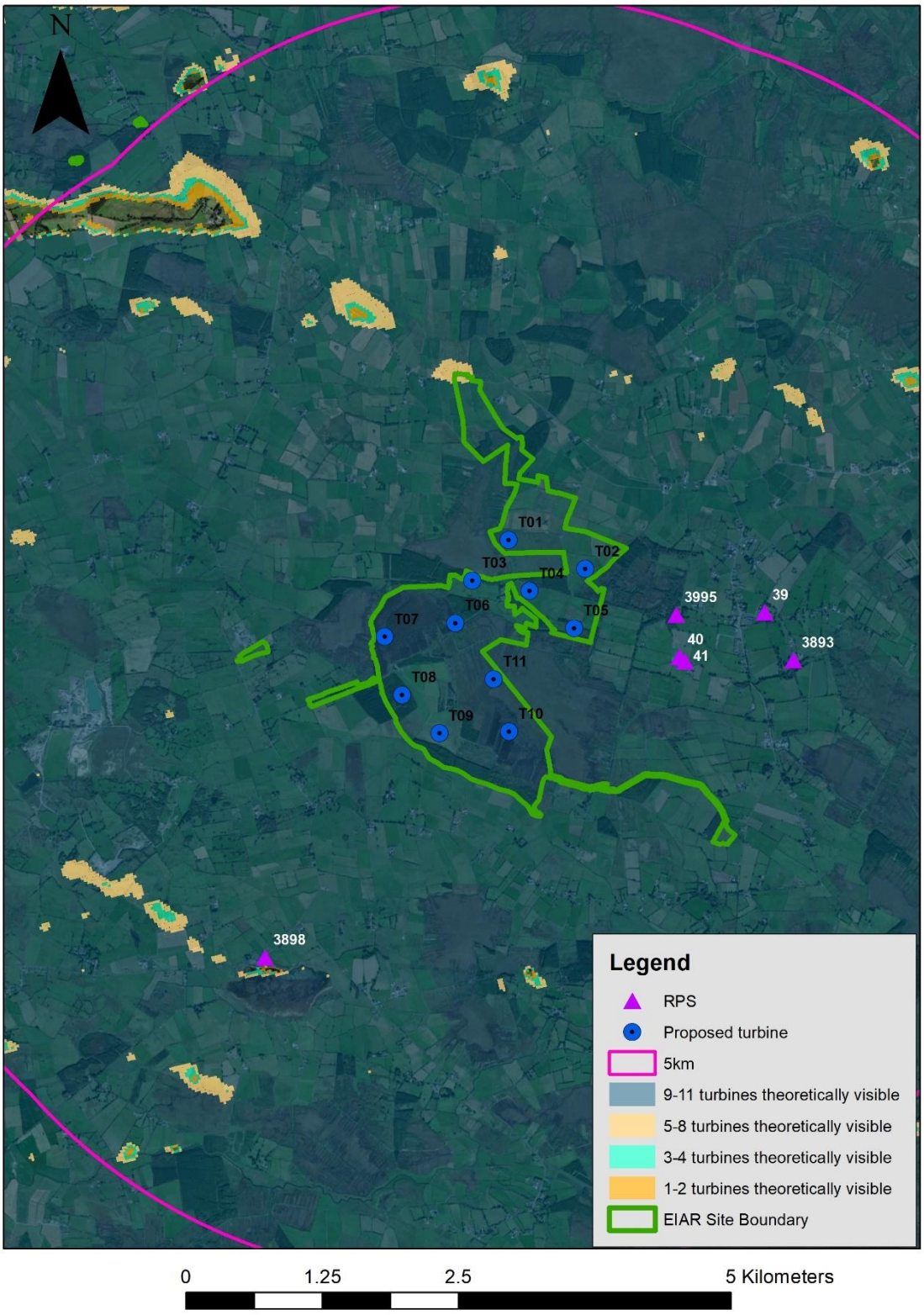

Figure 13-14: Protected structures within 5km of the nearest proposed turbine with ZTV.

13.3.3.10 NIAH Structures and Historic Gardens within 5km of the nearest proposed turbine

No NIAH structures are located within the Proposed Wind Farm Site.

Five structures listed in the NIAH are located within 5km of the nearest proposed turbine, many of which are also listed in the RPS (see Section 13.3.3.9 above). They are listed in Table 13-7 and shown in Figure 13-15 below. The nearest structure (Reg. 30403106) is part of the farmyard complex which is also a protected structure (Ref. 3995) located c. 937m to the south-east of the nearest proposed turbine, T2. The ZTV demonstrates theoretical visibility of all of the NIAH structures (Figure 13-16).

The farm buildings are described on www.buildingsofireland.ie as follows:

Description
U-plan yard of farm buildings, built c.1840, having multiple-bay two-storey stable block. Remains of pitched slate roof with limestone eaves course and coursed rubble limestone walls. Rear wall, which faces public road, has only ventilation slits. Yard elevation has square-headed window openings to first and ground floors, and segmental-arch vehicular arches to ground floor with dressed voussoirs. Entrance archway to yard has oculus above with raised surround, set within square frame.

Appraisal
Though ruinous, this well-appointed former stableyard has stonework and detailing of impressive quality. The multiple vehicular arches indicate the wealth of the former Clonbern House, as do details such as the oculus over the main entrance.

Plate 13-6: Farm complex/outbuildings (Reg. 30403106) (photo courtesy of www.buildingsofireland.ie).

Three historic gardens are located within 5km of the nearest proposed turbine (Table 13-8 and Figure 13-15). Some of these are associated with the NIAH structures listed in Table 13-7, while others may have no surviving associated structures. Similarly, in some instances there may be no surviving garden features. The nearest historic garden comprises that associated with Clonbern Lodge, less than 1km from the nearest proposed turbine, T5.

Table 13-7: NIAH sites within 5km of the nearest proposed turbine.

NIAH Reg.	Date	Structure]	Townland	ITM E	ITM N	Turbine No.	Distance To Turbine (m)
30403106	1830 - 1850	Outbuilding, Clonbern Park	CLONBERNE	556503	756893	T02	937
30403109	1850 - 1880	Mausoleum	CLONBERNE	556519	756531	T05	981
30403110	1860 - 1865	Mausoleum	CLONBERNE	556542	756498	T05	1013
30403111	1810 - 1830	Derrynabuie House	CAPPANTRUHAUN	557579	756473	T05	2033
30403008	1945 - 1950	Catholic Church of Our Lady and Saint Jarlath	CAPPADAVOCK	552840	753830	T09	2481

Table 13-8: Historic gardens located within 5km of the nearest proposed turbine.

Site Name	ITM E	ITM N	Turbine No.	Distance To Turbine (m)
Clonbern Lodge	556560	756722	T05	993
Derrynabuie	557560	756422	T05	2023
Carrowntryla House	551161	760221	T07	4422

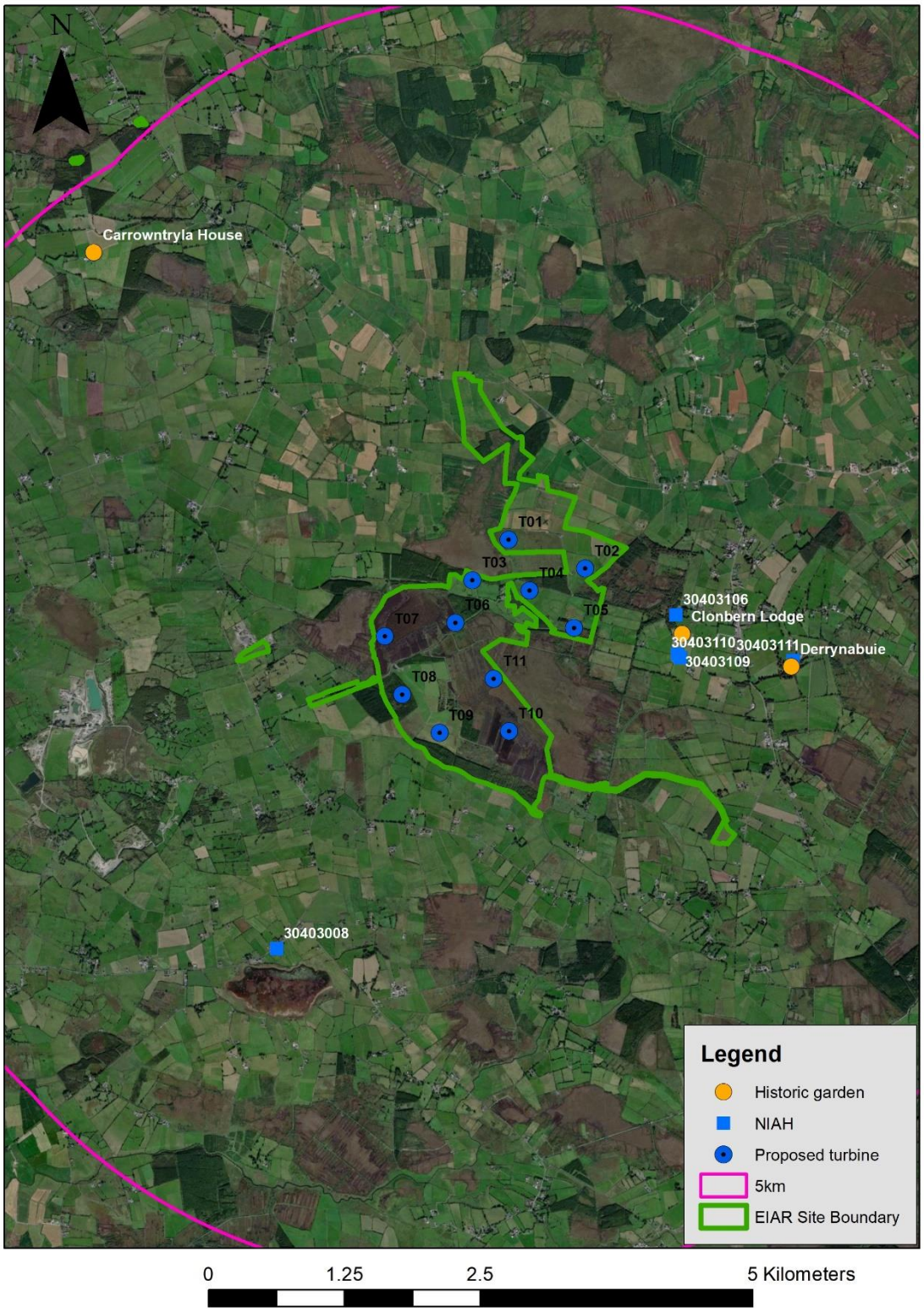

Figure 13-15: NIAH structures and historic gardens within 5km of the nearest proposed turbine.

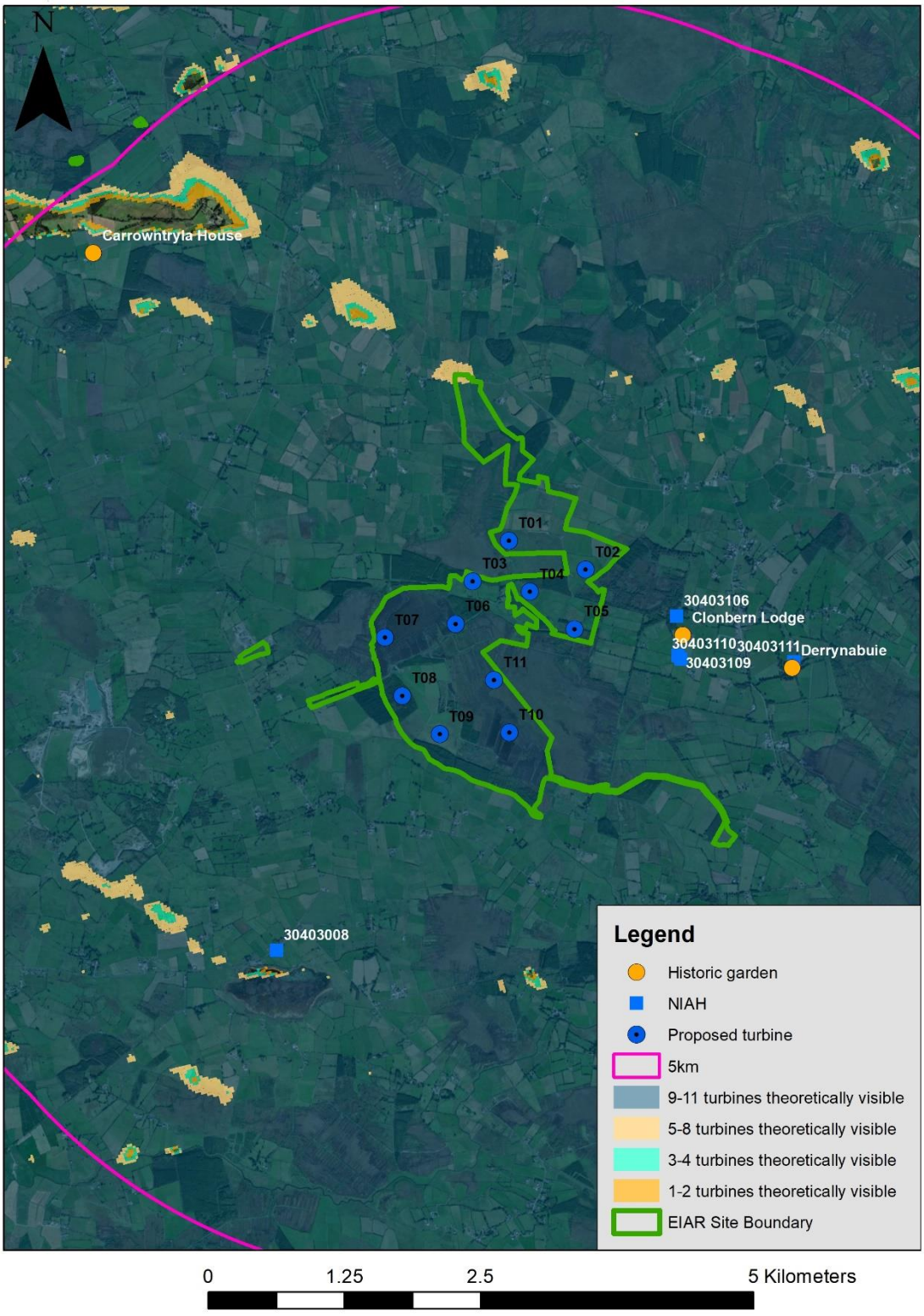

Figure 13-16: NIAH structures and historic gardens with ZTV.

13.3.3.11 Cartographic Evidence and Local Cultural Heritage

The available historic Ordnance Survey maps were consulted for any items of cultural heritage merit that may be located within the Proposed Wind Farm Site. Field survey also assisted in determining if any local cultural heritage features were located in the vicinity of any Proposed Wind Farm infrastructure.

The Ordnance Survey came to Ireland in 1824 in order to carry-out a precise admeasurement of the country's 60,000 or so townlands as a preliminary to the larger task of reforming Ireland's local taxation system. The townland boundaries were demarcated by a Boundary Commission, and the Ordnance Survey had the task of measuring them. In addition to boundaries the maps are truly topographical in content. Drawn at the large scale of six inches-to-one-mile (1:10,560) it was important to mark all buildings, roads, streams, placenames, etc, that were required for valuation purposes. Ultimately the maps were used as a basis for the rateable valuation of land and buildings in what became known as Griffith's Valuation. Working from north to south, the survey began in Antrim and Derry in 1829 and was completed in Kerry in 1842. It was published as thirty-two county maps between 1832 and 1846, the number of sheets per county varied from 153 for County Cork to 28 for Dublin, each of the 1,994 sheets in the series depicting an area 21,000 by 32,000 feet on the ground. Each county was projected on a different central meridian and so the maps of adjacent counties do not fit neatly together at the edges. Map content stops at the county lines. The early Ordnance Survey maps are an unrivalled source for the period immediately before the Great Irish Famine (1847-50) when the population was at the highest level ever recorded in Ireland.

The first edition map (1829-41) for the area of the Proposed Wind Farm Site shows some areas around the open bog land divided into fields for agricultural purposes. Consequently, some small structures are depicted within the Proposed Wind Farm Site and are likely to have been small settlements. Other features denoted within the Proposed Wind Farm Site comprise lime kilns, which would have been associated with agricultural practices of the 19th century. The Proposed Wind Farm Site currently largely comprises cut-over bog with improved pasture, rough pasture and small portions of coniferous forestry around same. No surface trace of any structures or lime kilns denoted on the first edition historic mapping were visible at the time of field survey for this assessment. It is likely that modern agricultural practices and land improvement has resulted in the removal of these features some time in the late 19th or early 20th century.

13.3.3.12 Townlands and administrative boundaries

Townlands and administrative boundaries may indicate the presence of archaeological features within a development site. Administrative counties are subdivisions of pre-established counties which were formed for administrative purposes in the nineteenth and twentieth centuries. Baronies are administrative units larger than civil parishes and originally established as the primary subdivision of counties by the British administration in Ireland. Irish baronies which were formed at the time of the Norman conquest were usually named either after Irish territories, or from places which had been of importance in pre-Norman times. Irish baronies came into existence at different periods. The division of Ireland into counties and baronies was a process which continued down to the reign of James I. The original baronies in Ireland were the domains of the Norman barons; in the final stage of development they were divisions of counties created merely for greater convenience of administration. The word barony is of feudal origin, and was applied to a tenure of a baron, that is, of one who held his land by military service, either directly from the king, or from a superior feudal lord who exercised royal privileges. The origin of the Irish barony (a division of land corresponding to the English hundred) is to be found in the grants of lands which were made to the barons of Leinster and the barons of Meath (Liam Price, 'Ráith Oinn', Éigse VII, lch. 186-7). Civil parishes are administrative units larger than townlands and based on medieval ecclesiastical parishes. Civil parishes, modern Catholic parishes and Church of Ireland parishes may differ in extent and in nomenclature. Counties are administrative units larger than baronies and originally established by the British administration in Ireland between the twelfth and the seventeenth centuries. Some of these were subsequently subdivided into smaller administrative county units.

Townlands are the smallest land units which were determined and established in the Irish administrative system in the first half of the nineteenth century. Many of the townlands were in existence prior to that. As the Proposed Wind Farm Site is located across a number of townlands, townland boundaries between same are also present. Proposed Wind Farm infrastructure crosses the townland boundaries in a number of places. In some cases the townland boundaries will comprise field boundaries which continue to act as field or land divisions.

Townland names are a valuable source of information, not only on the topography, land ownership and land use within the landscape, but also on its history, archaeological monuments and folklore. Logainm.ie was utilised to ascertain the origin of the townland names within the Site (Table 13-9).

Table 13-9: Townlands within the Site and their meanings.

Townland	Logainm Meaning
CLONBERN (Cluain Bheirn)	Meadow, pasture
CLOONARKAN (Cluain Earcáin)	Meadow or pasture of the piglet
GORTAGARRAUN (Gort an Gharráin)	Field, grove
KILLAVOHER (Coill an Bhóthair)	Wood of the road
LAUGHIL (An Leathchoill)	Half, side
LISSYBRODER (Lios Uí Bhruadair)	Bruadair's fort?
CARROWNTRYLA (Ceathrú an Traighle)	The quarterland of ?" The meaning of Traighle is unclear
BALLAGH WEST (An Bealach Thiar)	The rathe of the Ballaghe
LOMAUNAGHROE (Lománach Rua)	Red place?

13.3.4 Proposed Grid Connection

The Proposed Grid Connection comprises the proposed onsite 220kV electrical substation and 220kV underground grid connection cabling (measuring approximately 2.8km in length) which will connect to the existing 220kV overhead line in the townland of Laughil. The grid connection works will include the provision of 2 no. new interface towers to facilitate the connection to the existing overhead line in the townland of Laughil.

Cultural heritage assets within 100m of either side of the Grid Connection underground electrical cabling route outside the Proposed Wind Farm Site are included in the assessment in order to ascertain any potential effects and any required mitigation measures to alleviate or minimise such effects if identified. A photographic record of the Proposed Grid Connection underground electrical cabling route is presented in Appendix 13-1. Due to the nature of the proposed works associated with the Grid Connection underground cabling, a 100m study area either side of the route is considered appropriate for the assessment of potential effects.

13.3.4.1 National Monuments

No National Monuments in State Care or those subject to a preservation order are located within 100m of the underground electrical cabling route and associated infrastructure, or in the footprint of the proposed onsite substation.

13.3.4.2 Recorded Monuments

No recorded monuments are located within 100m of the proposed underground electrical cabling route and associated infrastructure or in the footprint of the proposed onsite substation. The nearest recorded

monument comprises GA031-050— Ringfort which is located c. 113m to the west of the westernmost proposed underground electrical cabling compound and c. 116m west of the proposed interface tower in Laughil townland (Figure 13-17). It is described on the HEV as follows:

GA031-050— : Ringfort - rath : LAUGHIL (Ballymoe By.)
Description: On a ridge in grassland. Poorly preserved subcircular rath (E-W 39m, N-S 33.5m) defined by a low bank, overlain from S through W to NW by a field bank. Possible external fosse survives outside the field bank at SW. The interior has been disturbed by the uprooting of trees. The above description is derived from the published 'Archaeological Inventory of County Galway Vol. II - North Galway'. Compiled by Olive Alcock, Kathy de hÓra and Paul Gosling (Dublin: Stationery Office, 1999). Date of upload: 05 August 2010.

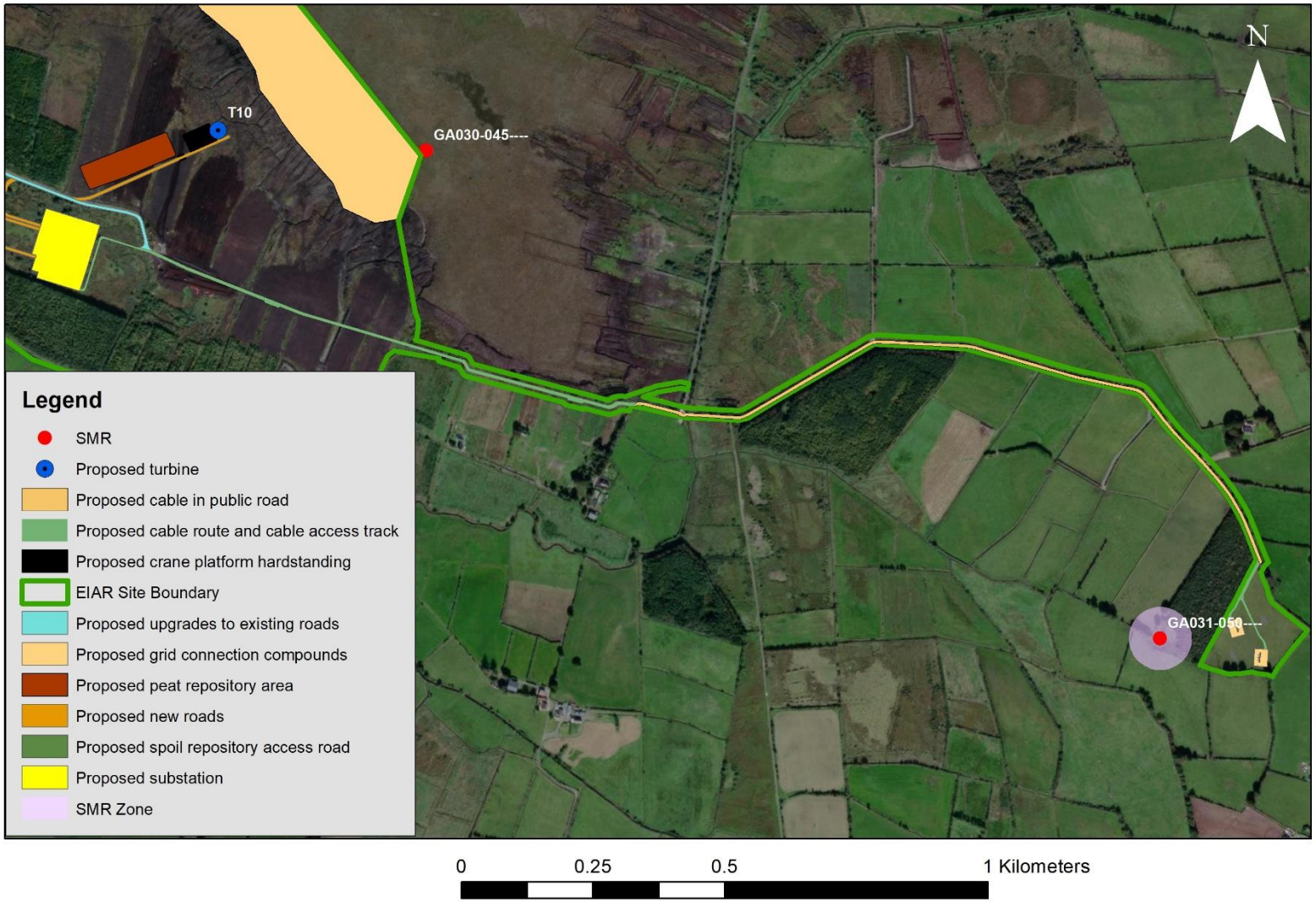

Figure 13-17: Proposed grid connection electrical cabling route and associated infrastructure in relation to nearest recorded monument GA031-050—.

13.3.4.3 Sub-Surface Archaeological Potential

Approximately 1km of the Proposed Grid Connection underground electrical cabling route, and the proposed 220kV substation are located in cut-over bog. The proposed grid connection masts and associated compounds are located in pasture. Given both the peatland and greenfield nature of these areas it is possible that previously unrecorded sub-surface archaeological finds, features or deposits are located within the footprint of the proposed onsite 220kV substation, cabling route (off road) and masts and compounds. The potential therefore exists that sub-surface archaeological sites or features, if present within these areas, may be directly impacted by construction phase activities. Mitigation measures to ameliorate this potential impact are detailed in Section 13.4 below.

13.3.4.4 Protected Structures

No Protected Structures are located within 100m of either side of the Proposed Grid Connection underground electrical cabling route and associated infrastructure, or in the vicinity of the proposed 220kV substation. The nearest RPS structure, the Dennis Mausoleum in Clonberne graveyard (Ref. 40), is located c. 1.9km north-east of the proposed substation and c. 1.6km north-northwest of the proposed masts (Figure 13-18).

13.3.4.5 NIAH Structures and Historic Gardens

No NIAH structures or historic gardens are located within 100m of the Proposed Grid Connection underground electrical cabling route and associated infrastructure or in the vicinity of the proposed 220kV substation. As outlined above, the nearest structures comprise two mausoleums in Clonberne graveyard (NIAH Reg. 30403109 and 30403110), one of which is also a Protected Structure (Ref. 40) (Figure 13-18).

13.3.4.6 Cartographic Evidence and Local Cultural Heritage

The available historic Ordnance Survey maps were consulted for any items of cultural heritage (CH) merit that may be located along the Proposed Grid Connection underground electrical cabling route and associated infrastructure, and in the vicinity of the proposed 220kV substation. Any items of local cultural heritage merit were assigned a number (CH1, 2, etc) for purposes of identification. One sub-circular feature (CH1) was noted on the last edition (Cassini) OS map c. 23m south-east of the cable route within the public road and c. 76m north-east of the westernmost proposed grid connection compound at Laughil (Table 13-10). The feature is not indicated on the earlier editions of the OS map but is also apparent on the available aerial photography. It is situated on the east side of the public road and is indicated on the historic map as a semi-circular hachured area (Figure 13-19). Field inspection of this area showed the feature to comprise a densely overgrown subcircular hollow which does not appear archaeological in nature. It will not be directly affected by the works associated with the proposed grid connection.

Table 13-10: Cultural heritage feature within 100m of the proposed underground electrical cabling route.

CH NO.	TYPE	ITM E	ITM N
CH1	Sub-circular feature	556974	754970

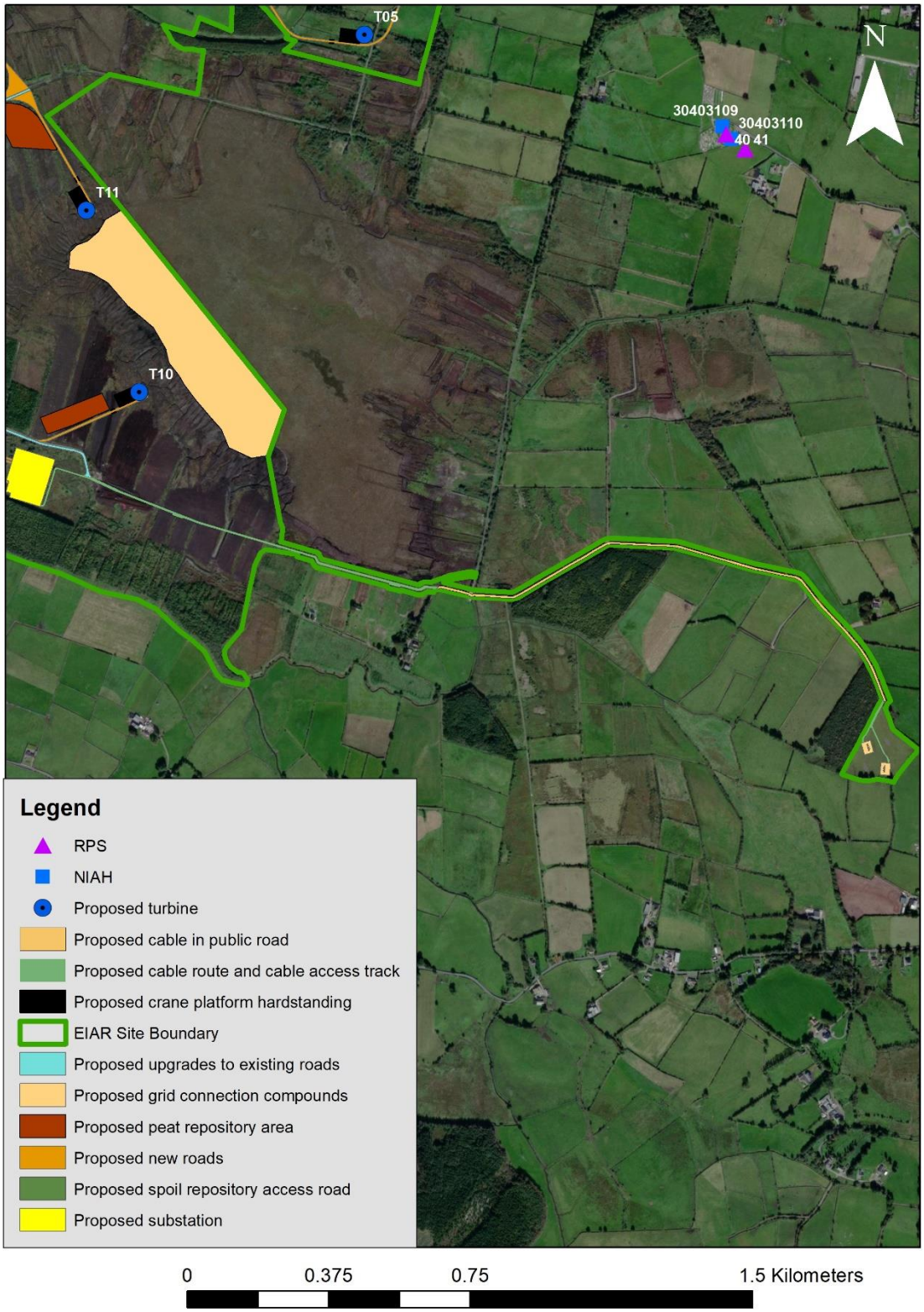

Figure 13-18: Proposed substation and underground electrical cabling route and associated infrastructure in relation to nearest RPS and NIAH structures.

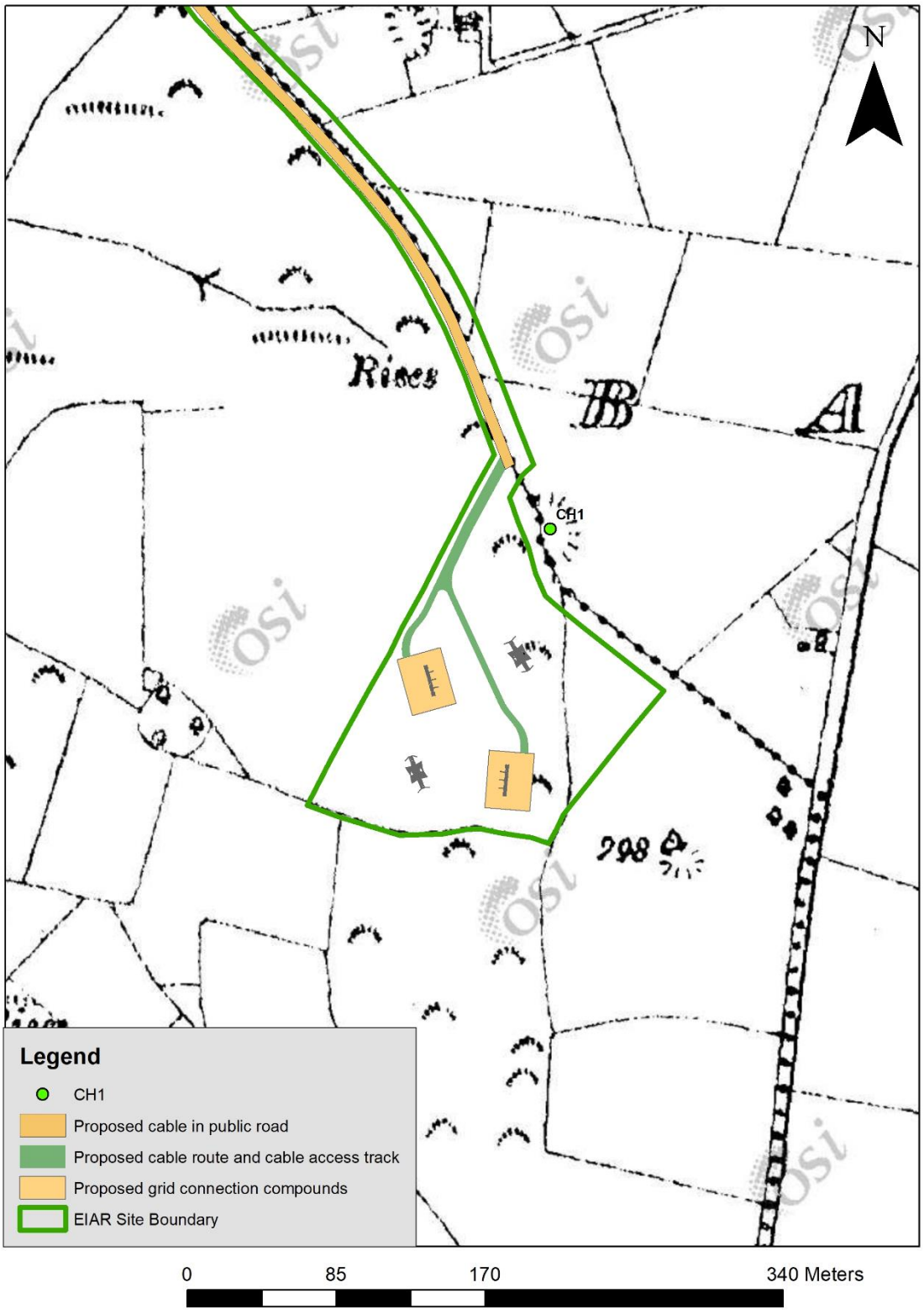

Figure 13-19: CH1 on Cassini OS background.

Figure 13-20: CH1 on aerial background.

13.3.5 Proposed Turbine Delivery Route

It is proposed that the large turbine components will be delivered to the Site from Tuam via the N83 heading north and exiting the N83 at Ballagh West onto L6466 local road. Temporary accommodation works to facilitate turbine delivery will be required at this location. The turbine delivery vehicles will turn eastwards along this local road for approx. 2.3 km. Temporary accommodation works will be

required off the L6466 in the townland of Carrowntryla and in the townland of Lissybroder before joining the R328 Regional Road.

No National Monuments, recorded monuments, RPS or NIAH structures or gardens or any items of local cultural heritage merit are located on or within 100m of the proposed temporary accommodation works areas.

13.4 Likely Effects and Associated Mitigation Measures

13.4.1 Do Nothing Scenario

If the Proposed Project were not to proceed, no changes would be made to the current land-use practices in the area. Small-scale agriculture and commercial forestry practices in the area would continue to be managed under existing commercial forestry arrangements and farming practices and the impact associated with this would be neutral. However, the opportunity to generate renewable energy and electrical supply to the national grid would be lost, as would the opportunity to further contribute to meeting Government and EU targets for the production and consumption of electricity from renewable resources and the reduction of greenhouse gas emissions. In addition to this, the opportunity for achieving a biodiversity net gain through habitat enhancement works would also be lost.

If the Proposed Project were not to proceed, the potential to impact on Cultural Heritage would be removed.

13.4.2 Construction Phase Potential Effects (Indirect)

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from the Site. This includes impacts on visual setting of any cultural heritage assets in the wider landscape. Since these effects are only possible once development is operational, they are considered operational effects and are therefore discussed in Section 13.4.4 below. No indirect effects were identified which would occur at the construction stage of the Proposed Project.

13.4.3 Construction Phase Potential Effects (Direct)

Direct effect refers to a 'physical impact' on a monument or site. The construction phase of a development may consist of earthmoving activities such as topsoil removal and excavation works as part of the construction phase of the Proposed Project. This may have a number of potential negative effects on the known and potential archaeological heritage. These are outlined below with the suggested mitigation measures. The assessment of effects in the sections that follow assess the Proposed Wind Farm and then the Proposed Grid Connection with a series of mitigation measures provided where required. A Residual Effect is then provided for the Proposed Project (the Proposed Wind Farm Site and the Proposed Grid Connection) for each potential effect assessed.

13.4.3.1 UNESCO World Heritage Sites and those on Tentative List

Proposed Wind Farm

No UNESCO World Heritage Sites (WHS) or those on the Tentative list are located within 20km of the nearest proposed turbine. No direct effects to such assets as a result of the Proposed Wind Farm are therefore identified.

Proposed Grid Connection

No UNESCO World Heritage Sites (WHS) or those on the Tentative list are located on or immediately adjacent to the Proposed Grid Connection therefore no direct effects are identified.

13.4.3.2 National Monuments

Proposed Wind Farm

No National Monuments or those subject to a Preservation Order are located on or in the immediate vicinity of the Proposed Wind Farm. No direct effects to such assets as a result of the Proposed Wind Farm are therefore identified.

Proposed Grid Connection

No National Monuments of those subject to a Preservation Order are located on or immediately adjacent to the Proposed Grid Connection therefore no direct effects are identified.

13.4.3.3 Recorded Monuments

Identification of Effect

Proposed Wind Farm

One recorded monument, GA030-073— Enclosure, is located within the Proposed Wind Farm Site. The outer extent of the monument as discerned by the site inspection and a review of the available historic OS mapping is shown in Figure 13-7 above and at its closest point is located c. 22m to the east of the hardstand for T2. While direct effects to the monument itself are not identified, the proximity of the enclosure to the hard stand for T2 is such that accidental damage through the movement of machinery or other construction activities could occur. In this regard mitigation measures are outlined below.

Proposed Grid Connection

No recorded monuments are located in the footprint of the proposed 220kV substation, within 100m of the proposed underground electricity cabling route in the footprint of the proposed interface towers or associated compounds. No direct effects to this aspect of the Cultural Heritage resource as a result of the Proposed Grid Connection are therefore identified.

Mitigation measures

- A buffer zone of 20m will be established around recorded monument GA030-073— prior to the commencement of construction works associated with the Proposed Wind Farm.
- The buffer should comprise durable temporary fencing with keep out signage.
- The presence of the monument and the requirement for the buffer zone will be added to the Construction and Environmental Management Plan (CEMP) for the Proposed Project.
- No ground works, storage of materials or tracking of machinery will take place within the buffer zone.

Residual Effect

The implementation of the mitigation measures as outlined above will ensure that there are no residual effects as a result of the Proposed Project.

Significance of Effects

None.

13.4.3.4 Sub-surface Archaeological Potential

Identification of Effect

Proposed Wind Farm

Due to the extent of groundworks associated with the construction phase of the Proposed Wind Farm, the greenfield and peatland nature of the Proposed Wind Farm Site and the presence of a recorded monument within same, it is possible that previously unrecorded sub-surface archaeological finds, features or deposits are located within the Proposed Wind Farm Site. The potential therefore exists that sub-surface archaeological sites or features, if present within the Proposed Wind Farm Site, may be directly affected by construction phase activities. The potential effect on sub-surface archaeological finds and features, should they exist, as a result of ground works associated with the construction stage of the Proposed Wind Farm are likely to be direct, negative and permanent in the absence of appropriate mitigation measures.

Proposed Grid Connection

Approximately 1km of the Proposed Grid Connection underground electrical cabling, the proposed onsite 220kV substation and proposed interface masts and associated compounds are located in both peatland and pasture. Given the greenfield and peatland nature of these areas it is possible that previously unrecorded sub-surface archaeological finds, features or deposits are located within the footprint of the proposed onsite 220kV substation, along the proposed electrical cabling route where it extends through cutover bog and in the footprint of the proposed interface masts and associated compounds. The potential therefore exists that sub-surface archaeological sites or features, if present within these areas, may be directly affected by construction phase activities. The potential effect on sub-surface archaeological finds and features, should they exist, as a result of ground works are likely to be direct, negative and permanent in the absence of appropriate mitigation measures.

Mitigation measures

- Pre-development archaeological testing of the Proposed Project infrastructure in peatland or greenfield areas will be carried out under licence from the National Monuments Service. This is in order to identify any archaeological features at the earliest stage possible in the project to allow time to deal with any requirements such as preservation in situ (redesign / avoidance) or preservation by record (archaeological excavation).
- A report on the testing will be compiled on completion of the work and submitted to the NMS and the Planning Authority.
- Further mitigation such as preservation in situ (avoidance), preservation by record (excavation), buffer zones may be required depending on the results of the testing.
- Archaeological monitoring of all groundworks during the construction stage of the Proposed Project by a licensed archaeologist.
- A report on the monitoring will be compiled on completion of the work and submitted to the NMS and the Planning Authority.

- Further mitigation such as preservation in situ (avoidance), preservation by record (excavation), buffer zones may be required depending on the results of the monitoring.

Residual Effect

Any archaeological sites/features, if detected, during testing and/or monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential effect as a result of the Proposed Project after the implementation of the mitigation measures is likely to be Not Significant.

Significance of Effects

The overall significance of effects will be Not Significant.

13.4.3.5 Protected Structures

Proposed Wind Farm

No Protected Structures subject to statutory protection are located within the Proposed Wind Farm Site therefore no potential direct effects to this resource are identified.

Proposed Grid Connection

No Protected Structures subject to statutory protection are located in the vicinity of the Proposed Grid Connection therefore no direct effects to this resource from the construction of the Proposed Grid Connection infrastructure are identified.

13.4.3.6 NIAH structures and Historic Gardens

Proposed Wind Farm

No structures listed in the NIAH or historic gardens are located within the Proposed Wind Farm Site therefore no direct effects to such structures are identified.

Proposed Grid Connection

No structures listed in the NIAH are located in the area of the Proposed Grid Connection, therefore no direct effects to such structures or historic gardens from the construction of the Proposed Grid Connection are identified.

13.4.3.7 Features of Local Cultural Heritage Merit

Proposed Wind Farm

No upstanding features of local cultural heritage merit were identified within the Proposed Wind Farm Site therefore no direct effects to same are anticipated.

Proposed Grid Connection

One potential cultural heritage feature (CH1) was noted within 100m of the proposed Grid Connection Route. As it is located to the east of the public road and does not lie directly on the proposed underground electrical cabling route no direct effects to this feature are identified.

13.4.4 Operational Phase Potential Effects (Indirect)

Indirect effects are where a feature or site of archaeological, architectural heritage merit or their setting is located in close proximity to a proposed development. Indirect effects here are mainly concerned with effects on setting of cultural heritage sites.

Effects on settings of sites may arise when a development is proposed immediately adjacent to a recorded monument or cluster of monuments. While the Proposed Project may not physically impact on a site, it may alter the setting of a monument or group of monuments. There is no standardised industry-wide approach for assessing the degree of effect to the setting of a monument. For purposes of assessing visual effects on setting, the uniqueness of the monuments, the potential interrelationships of monuments, the inter-visibility of monuments, visual dominance and whether a setting is altered or unaltered can be used to assess effect. The nature and dominance of the Proposed Project is also taken into consideration and the topography within which the Proposed Project is located. Operational effects are considered largely as a result of the proposed turbines rather than other elements of the Proposed Project which would not be dominant in the wider landscape setting in general. The assessment of effects on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 14 of this EIAR, and also with reference to photomontages / Photowires. The ZTV is a bare-ground model which does not take screening vegetation into account.

13.4.4.1 UNESCO World Heritage Sites and those on Tentative List

Proposed Wind Farm

No UNESCO World Heritage Sites (WHS) or those on the Tentative list are located within 20km of the nearest proposed turbine. No potential effects to the setting of such sites as a result of the Proposed Wind Farm are therefore identified.

Proposed Grid Connection

No UNESCO World Heritage Sites (WHS) or those on the Tentative list are located within 20km of the Proposed Grid Connection. No potential effects to the setting of such sites as a result of the Proposed Grid Connection area therefore identified.

13.4.4.2 National Monuments

Identification of Effect

Proposed Wind Farm

No National Monuments or those subject to a Preservation Order are located within the Proposed Wind Farm Site. No monuments subject to a Preservation Order are located within 10km of the nearest proposed turbine. Two National Monuments in State Care (Ownership) (No. 273 and 248) are located within 10km of the nearest proposed turbine. The monuments comprise Dunmore Abbey (No. 273) and Dunmore Castle (No. 248) which are located 7km and 8.1km, respectively, from the nearest proposed Turbine, T1. The ZTV demonstrates theoretical visibility of 9-11 turbines from both monuments. A photomontage (VP2) taken from the R360 regional road leaving the village of Dunmore in the townland of Carrownaseer South, however, demonstrates limited visibility of the proposed turbines from this location. Given the distance of the monuments from the proposed turbines a change to their immediate setting will not occur, however, a change to the wider setting in which the monuments are located is acknowledged. This is considered to be Not Significant.

Proposed Grid Connection

No National Monuments in State Care or those subject to a preservation order are located within 100m of the underground electrical cabling route, or in the vicinity of the proposed substation or the proposed interface masts. The nearest of these monuments to the proposed onsite 220kV substation and the proposed interface masts comprise Dunmore Abbey (Nat. Mon. no. 273) which is located over 9km to the north-west. A change to the immediate setting of this monument as a result of the Proposed Grid Connection will not therefore occur. A change to the wider setting within which the monument is located is identified but is regarded as Not Significant given the intervening distance.

Mitigation Measures

It is noted that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model and therefore potential visual effects may in reality be less severe.

Residual Effect

The residual effect as a result of the Proposed Project is considered to be Not Significant.

Significance of Effects

The overall significance of effects will be Not Significant.

Table 13-11: Table of impacts on National Monuments within 10km of the nearest proposed turbine.

Nat. Mon. No.	SMR NO.	CLASS	TOWNLAND	TURBINE ID	DISTANCE TO NEAREST TURBINE (m)	POTENTIAL EFFECT	SIGNIFICANCE OF EFFECT
273	GA017-005001-	Friary (Augustinian)	Abbeyland South	T01	7086	Indirect visual	Not Significant
248	GA017-069--	Castle	Castlefarm	T01	8138	Indirect visual	Not Significant

13.4.4.3 Recorded Monuments

Identification of Effect

Proposed Wind Farm

A total of one hundred and seventy-one (171) recorded monuments are located within 5km of the nearest proposed turbine. This number includes the monument located within the Proposed Wind Farm Site. The monuments within the 5km study area were overlaid on the ZTV to ascertain what number of turbines may be visible from their locations. The ZTV shows that 158 of the 171 monuments are located in areas where 9-11 turbines will theoretically be visible. Seven monuments are located in areas where 5-8 turbines will theoretically be visible, one monument is located in an area where 1-2

turbines will theoretically be visible and five monuments are located in areas where no turbines will theoretically be visible.

Both the distance to the nearest turbine and the number of turbines visible from each asset are used to arrive a level of potential effect on setting. Potential effects on setting as detailed in Table 13-12 below are based on the **worst case scenario** in that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model. In reality the effect will be reduced since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the effect on setting in some instances. Furthermore, many of these monuments may not be readily discernible in the landscape which further ameliorates effects on setting. The physical status of those monuments within 1-2km of the proposed turbines (Map ID 1-36) was checked on the HEV and where no surface trace of the monuments survives no potential visual effect is concluded. The same is concluded for redundant records. The theoretical significance of effects for such monuments (both redundant records and those with no surface trace) is graded as N/A in Table 13-12 below. In addition, where upstanding remains of monuments are extant the level of preservation of those monuments is taken into consideration when determining the potential significance of effect. For example, the potential effect on the setting of low-visibility monuments such as enclosures and ringforts with poorly preserved remains is considered to be less than the potential effect on the setting of a well preserved church, tower house or other upstanding monument. In this regard, the theoretical significance of effect on monuments within 1-2km and where 9-11 turbines will theoretically be visible is reduced from Significant to Moderate where those monuments are regarded as low visibility and/or with poorly preserved remains.

There are some instances where information regarding the physical status of a monument is not available online or in the Archaeological Survey of Ireland (ASI) monument files. For example there is no information for boundary mounds GA030-044—, GA030-045— and GA030-077— and access to same was not possible given their location in the bog. In this regard the theoretical significance of effects for these monuments remains as Significant although it is possible that they no longer have any above-ground expression.

A photomontage (VP9 – EIAR Vol. 2 Photomontage Booklet) taken from a local road in the townland of Kilmurry is located c. 450m north-west of the church, graveyard and ecclesiastical enclosure (GA017-121001-, GA017-121002- and GA017-121003-) and demonstrates visibility of proposed turbines from this area which is likely to be similar from the recorded monuments. It should be noted, however, that these and the majority of the other recorded monuments within the 5km study area are located on private land to which formal public access it not possible.

Table 13-12: Table of potential effects on setting of recorded monuments within 5km of the nearest proposed turbine.

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
1	GA030-073—	KILLAVOHER	Enclosure	T02	95	9-11	Significant
2	GA030-044—	CLONBERN,GORTAGARRAUN, KILMURRY (Ballymoe By.)	Boundary mound	T03	145	9-11	Significant
3	GA030-077—	KILMURRY (Ballymoe By.)	Boundary mound	T03	251	9-11	Significant
4	GA030-045—	CLONBERN,CLOONARKAN	Boundary mound	T10	397	9-11	Significant
5	GA030-061—	GARRAUNBAUN (Ballymoe By.)	Ringfort - rath	T09	503	9-11	Moderate
6	GA017-121001-	KILMURRY (Ballymoe By.)	Church	T01	721	9-11	Moderate
7	GA017-121002-	KILMURRY (Ballymoe By.)	Graveyard	T01	728	9-11	Moderate
8	GA017-121003-	KILMURRY (Ballymoe By.)	Ecclesiastical enclosure	T01	728	9-11	Moderate
9	GA018-024—	KILLAVOHER	Enclosure	T02	744	9-11	N/A

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
10	GA030-067—	GORTAGARRAUN	Ringfort - rath	T07	762	9-11	Moderate
11	GA017-108—	KILLAVOHER	Ringfort - rath	T02	936	9-11	Moderate
12	GA031-016—	CLONBERN	Church	T05	989	9-11	Significant
13	GA031-016001-	CLONBERN	Graveyard	T05	1000	9-11	Significant
14	GA031-018—	CLONBERN	Ritual site - holy well	T05	1048	9-11	Moderate
15	GA017-109—	KILLAVOHER	Monumental structure	T02	1088	9-11	Moderate
16	GA030-042001-	CLADDAGH WEST	Enclosure	T08	1228	9-11	Moderate
17	GA030-042—	CLADDAGH WEST	Castle - tower house	T08	1255	9-11	Moderate
18	GA030-039—	CLADDAGH EAST	Ringfort - rath	T09	1281	9-11	Moderate
19	GA030-097—	LOMAUNAGHBAUN	Ringfort - cashel	T08	1400	9-11	Moderate
20	GA031-069—	KIPPAUNAGH	Architectural feature	T02	1406	9-11	Moderate

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
21	GA017-120—	KILMURRY (Ballymoe By.)	Ringfort - rath	T01	1419	9-11	Moderate
22	GA030-040002-	CLADDAGH WEST	Souterrain	T08	1460	9-11	Moderate
23	GA030-040001-	CLADDAGH WEST	Children's burial ground	T08	1461	9-11	N/A
24	GA030-040—	CLADDAGH WEST	Ringfort - rath	T08	1461	9-11	Moderate
25	GA031-017—	CLONBERN	Ritual site - holy well	T05	1575	9-11	Moderate
26	GA030-058—	DUNBLANEY	Ringfort - rath	T07	1603	9-11	Moderate
27	GA030-094—	LOMAUNAGHBAUN	Ringfort - rath	T08	1754	9-11	Moderate
28	GA017-024—	BRACKLOON (Ballymoe By.)	Church	T07	1774	9-11	Moderate
29	GA017-024001-	BRACKLOON (Ballymoe By.)	Graveyard	T07	1775	9-11	Moderate
30	GA017-024002-	BRACKLOON (Ballymoe By.)	Ecclesiastical enclosure	T07	1775	9-11	Moderate

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
31	GA017-023—	BRACKLOON (Ballymoe By.)	Ringfort - rath	T03	1852	9-11	Moderate
32	GA017-023001-	BRACKLOON (Ballymoe By.)	Enclosure	T03	1853	9-11	Moderate
33	GA030-095—	LOMAUNAGHBAUN	Enclosure	T07	1891	9-11	Moderate
34	GA031-022—	COGAULA	Ringfort - rath	T02	1920	9-11	N/A
35	GA018-061001-	TIMADOOAUN	Children's burial ground	T02	1995	9-11	Moderate
36	GA018-061—	TIMADOOAUN	Enclosure	T02	1996	9-11	Moderate
37	GA030-041—	CLADDAGH WEST	Ringfort - rath	T08	2017	9-11	Moderate
38	GA030-043—	CLADDAGH WEST	Enclosure	T08	2032	9-11	Moderate
39	GA031-050—	LAUGHIL (Ballymoe By.)	Ringfort - rath	T10	2032	9-11	Moderate
40	GA017-033—	CARROWKEEL (Ballymoe By.)	Ringfort - rath	T01	2078	9-11	Moderate
41	GA030-056—	DUNBLANEY	Ringfort - rath	T07	2128	9-11	Moderate

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
42	GA031-021—	COGAULA	Ringfort - rath	T02	2152	9-11	Moderate
43	GA017-025—	BRACKLOON (Ballymoe By.)	Ringfort - rath	T01	2189	9-11	Moderate
44	GA018-035—	LERHIN	Ringfort - rath	T02	2200	9-11	Moderate
45	GA030-059—	DUNBLANEY	Ringfort - rath	T07	2305	9-11	Moderate
46	GA030-062001-	GARRAUNS (Ballymoe By.)	Souterrain	T08	2349	9-11	Moderate
47	GA030-062—	GARRAUNS (Ballymoe By.)	Ringfort - rath	T08	2349	9-11	Moderate
48	GA017-034—	CARROWKEEL (Ballymoe By.)	Ringfort - rath	T01	2369	9-11	Moderate
49	GA018-020001-	GORTGARROW	Enclosure	T02	2493	9-11	Moderate
50	GA030-057001-	DUNBLANEY	Souterrain	T07	2518	9-11	Moderate
51	GA030-057—	DUNBLANEY	Ringfort - rath	T07	2518	9-11	Moderate
52	GA018-020002-	GORTGARROW	Redundant record	T02	2525	9-11	N/A

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
53	GA031-004—	BALLYEDMOND	Children's burial ground	T10	2541	9-11	Moderate
54	GA030-063—	GARRAUNS (Ballymoe By.)	Enclosure	T08	2547	9-11	Moderate
55	GA018-021—	GORTGARROW	Enclosure	T02	2620	9-11	Moderate
56	GA017-133—	KNOCKROE (Ballymoe By.)	Enclosure	T07	2621	9-11	Moderate
57	GA030-020—	CAPPADAVOCK	Ringfort - rath	T09	2629	9-11	Moderate
58	GA030-020001-	CAPPADAVOCK	Souterrain	T09	2630	9-11	Moderate
59	GA031-037—	FORTBROWN	Enclosure	T10	2633	9-11	Moderate
60	GA031-070—	COGAULA	Children's burial ground	T02	2638	9-11	Moderate
61	GA018-036001-	LERHIN	Bawn	T02	2744	9-11	Moderate
62	GA018-036002-	LERHIN	Bawn	T02	2744	9-11	Moderate
63	GA018-036—	LERHIN	Castle - unclassified	T02	2745	9-11	Moderate

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
64	GA018-036003-	LERHIN	Earthwork	T02	2745	9-11	Moderate
65	GA018-036004-	LERHIN	Building	T02	2745	9-11	Moderate
66	GA031-038—	FORTBROWN	Redundant record	T10	2765	9-11	N/A
67	GA030-126—	TONREVAGH	Ringfort - rath	T08	2796	9-11	Moderate
68	GA030-047—	CORRALEA (Ballymoe By.)	Crannog	T09	2804	9-11	Moderate
69	GA030-092—	LEVALLY WEST	Ringfort - rath	T09	2834	9-11	Moderate
70	GA017-135—	KNOCKROE (Ballymoe By.)	Ringfort - rath	T07	2854	9-11	Moderate
71	GA017-075—	CLOONMORE (Ballymoe By.)	Mound	T01	2868	9-11	Moderate
72	GA017-036—	CARROWKEEL (Ballymoe By.)	Enclosure	T07	2874	9-11	Moderate
73	GA030-055—	DUNBLANEY	Ringfort - rath	T07	2887	9-11	Moderate
74	GA030-021—	CAPPADAVOCK,RYEHILL	Ringfort - rath	T08	2894	5-8	Slight

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
75	GA030-064—	GINNAUN	Graveyard	T09	2983	9-11	Moderate
76	GA017-164—	CARROWKEEL (Ballymoe By.)	Enclosure	T07	3055	9-11	Slight
77	GA017-134—	KNOCKROE (Ballymoe By.)	Ringfort - rath	T07	3066	9-11	Slight
78	GA017-134001-	KNOCKROE (Ballymoe By.)	Souterrain	T07	3066	9-11	Slight
79	GA018-037—	LERHIN	Enclosure	T02	3121	9-11	Slight
80	GA017-035—	CARROWKEEL (Ballymoe By.)	Ringfort - rath	T07	3134	9-11	Slight
81	GA030-122—	SHANVALLY (Dunmore By.)	Ringfort - rath	T08	3147	9-11	Slight
82	GA030-130—	SHANVALLY (Dunmore By.)	Burial	T07	3164	9-11	Slight
83	GA030-132—	DRUMBULCAUN	Ringfort - cashel	T07	3204	9-11	Slight
84	GA030-019—	CAPPADAVOCK	Enclosure	T09	3204	9-11	Slight

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
85	GA030-066—	GINNAUN,LEVALLY EAST	Enclosure	T09	3240	9-11	Slight
86	GA030-129—	LEVALLY EAST	Church	T09	3254	9-11	Slight
87	GA017-046—	CARROWNAGUR	Ringfort - rath	T07	3282	9-11	Slight
88	GA030-090001-	LEVALLY EAST	Chapel	T09	3283	9-11	Slight
89	GA030-090002-	LEVALLY EAST	Castle - unclassified	T09	3292	9-11	Slight
90	GA030-046002-	CORRALEA (Ballymoe By.)	Souterrain	T09	3301	9-11	Slight
91	GA030-046—	CORRALEA (Ballymoe By.)	Ringfort - rath	T09	3302	9-11	Slight
92	GA030-046001-	CORRALEA (Ballymoe By.)	Children's burial ground	T09	3302	9-11	Slight
93	GA030-125—	TONREVAGH	Ringfort - rath	T08	3303	9-11	Slight
94	GA030-048—	CURRAGHCREEN (Ballymoe By.)	Ringfort - rath	T09	3307	9-11	Slight

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
95	GA030-049—	CURRAGHCREEN (Ballymoe By.)	Ringfort - rath	T09	3373	9-11	Slight
96	GA030-120001-	TONREVAGH	Children's burial ground	T08	3375	9-11	Slight
97	GA030-120002-	TONREVAGH	Souterrain	T08	3375	9-11	Slight
98	GA030-120—	RYEHILL,TONREVAGH	Ringfort - rath	T08	3398	9-11	Slight
99	GA030-030—	CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	3404	9-11	Slight
100	GA030-127—	BOLEYLAAN	Redundant record	T07	3410	9-11	N/A
101	GA030-128—	BOLEYLAAN	Redundant record	T07	3418	9-11	N/A
102	GA030-054—	DRUMBULCAUN	Kiln - lime	T07	3440	9-11	Slight
103	GA030-053—	DRUMBULCAUN	Ringfort - cashel	T07	3448	9-11	Slight
104	GA030-052—	DRUMBULCAUN	Ringfort - rath	T07	3453	9-11	Slight

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
105	GA030-007001-	BALLYNAMONA (Dunmore By.)	Souterrain	T07	3639	9-11	Slight
106	GA030-007—	BALLYNAMONA (Dunmore By.)	Ringfort - rath	T07	3639	9-11	Slight
107	GA030-091—	LEVALLY EAST	Enclosure	T09	3671	9-11	Slight
108	GA030-050—	CURRAGHCREEN (Ballymoe By.),RYEHILL	Ringfort - rath	T09	3732	9-11	Slight
109	GA017-066—	AN CHEATHRÚ RUA THOIR,CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	3742	9-11	Slight
110	GA018-062—	TIMARD	Ringfort - rath	T02	3782	9-11	Slight
111	GA018-062001-	TIMARD	Children's burial ground	T02	3782	9-11	Slight
112	GA030-121—	RYEHILL	Ringfort - rath	T08	3825	9-11	Slight
113	GA030-006—	BALLYNAMONA (Dunmore By.)	Ringfort - rath	T07	3833	9-11	Slight

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
114	GA018-011—	CLOONMORE (Ballymoe By.),CLOONNA CAT	Boundary mound	T02	3941	9-11	Slight
115	GA017-099—	GORTEEN (Carrownagur ED)	Quarry	T01	3944	1-2	Not Significant
116	GA030-131—	CARROWROE WEST (Ballymoe By.)	Enclosure	T07	3946	9-11	Slight
117	GA017-100—	GORTEEN (Carrownagur ED)	Ringfort - rath	T01	3985	0	Imperceptible
118	GA030-029—	CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	4011	9-11	Not Significant
119	GA018-058—	PARK WEST	Castle - tower house	T02	4014	5-8	Not Significant
120	GA018-058001-	PARK WEST	Bawn	T02	4014	5-8	Not Significant
121	GA030-133—	KNOCKALOUR A EAST	Enclosure	T07	4123	9-11	Not Significant

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
122	GA017-053—	CARROWNTRYLA	Designed landscape - tree-ring	T07	4137	9-11	Not Significant
123	GA030-109—	POLLAPHUCA (Carrowrevagh ED)	Ringfort - rath	T08	4160	9-11	Not Significant
124	GA030-109001-	POLLAPHUCA (Carrowrevagh ED)	Structure	T08	4160	9-11	Not Significant
125	GA018-043—	CLOONMORE (Ballymoe By.),CLOONNACAT,LISHEENNAHELTIA	Boundary mound	T02	4181	9-11	Not Significant
126	GA030-031—	CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	4222	9-11	Not Significant
127	GA018-010001-	CLOONNACAT	Children's burial ground	T02	4260	9-11	Not Significant
128	GA018-010002-	CLOONNACAT	Mound	T02	4260	9-11	Not Significant
129	GA030-082—	KNOCKALOURA EAST	Enclosure	T07	4292	9-11	Not Significant

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
130	GA018-055—	PARK EAST	Quarry	T02	4343	9-11	Not Significant
131	GA017-051—	CARROWNTRY LA	Enclosure	T07	4364	9-11	Not Significant
132	GA017-051001-	CARROWNTRY LA	Burial	T07	4364	9-11	Not Significant
133	GA017-051002-	CARROWNTRY LA	Building	T07	4364	9-11	Not Significant
134	GA030-032—	CARROWROE WEST (Ballymoe By.)	Enclosure	T07	4368	9-11	Not Significant
135	GA017-067—	CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	4411	9-11	Not Significant
136	GA030-028—	CARROWROE WEST (Ballymoe By.)	Ringfort - rath	T07	4426	9-11	Not Significant
137	GA030-028001-	CARROWROE WEST (Ballymoe By.)	Souterrain	T07	4426	9-11	Not Significant
138	GA017-050001-	CARROWNTRY LA	Children's burial ground	T07	4444	0	Imperceptible

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
139	GA017-050—	CARROWNTRYLA	Ringfort - rath	T07	4444	0	Imperceptible
140	GA017-049—	CARROWNTRYLA	Enclosure	T07	4517	0	Imperceptible
141	GA044-036—	CLOONDAHAMPER (Blake),CLOONDAHAMPER (Brown)	Redundant record	T10	4574	9-11	N/A
142	GA030-078—	KNOCKALOURA EAST	Ringfort - rath	T07	4636	9-11	Not Significant
143	GA030-078001-	KNOCKALOURA EAST	House - indeterminate date	T07	4636	9-11	Not Significant
144	GA030-024—	CARROWNTANLIS	Cairn - unclassified	T07	4646	9-11	Not Significant
145	GA044-076—	LISNAMINAUN	Enclosure	T09	4661	9-11	Not Significant
146	GA017-038—	CARROWKEELANAHGLASS	Fulacht fia	T01	4673	9-11	Not Significant
147	GA030-079001-	KNOCKALOURA EAST	Souterrain	T07	4711	9-11	Not Significant

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
148	GA030-079002-	KNOCKALOURA EAST	House - indeterminate date	T07	4711	9-11	Not Significant
149	GA030-079—	KNOCKALOURA EAST	Ringfort - rath	T07	4711	9-11	Not Significant
150	GA017-048—	CARROWNTRYLA	Ringfort - rath	T01	4719	9-11	Not Significant
151	GA030-026—	CARROWREVAGH MORE	Ringfort - rath	T07	4768	9-11	Not Significant
152	GA017-008005-	ADDERGOOLE MORE	Cross-slab	T01	4800	9-11	Not Significant
153	GA017-008004-	ADDERGOOLE MORE	Children's burial ground	T01	4812	9-11	Not Significant
154	GA030-080—	CARTRON (Carrowrevagh ED),KNOCKALOURA EAST	Ringfort - cashel	T07	4818	9-11	Not Significant
155	GA017-008003-	ADDERGOOLE MORE	Enclosure	T01	4819	9-11	Not Significant
156	GA017-008006-	ADDERGOOLE MORE	Cross-inscribed stone	T01	4819	5-8	Not Significant

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
157	GA017-008007-	ADDERGOOLE MORE	Cross-slab	T01	4820	5-8	Not Significant
158	GA017-008002-	ADDERGOOLE MORE	Church	T01	4820	5-8	Not Significant
159	GA017-008001-	ADDERGOOLE MORE	Ecclesiastical enclosure	T01	4839	5-8	Not Significant
160	GA031-030—	DERREEN UPPER	Ringfort - rath	T02	4854	9-11	Not Significant
161	GA030-025—	CARROWNTANLIS,CARROWREVAGH MORE	Enclosure	T07	4869	9-11	Not Significant
162	GA030-083—	KNOCKALOURA WEST	Barrow - unclassified	T07	4877	9-11	Not Significant
163	GA030-034—	CARTRON (Carrowrevagh ED)	Ringfort - rath	T08	4904	9-11	Not Significant
164	GA030-034001-	CARTRON (Carrowrevagh ED)	Souterrain	T08	4904	9-11	Not Significant

MAP ID	SMR	TD.	TYPE	TURBINE ID	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
165	GA030-033—	CARTRON (Carrowrevagh ED)	Enclosure	T07	4915	9-11	Not Significant
166	GA030-081001-	KNOCKALOURA EAST	House - indeterminate date	T07	4923	9-11	Not Significant
167	GA030-081—	KNOCKALOURA EAST	Ringfort - rath	T07	4923	9-11	Not Significant
168	GA017-056—	CARROWPADEEN EAST	Ringfort - rath	T07	4926	0	Imperceptible
169	GA017-037—	CARROWKEELANAHGLASS	Ringfort - rath	T01	4934	9-11	Not Significant
170	GA031-029—	DERREEN UPPER	Ringfort - rath	T02	4936	9-11	Not Significant
171	GA030-087—	KNOCKALOURA WEST	Ritual site - holy/saint's stone	T07	4976	9-11	Not Significant

Mitigation Measures

No mitigation measures provided. It is noted that natural screening, boundaries, buildings and vegetation will potentially screen some visual effects.

Residual Effect

The residual effect as a result of the Proposed Project will be the same as those identified in the table of Potential Effects.

Significance of Effects

The overall significance of effects range from Imperceptible to Significant. In reality the effect is likely to be less severe due to natural screening, boundaries, buildings and vegetation, which will alleviate if not remove the effect on setting in some instances. Furthermore, some monuments may not be readily visible in the landscape which further ameliorates potential effects on setting. Additionally many of these monuments are located on private land which are not formally accessible to the public. It should also be noted that the theoretical Significant effect on setting was only determined for 6 out of 171 monument (3.5%) and in reality may be less.

Proposed Grid Connection

No recorded monuments are located within 100m of the proposed underground electrical cabling route and associated infrastructure or in the footprint of the proposed onsite substation. The nearest recorded monument comprises GA031-050— Ringfort which is located c. 113m to the west of the westernmost proposed underground electrical cabling compound and c. 116m west of the proposed interface tower in Laughil townland. Visual effects to the immediate setting of the monument will not occur, however, a change to its wider setting as a result of the proposed interface towers is acknowledged and is regarded as Slight given the low-visibility nature of the monument and the intervening forestry which currently screens the monument from the area of the proposed towers.

Mitigation Measures

No mitigation measures provided.

Residual Effect

The residual effect will be Slight.

Significance of Effects

The overall significance of effects will be Slight.

13.4.4.4 Sub-surface Archaeology

Potential visual effects to sub-surface archaeology which may exist within the Site are negated by the sub-surface nature of such features that do not have any above-ground elements on which the Proposed Project will have a visual effect.

13.4.4.5 Protected Structures

Identification of Effect

Proposed Wind Farm

No Protected Structures subject to statutory protection are located within the Proposed Wind Farm Site.

A total of 6 no. protected structures are located within 5km of the nearest proposed turbine. The ZTV shows that all of the structures are located in areas where 9-11 turbines will theoretically be visible. The nearest protected structure comprises a farmyard complex (Ref. 3995) in Clonberne townland c. 933m to the south-east of T2.

Both the distance to the nearest turbine and the number of turbines visible from each asset are used to arrive a level of potential effect on setting. Potential effects on setting as detailed in Table 13-13 below are based on a theoretical model and therefore the worst case scenario in that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model, and in reality the potential effect is likely to be less than that identified. For example, the Significant theoretical effect on the setting of Protected Structures Ref. 3995, 40, 41 and 39 is based on the distance of the structures from the proposed turbines and the number of turbines that will theoretically be visible from same. While photomontage (VP6) taken from outside Clonberne National School c. 560m north-east of the nearest protected structure (Ref. 3995) and c. 800m north-east of the protected structures at Clonberne graveyard (Ref. 40 and 41) demonstrates visibility of at least nine of the proposed turbines from this area, the immediate setting of these structures will not be affected. As outlined above, the potential visual effect may in reality be ameliorated by natural screening, buildings and vegetation thereby reducing the effects outlined in Table 13-13 below.

Proposed Grid Connection

No Protected Structures are located within 100m of either side of the Proposed Grid Connection underground electrical cabling route and associated infrastructure, or in the vicinity of the proposed 220kV substation. The nearest RPS structure, the Dennis Mausoleum in Clonberne graveyard (Ref. 40), is located c. 1.9km north-east of the proposed substation and c. 1.6km north-northwest of the proposed masts. No potential effects to the immediate setting of this or any other Protected Structures as a result of the Proposed Grid Connection are identified. A potential change to the wider setting in which the protected structures are located is acknowledged but is regarded as Not Significant.

Table 13-13: Potential visual effects on RPS structures within 5km of the nearest proposed turbine.

RPS ID	NIAH REG.	STRUCTURE	LOCATION	TURBINE	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically visible	Theoretical Significance of Effects
3995	30403106	Farmyard complex	CLONBERNE	T02	933	9-11	Significant
40	30403109	Mausoleum	Clonberne Old Graveyard	T05	997	9-11	Significant
41	30403110	Graveyard	Clonberne Dunmore	T05	1056	9-11	Significant

RPS ID	NIAH REG.	STRUCTURE	LOCATION	TURBINE	DISTANCE TO TURBINE (m)	No. of Turbines Theoretically visible	Theoretical Significance of Effects
39	30403108	Church	Clonberne Dunmore	T02	1688	9-11	Significant
3893	30403111	House	CAPPANTRUHAUN	T05	2029	9-11	Moderate
3898	30403008	Church	CAPPADAVOCK	T09	2605	9-11	Moderate

Mitigation Measures

It is noted that natural screening, boundaries, buildings and vegetation will potentially screen some visual effects.

Residual Effect

Since no mitigation measures are being proposed the residual effect as a result of the Proposed Project will range from Moderate to Significant.

Significance of Effects

The overall significance of effects will range from Moderate to Significant. In reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the effect on setting in some circumstances.

13.4.4.6 NIAH Structures and Historic Gardens

Identification of Effect

Proposed Wind Farm

No NIAH structures are located within the Proposed Wind Farm Site. Five structures listed in the NIAH are located within 5km of the nearest proposed turbine, many of which are also listed in the RPS. The nearest structure (Reg. 30403106) is part of the farmyard complex which is also a protected structure (Ref. 3995). Three historic gardens are located within 5km of the nearest proposed turbine. Some of these are associated with the NIAH structures listed in Table 13-7, while others may have no surviving associated structures. Similarly, in some instances there may be no surviving garden features. The nearest historic garden comprises that associated with Clonbern Lodge, less than 1km from the nearest proposed turbine, T5. The ZTV demonstrates theoretical visibility of all NIAH structures and historic gardens within 5km of the nearest proposed turbine.

Both the distance to the nearest turbine and the number of turbines visible from each NIAH structure and garden are used to arrive a level of potential effect on setting (Table 13-14 and Table 13-15). Potential effects on setting as detailed in the tables below are based on the **worst-case scenario** in that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model and in reality the potential effect is likely to be less than that identified. For example, the Significant theoretical effect on the setting of NIAH structures Reg. 30403109 and 30403110 is based on the

distance of the structures from the proposed turbines and the number of turbines that will theoretically be visible from same. As outlined above, the potential visual effect may in reality be ameliorated by natural screening, buildings and vegetation thereby reducing the effects outlined in Table 13-14 below. Furthermore, in the case of historic gardens the level of surviving original garden features is taken into consideration when determining the potential significance of effect. For example, where the available cartographic or aerial photography demonstrates minimal surviving features the theoretical significance of effects is less than that where the majority of the original garden features are extant. Similarly, the level of preservation of NIAH structures or their visibility in the landscape is taken into consideration when determining potential visual effects.

Proposed Grid Connection

No NIAH structures or historic gardens are located within 100m of the Proposed Grid Connection underground electrical cabling route and associated infrastructure or in the vicinity of the proposed 220kV substation. As outlined above, the nearest structures comprise two mausoleums in Clonberne graveyard (NIAH Reg. 30403109 and 30403110), one of which is also a Protected Structure (Ref. 40). No potential effects to the immediate setting of this or any other NIAH structures as a result of the Proposed Grid Connection are identified. A potential change to the wider setting in which the structures are located is acknowledged but is regarded as Not Significant.

Table 13-14: Potential visual effects on NIAH structures within 5km of the nearest proposed turbine.

NIAH Reg.	Date	Structure]	Townland	Turbine No.	Distance To Turbine (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effects
30403106	1830 - 1850	Outbuilding, Clonbern Park	CLONBERNE	T02	937	9-11	Moderate
30403109	1850 - 1880	Mausoleum	CLONBERNE	T05	981	9-11	Significant
30403110	1860 - 1865	Mausoleum	CLONBERNE	T05	1013	9-11	Significant
30403111	1810 - 1830	Derrynabuie House	CAPPANTRUHAUN	T05	2033	9-11	Moderate
30403008	1945 - 1950	Catholic Church of Our Lady and Saint Jarlath	CAPPADAVOCK	T09	2481	9-11	Moderate

Table 13-15: Potential visual effects on historic gardens within 5km of the nearest proposed turbine.

Site Name	Turbine No.	Distance To Turbine (m)	No. of Turbines Theoretically Visible	Theoretical Significance of Effect
Clonbern Lodge	T05	993	9-11	Moderate
Derrynabuie	T05	2023	9-11	Moderate
Carrowntryla House	T07	4422	9-11	Not Significant

Mitigation Measures

No mitigation measures are provided. It is noted that natural screening, boundaries, buildings and vegetation will potentially screen visual effects.

Residual Effect

Since no mitigation measures are being proposed the residual effect as a result of the Proposed Project will range from Not Significant to Significant.

Significance of Effects

The overall significance of effects will range from Not Significant to Significant. In reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the effect on setting altogether.

13.4.4.7 Features of Local Cultural Heritage Merit

Identification of Effect

Proposed Wind Farm

No upstanding structures or items of local cultural heritage merit are located within or adjacent to the Proposed Wind Farm therefore no potential visual effects to such features will occur.

Proposed Grid Connection

No items of cultural heritage merit are located within or close to the proposed 200kV onsite substation therefore no potential visual effects to such features will occur. One sub-circular feature (CH1) was noted on the last edition (Cassini) OS map c. 23m south-east of the cable route within the public road, and c. 76m north-east of the westernmost proposed grid connection compound/interface tower at Laughil. The immediate setting of this feature will not be affected, although a change to its wider setting is acknowledged. Given the low-visibility nature of the feature this is regarded as Slight.

Mitigation Measures

No mitigation measures are provided. It is noted that natural screening, boundaries, buildings and vegetation will potentially screen visual effects.

Residual Effect

Since no mitigation measures are being proposed the residual effect as a result of the Proposed Project will be Slight.

Significance of Effects

The overall significance of effects will be Slight.

13.5 Cumulative Effects

Cumulative impact is defined as 'The addition of many small impacts to create one larger, more significant, impact' (EPA 2022). Cumulative effects encompass the combined effects of multiple developments or activities on a range of receptors. In this case, the receptors are the archaeological monuments and architectural/cultural heritage sites in the vicinity of the Proposed Project. The potential cumulative impacts between and the Proposed Project the other projects described in Chapter 2 of the EIAR, hereafter referred to as the other projects, have been considered in terms of impacts on archaeology and cultural heritage.

The projects considered in relation to the potential for in combination impacts arising from construction, operational and decommissioning phases of the Proposed Project and for which all relevant data was reviewed include those listed below:

13.5.1 All extant planning applications within 20km

A list of extant planning applications within 20km of the Proposed Project was considered in terms of cumulative effects (See Section 2.8 of Chapter 2). Some of these applications comprise agricultural and residential developments such as single dwelling houses, and agricultural buildings while others comprise quarrying activity or other larger-scale developments such as road realignments and the provision of electrical infrastructure. Such developments if located in proximity to archaeological monuments or other cultural heritage assets may have the potential to directly or indirectly affect such features. It is considered, however, that the planning authority would have regard to the protection of any known or unknown cultural heritage sites through the requirement for assessments or implementation of appropriate mitigation measures through the planning process or the discharge of conditions attached to a grant of planning permission, where relevant.

Many of the extant applications are relatively small and localised in nature.

13.5.2 Other Wind Farms

A number of other existing, permitted and proposed wind farms (Cooloo – Proposed, Cloonscragh – Permitted, Cloncoon – Permitted, Laurclavagh – Proposed and Shancloon – Proposed) are located within 20km of the Proposed Project. These wind farms were considered cumulatively with the Proposed Project and in particular with regard to potential cumulative visual effects.

13.5.3 Cumulative Effects (Direct Effects – Construction stage)

The addition of other projects to the Proposed Project was considered in order to assess Cumulative Effects. These included all other wind farms within 20km of the Proposed Project. Direct effects for the Proposed Project are considered to be confined to within the Site and relate to construction effects.

13.5.3.1 Cumulative effects (direct) considering other wind farms within 20km

13.5.3.1.1 *Cumulative effects to UNESCO World Heritage sites (tentative), National Monuments in State Care, Recorded Monuments, NIAH and RPS*

No UNESCO World Heritage Sites, National Monuments in State Care, RPS structures or NIAH sites are located within the footprint of the Proposed Project and therefore no direct effects on these resources were identified when considering the Proposed Project alone. When the Proposed Project is added to other projects therefore, it does not result in direct cumulative effects since none were identified in the first place. The aforementioned cultural heritage assets are located away from the Site and therefore are not capable of being directly impacted by the Proposed Project. No cumulative effects will occur therefore.

One recorded monument, GA030-073— Enclosure, is located within the Proposed Wind Farm Site. The outer extent of the monument as discerned by the site inspection and a review of the available historic OS mapping at its closest point is located c. 22m to the east of the hardstand for T2. While direct effects to the monument itself are not identified mitigation in the form of a buffer zone is recommended to avoid accidental damage. No recorded monuments are located in the footprint of the proposed 220kV substation, within 100m of the proposed underground electricity cabling route or in the footprint of the proposed interface towers or associated compounds. No direct effects to this aspect of the Cultural Heritage resource as a result of the Proposed Grid Connection are therefore identified.

As no direct effects to recorded monuments as a result of the Proposed Project are identified no cumulative effects will occur when considered with the other existing and proposed wind farms listed above.

13.5.3.1.2 *Cumulative effects on potential sub-surface archaeology*

Potential direct effects identified at the construction stage of the Proposed Project are those which may occur to hitherto unknown sub-surface archaeological finds, features or deposits. This potential effect was identified as being permanent, negative and significant. After the mitigation measures are implemented, however, these potential effects will be Not Significant. The overall significance of effects is therefore Not Significant.

The same potential construction stage effect could be identified for the other proposed wind farm projects since groundworks could impact on hitherto unknown archaeological, finds, features or deposits or other cultural heritage assets. In this regard there could potentially be a cumulative effect when the Proposed Project is added to the existing and proposed wind farms. Mitigation measures seek to alleviate such negative effects if not remove the effect altogether and therefore there will be no significant cumulative effects on sub-surface remains.

If the mitigation measures prescribed in this EIAR are implemented then cumulative direct effects to unknown sub-surface archaeology will not occur, regardless of the other projects within 20km of the Proposed Project.

13.5.4 Cumulative Effects (Indirect Effects – Operational Stage)

Indirect effects on setting occur at the operational stage of the development (when turbines are operational). In this regard in order to assess overall cumulative effects on archaeology and cultural heritage, the Proposed Project is considered in the context of its operation in combination with other wind farms within 20km.

13.5.4.1 UNESCO World Heritage sites (tentative)

No UNESCO World Heritage Sites (WHS) or those on the Tentative list are located within 20km of the nearest proposed turbine. No potential effects to the setting of such sites as a result of the Proposed Project are therefore identified. No potential cumulative effects will therefore occur to this aspect of the Cultural Heritage resource when considering the Proposed Project with the existing and proposed wind farms within 20km.

13.5.4.2 National Monuments in State Care

Two National Monuments in State Care (Ownership) (No. 273 and 248) are located within 10km of the nearest proposed turbine. The ZTV demonstrates theoretical visibility of 9-11 turbines from both monuments. A photomontage (VP2) taken from the R360 regional road leaving the village of Dunmore in the townland of Carrownaseer South, however, demonstrates limited visibility of the proposed turbines from this location. Given the distance of the monuments from the proposed turbines a change to their immediate setting will not occur, however, a change to the wider setting in which the monuments are located is acknowledged. This is considered to be Not Significant.

When considered cumulatively with other existing and proposed wind farms within 20km the ZTV demonstrates theoretical visibility of the Proposed Project turbines and the proposed Cooloo turbines to the south, the permitted Cloncoon turbine to the north-east, the existing Clonlusk turbine to the south-west, the proposed Cloonscragh turbine to the south-west and potentially some of the proposed Laurclavagh turbines to the south-west. In this regard there is potential for cumulative impacts to the wider setting of the National Monuments within the 10km study area, however, only the proposed Cooloo turbines are located within same. No cumulative effects to the immediate setting of the monuments is identified, however, as neither the Proposed Project turbines or the proposed Cooloo turbines are located immediately adjacent to same, and in this regard potential cumulative effects to setting are not regarded as significant.

13.5.4.3 Recorded Monuments

A total of one hundred and seventy-one (171) recorded monuments are located within 5km of the nearest proposed turbine. This number includes the monument located within the Proposed Wind Farm Site. The ZTV shows that 158 of the 171 monuments are located in areas where 9-11 turbines will theoretically be visible. Seven monuments are located in areas where 5-8 turbines will theoretically be visible, one monument is located in an area where 1-2 turbines will theoretically be visible and five monuments are located in areas where no turbines will theoretically be visible. The overall significance of effects range from Imperceptible to Significant. In reality the effect is likely to be less severe due to natural screening, boundaries, buildings and vegetation, which will alleviate if not remove the effect on setting in some instances. Furthermore, some monuments may not be readily visible in the landscape, have poorly preserved remains, or are considered low-visibility monuments (e.g. some ringforts and enclosures) which further ameliorates potential effects on setting.

When considered cumulatively with the existing and proposed wind farms it should be noted that none of the other wind farms fall within the 5km study area. As outlined above, the ZTV demonstrates theoretical visibility of the other proposed turbines in addition to the Proposed Wind Farm turbines but at a distance in excess of 5km from same. While there is potential for cumulative impacts to the wider setting of recorded monuments no significant visual effects are identified given the distance of the proposed turbines to the monuments within 5km. No potential cumulative effects to the immediate setting of such monuments will occur.

13.5.4.4 Protected Structures and NIAH

No Protected Structures subject to statutory protection are located within the Proposed Wind Farm Site. A total of 6 no. protected structures are located within 5km of the nearest proposed turbine. The ZTV

shows that all of the structures are located in areas where 9-11 turbines will theoretically be visible. No Protected Structures are located within 100m of either side of the Proposed Grid Connection underground electrical cabling route and associated infrastructure, or in the vicinity of the proposed 220kV substation. The nearest RPS structure, the Dennis Mausoleum in Clonberne graveyard (Ref. 40), is located c. 1.9km north-east of the proposed substation and c. 1.6km north-northwest of the proposed interface masts.

No NIAH structures are located within the Proposed Wind Farm Site. Five structures listed in the NIAH are located within 5km of the nearest proposed turbine, many of which are also listed in the RPS. The nearest structure (Reg. 30403106) is part of the farmyard complex which is also a protected structure (Ref. 3995). Three historic gardens are located within 5km of the nearest proposed turbine. No NIAH structures or historic gardens are located within 100m of the Proposed Grid Connection underground electrical cabling route and associated infrastructure or in the vicinity of the proposed 220kV substation. As outlined above, the nearest structures comprise two mausoleums in Clonberne graveyard (NIAH Reg. 30403109 and 30403110), one of which is also a Protected Structure (Ref. 40). No potential effects to the immediate setting of this or any other NIAH structures as a result of the Proposed Grid Connection are identified. A potential change to the wider setting in which the structures are located is acknowledged but is regarded as Not Significant.

The overall significance of effects as a result of the Proposed Project will range from Not Significant to Significant. In reality the effect will be less severe since the ZTV model does not take natural screening and buildings into consideration which will alleviate if not remove the impact on setting altogether.

When considered cumulatively with the existing, permitted and proposed wind farms within 20km it should be noted that none fall within the 5km study area. The ZTV demonstrates that the proposed Cooloo turbines may be theoretically visible in addition to the Proposed Wind Farm turbines but at a distance in excess of 5km from same. In this regard there is potential for cumulative impacts to the wider setting of RPS and NIAH structures, however, no significant effects are identified and no potential cumulative effects to the immediate setting of such sites will occur.

13.6 Decommissioning Phase

There will be no significant potential effects to the archaeological, architectural and cultural heritage environment during the decommissioning of the Proposed Project. Any potential direct effects will already have been resolved through mitigation measures during the construction phase. Therefore there is no potential for any cumulative effects to arise during the decommissioning phase.

13.7 Conclusion

This Cultural Heritage chapter was prepared by Tobar Archaeological Services Ltd. It presents the results of an archaeological, architectural and cultural heritage impact assessment of the Proposed Project. The assessment was based on desktop research, field survey, GIS based mapping, ZTV and was also assisted by representative photomontages and photowire images. A detailed examination of the available baseline data was undertaken in addition to a comprehensive site inspection. The latter comprised a walk-over survey of the Proposed Wind Farm Site and any proposed infrastructure therein, and a windscreen survey and walk-over survey of the Proposed Grid Connection.

Where potential effects have been identified, such as to potential sub-surface archaeology, appropriate mitigation measures have been recommended in order to minimise any such effects. Recommended mitigation includes a 20m buffer zone around enclosure GA030-073—, pre-development archaeological testing of the Proposed Project infrastructure (turbine bases, hardstands, compounds, new roads, grid connection in greenfield and peatland areas, etc) and archaeological monitoring during the construction stage of the Proposed Project.

Potential indirect effects on the setting of any UNESCO World Heritage Sites and those on a Tentative List within 20km, National Monuments within 10km, recorded monuments within 5km and RPS/NIAH structures within 5km were included in order to assess potential effects on setting in the wider landscape. No UNESCO WHS or those on a Tentative List are located within 20km of the nearest proposed turbine. The ZTV demonstrates theoretical visibility of the proposed turbines from the majority of cultural heritage assets within 5km and from National Monuments within 10km. Both the distance to the nearest turbine and the number of turbines visible from each cultural heritage asset were used to arrive a level of potential effect on setting. Potential effects on setting are based on the **worst case scenario** in that natural screening, boundaries, buildings and vegetation are not taken into account in the ZTV model and in reality the potential effect is likely to be less. Furthermore, many of these monuments may not be readily discernible in the landscape, have poorly preserved remains, or are considered low-visibility monuments (e.g. some ringforts and enclosures) which further ameliorates effects on setting.

All cultural heritage assets within 100m of either side of the Proposed Grid Connection underground electrical cabling route were assessed for potential effects to same. No direct effects to the recorded archaeological, architectural or cultural heritage resource as a result of the Proposed Grid Connection have been identified. Mitigation measures are recommended where deemed appropriate and include archaeological testing of greenfield and peatland areas along the Proposed Grid Connection underground cabling route and associated infrastructure.

An assessment of potential cumulative effects was also undertaken taking into consideration other extant planning applications and proposed wind farms within 20km. While some potential cumulative visual effects to the wider setting of cultural heritage assets is possible when considered with the proposed wind farms, no significant cumulative impacts have been identified and no cumulative effects to the immediate setting of cultural heritage assets will occur.

13.8 References

Aalen, F.H.A. *et al.*, 1997, *Atlas of the Irish Rural Landscape*. Cork University Press, Cork.

Architectural Heritage Guidelines for Planning Authorities (2011)

Department of Arts, Heritage, Gaeltacht and the Islands, 1999, Framework and Principles for the Protection of the Archaeological Heritage, 1999.

Guidelines on the information to be contained in Environmental Impact Statements, EPA 2022.

Guidance on Setting and the Historic Environment, Historic Environment Division, February 2018.

Other Sources

Sites and Monuments Record, Co. Galway

Record of Monuments and Places, Co. Galway

1st and 2nd Edition 6 inch OS maps

www.heritagemaps.ie

www. heritagedata.maps.arcgis.com

www.excavations.ie

www.buildingsofireland.ie

www.logainm.ie