

13 ARCHAEOLOGY AND CULTURAL HERITAGE

13.1 Introduction

This archaeological and cultural heritage chapter was prepared by Tobar Archaeological Services. It presents the results of an archaeological and cultural heritage impact assessment prepared as part of the Environmental Impact Assessment Report for the proposed Meenbog Wind Farm, Co. Donegal (the 'Proposed Development').

The site of the Proposed Development comprises areas of upland peat and largely commercial forestry plantations.

The purpose of this chapter is to assess the potential effects of the proposed wind farm 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 comprehensive programme of field survey of the study area. The Chapter is based on a combination of desk-based research and the results of field walking to identify areas of archaeological/architectural/cultural significance or potential, likely to be effected by the Proposed Development. An assessment of potential effects is presented and a number of mitigation measures are recommended where appropriate. The impact of the Proposed Development on the setting of Cultural Heritage Assets is also assessed.

13.1.1 Proposed Development

13.1.1.1 Proposed Windfarm

The Proposed Development comprises the construction of 19 no. Wind turbines, turbine access roads, an electricity substation, grid connection cabling, borrow pits, temporary construction compounds and 1 No. met mast and associated infrastructure. One of the temporary compounds will be repurposed to a recreational and amenity area and new walking tracks will be provided also as described in Chapter 4. The Proposed Development will involve ground disturbance in all elements of the proposal. Clear felling will also be required.

The layout of all the above components was designed sympathetically to the known cultural heritage features in the area. No known above ground cultural heritage assets are located within the study area boundary. Every effort was made to ensure that the Proposed Development would have the minimum impact possible by placing turbines and access roads in areas which have no above ground archaeological /architectural/cultural heritage features. A full description of the Proposed Development is provided in Chapter 4 of this EIA.

13.1.1.2 Proposed Grid Connection Route

A connection between the site of the Proposed Development and the national electricity grid will be necessary to export the electricity generated. The planning application for the Proposed Development includes permission for 110kV grid connection cabling, as shown in the layout drawings included as Appendix 4.1a of the EIA. It is intended that the Proposed Development will connect to the national grid via the existing Clogher 110 kV Electricity Substation (Clogher Substation), located in the townland of

Cullionboy, Co. Donegal. The Clogher Substation is located approximately 6.2 kilometres southwest of the proposed development at its closest point. Further details are provided in Chapter 4 of the EIAR.

13.1.2 Statement of Authority of Tobar Archaeological Services

This section of the EIAR has been prepared by Miriam Carroll and Annette Quinn of Tobar Archaeological Services. Miriam and Annette both graduated from University College Cork in 1998 with a Masters degree in Methods and Techniques in Irish Archaeology. Both directors are licensed by the Department of Culture, Heritage and the Gaeltacht to carry out excavations and are members of the Institute of Archaeologists of Ireland. Annette Quinn and Miriam Carroll have been working in the field of archaeology since 1994 and have undertaken numerous projects for both the private and public sectors including excavations, site assessments (EIS/EIAR/EIA) and surveys. They are competent experts for the purposes of the preparation of this EIAR

13.1.3 Legislation and Guidelines

13.1.3.1 Current 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 (Arts, Heritage, Regional, Rural and Gaeltacht Affairs) 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).

Under the Heritage Act 1995 (as amended) 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'*.

13.1.3.2 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.

13.1.3.3 Statutory Consultation

The Department of Culture, Heritage and the Gaeltacht responded to scoping on the 17th January 2017. The response noted that Tobar Archaeological Services have been commissioned to prepare an Archaeological Assessment report of the proposed site as part of the EIAR which will accompany the application for planning permissions for the Proposed Development. The Department will forward recommendations based on the Archaeological Assessment once the report has been submitted.

13.1.3.4 Donegal County Development Plan 2012- 2018

The Donegal County Development Plan 2012-2018 outlines a number of policies and objectives relating to archaeology and heritage (see below). The principal aim of Chapter 6 of the development plan is to *'conserve, protect and enhance the County's built, natural and cultural heritage for future generations...'*

Built Heritage

Donegal's homes and farm buildings, often referred to as rural vernacular architecture, have been built over many years by using local materials. Donegal County Council recognise that there are many vernacular buildings that add to the beautiful and rugged landscape synonymous with Donegal but that are not present in the current Record of Protected Structures (RPS). The addition of such buildings to the Record is

currently being explored in an attempt to prevent them from being demolished and to encourage their re-use (pg. 98).

Development Plan objectives relating to built heritage include:

BH-O-1: To preserve, protect, enhance and record the architectural heritage of the County.

BH-O-2: To facilitate appropriate revitalisation and reuse of the built heritage throughout the county including vernacular buildings.

Development Plan policies relating to built heritage include:

BH-P-1 It is a Policy of the Council to conserve and protect all structures (or parts of structures) and sites contained in the Record of Protected Structures that are of special architectural, historic, archaeological, artistic, cultural, scientific, social or technical interest.

BH-P-2 It is a policy of the Council to review the RPS on an ongoing basis, and to add structures (or parts of structures) of special interest as appropriate.

Archaeological Heritage

The aim of the development plan with regard to archaeological heritage is 'to conserve and protect the County's archaeological heritage for present and future generations while encouraging appreciation and enjoyment of these valuable, non-renewable cultural resources through sustainable management, sensitive enhancement and appropriate development' (pg. 101).

Development Plan policies relating to archaeological heritage include:

AH-P-1 It is a policy of the Council to protect and enhance the integrity of Archaeological

Monuments and their settings and to secure the preservation in-situ of all archaeological

monuments included in the Record of Monuments and Places.

AH-P-3 It is the policy of the Council to protect the character, settings of and views from National Monuments/ Recorded Monuments and to manage development which would be

considered to (visually or physically) intrude upon or inhibit the enjoyment of the amenities of these sites.

AH-P-4 It is a policy of the Council to protect where appropriate, the character and setting of any unrecorded archaeological object or site.

13.1.3.5 West Tyrone Area Plan 2019

The Proposed Development bounds County Tyrone at the south-east and therefore the objectives of the West Tyrone Area Plan 2019 and for that reason considered here. The overall aim of the West Tyrone Area Plan 2019 is to 'provide a planning framework in general conformity with the Regional Development Strategy for Northern Ireland which facilitates future growth and development within West Tyrone whilst protecting and, where appropriate, enhancing the natural and built environment and ensuring that development is both sustainable and of a high quality.'

Several objectives are outlined in the plan one of which relates to built and cultural heritage:

'protection and enhancement of landscape features, natural habitats and built heritage features that are of conservation importance and contribute to the overall character of individual settlements and the wider countryside.'

The plan also states that *'The West Tyrone Area has a rich and diverse range of landscapes, wildlife habitats and heritage features that together distinguish its special character and identity. There is a need to balance development pressures with the protection of the natural and built environment.'*

13.1.4 Site Location and Topography

The development area is situated on relatively high ground at elevations ranging between c. 130m-310m above Ordnance Datum. The highest point of the site of the Proposed Development is located at the western side of the windfarm in the townland of Meenbog, with an elevation of 329m OD. Coniferous forestry plantations occupy a significant portion of the study area, and in particular areas where turbines will be placed. Unplanted open bogland is also apparent in a small section along the north-eastern boundary where Turbines 16 and Turbine 19 are proposed.

Access to the site was gained from the public road to the north. Numerous existing forest tracks are located within the site. The site is located approximately 13km to the east of Donegal town and 9km from Ballybofey to the south of the N15 National route which links the aforementioned towns. The study area also includes the proposed grid connection route and it was examined and assessed as part of the EIAR.

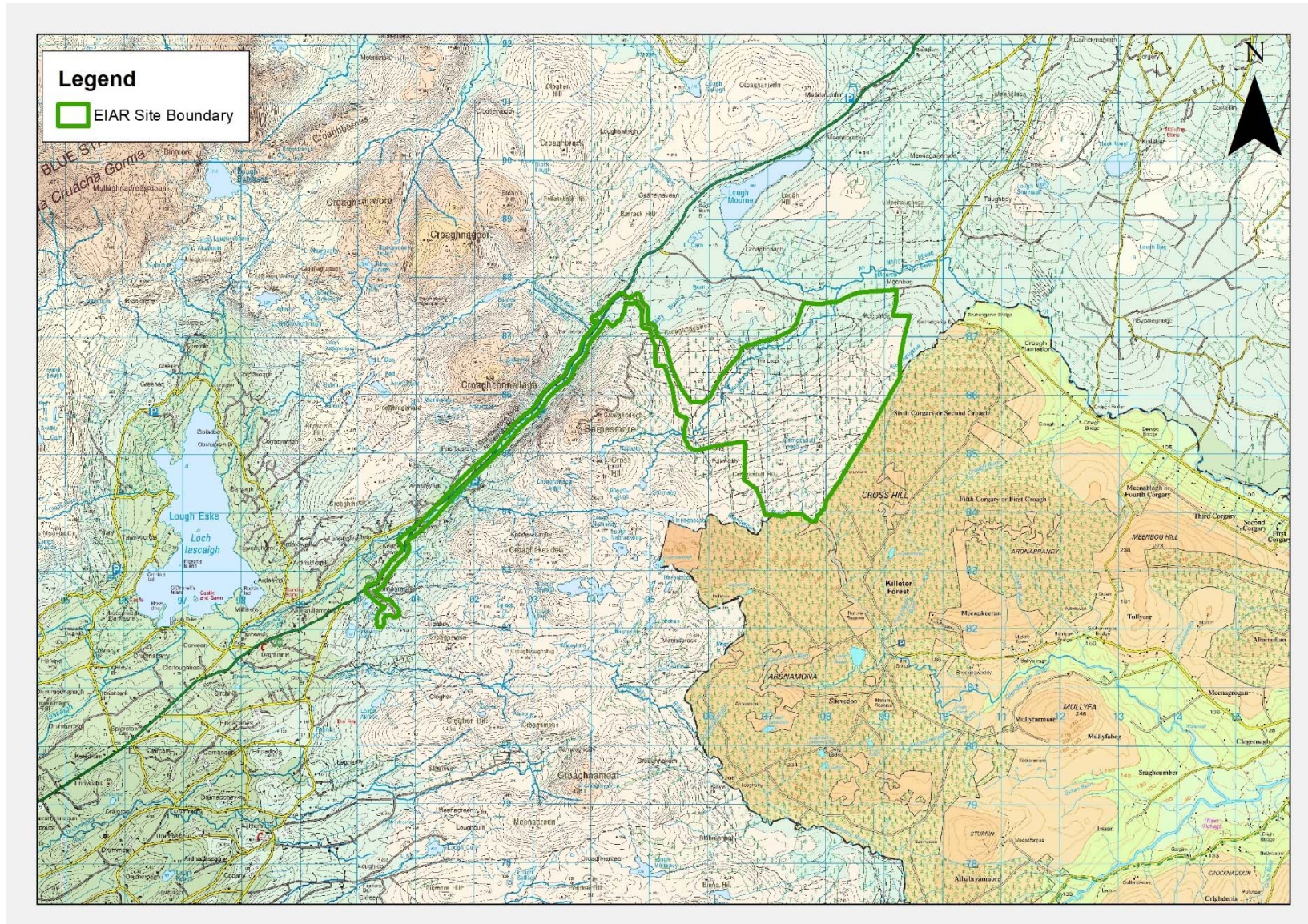


Figure 13.1: Site location map

13.2 Methodology

The assessment of the archaeology, architecture and cultural heritage of the area of the Proposed Development included GIS mapping, desk-based research followed by field inspection. A desk-based study of the site of the Proposed Development site was initially undertaken in order to assess the archaeological, architectural and cultural heritage potential of the area and to identify constraints or features of archaeological/cultural heritage significance within or near to the site of the Proposed Development. Field inspection of the study area was undertaken in June 2017 to determine if previously unrecorded archaeological/architectural or cultural heritage features were located in the area of the Proposed Development and to assess any potential effects on known or previously unrecorded sites or monuments within the EIAR study area. Field survey had also been undertaken in 2014 and 2015 associated with a previous planning application incorporating part of the site of the Proposed Development.

Table 13.1 Heritage sites considered according to Sensitivity

Heritage Site Type	Distance Considered
UNESCO World Heritage Sites (including tentative sites)	25km
National Monuments (State Ownership and Preservation Order Sites)	20km
Recorded Monuments, RPS	5km
NIAH and Historic Gardens	5km NIAH and 3km Gardens
Undesignated sites, if relevant	500m from Site Boundary, cable route or Haul Route

13.2.1 Geographical Information Systems

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. A geographic information system (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 (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 the development on archaeological, architectural and cultural heritage.

ArcGIS online viewshed analysis was also used to assess effects on setting of archaeological monuments. The Viewshed tool uses the Esri Elevation Analysis service to determine which areas are visible from specified observer points (the observer points being the monuments). Visibility settings are used to set the height of the observer (1.75m standard), the height of the observed features (turbine hub height of 100m utilised), and the maximum viewing distance of the observer.

13.2.2 Desktop Assessment

A primary cartographic source and base-line data for the archaeological assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Donegal and the Sites and Monuments Record for Co. Tyrone, Northern Ireland. All known recorded archaeological monuments are indicated on 6 inch Ordnance Survey (OS) maps and are listed in aforementioned records. The 1st (1841-2) edition OS maps for the area were also consulted. The site of the Proposed Development was inspected by Tobar Archaeological Services in October 2014 and June 2017. A photographic record was made of the development area (Appendix 13.1).

The following sources were consulted for this assessment report:

- The Sites and Monuments Record Northern Ireland (SMRNI)
- Historic Monuments in State Care (NI)
- The Record of Monuments and Places (RMP)
- National Monuments in State Care, Co. Donegal
- The Topographical Files of the National Museum of Ireland
- First edition Ordnance Survey maps (OSI.ie)
- Second edition Ordnance Survey maps (OSI.ie)
- Third edition Ordnance Survey Map (Record of Monuments and Places for County Donegal)
- Down Survey maps for County Donegal (www.downsurvey.tcd.ie)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI.ie))
- Excavations Bulletins
- Donegal County Development Plan 2012-2018, Donegal County Council
- County Donegal Heritage Plan (2007), Donegal County Council
- West Tyrone Area Plan 2019
- National Inventory of Architectural Heritage (NIAH)
- Potential Booley Sites in County Donegal, 2012, Donegal County Council

13.2.2.1 Record of Monuments and Places

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 Donegal and County Tyrone. All 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.archaeology.ie and www.ni-environment.gov.uk was also consulted.

13.2.2.2 Cartographic Sources and Aerial Photography

The 1st (1836) edition and 2nd edition OS maps for the area were consulted, where available, as was OSI aerial photography on OSI.ie.

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 study area these files were consulted for every townland within and adjacent to the latter.

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 Culture, Heritage and the Gaeltacht. 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 as yet undiscovered.

13.2.2.5 Donegal County Development Plan 2012-2018

The County Development Plan (2012-18) 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 wind farm. The townlands within and surrounding the study area were entered into the list of protected structures in the development plan to assess the proximity and potential effect of the Proposed Development on such structures. The development plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of County Donegal. The dataset for the Donegal Record of Protected Structures was obtained from Donegal County Council and added to the base mapping for the development in order to accurately assess any potential effects on such structures.

13.2.2.6 West Tyrone Area Plan 2019

The West Tyrone Area Plan 2019 was consulted for policies and objectives relating to archaeology, built and cultural heritage for this area of County Tyrone.

13.2.2.7 Listed Buildings (NI)

The list of buildings of special architectural or historic interest is a register recording the best of Northern Ireland's architectural heritage. Protecting buildings of architectural and historic importance began here in 1974. A First Survey was conducted and during the process, the listing criteria constantly developed, as the information gathered became more detailed. When the First Survey ended in 1994, it was decided to bring the earliest records up to the standard of the later records and to confirm that all the buildings on the list were of special architectural or historic interest. This is known as the [Second Survey](#). The dataset for the listed buildings of NI was added to the development site base mapping in order to accurately assess any potential effects on such structures.

13.2.2.8 Excavations Bulletins

Excavations' Bulletin is an annual account of all excavations carried out under license. The database is available on line at www.excavations.ie and includes excavations from 1985 to 2012. 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 area of the Proposed Development.

13.2.2.9 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 Culture, Heritage and the Gaeltacht. The NIAH database was consulted for all townlands within and adjacent to the study area. The NIAH survey for Donegal has been published and was downloaded on to the base mapping for the proposed wind farm

(www.buildingsofireland.ie). The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Culture, Heritage and the Gaeltacht 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 Arts, Heritage, Regional, Rural and Gaeltacht Affairs to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland's architectural heritage.

13.2.3 Fieldwork

The study area was inspected by Tobar Archaeological Services over a number of days in June 2017 (and previously in October 2014/5). The inspection consisted of an extensive walkover examination of the site and an assessment of any nearby recorded monuments, architectural, built or cultural heritage items where accessible. A full photographic record of the site was made. An inspection of the proposed grid connection route was also undertaken. The site description and photographic record is presented in Appendix 13.1.

For the wider area, outside the study area boundary, a standardised approach was utilised for the assessment of indirect effects. This was done according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity. This assessment did not include site visits to each and every Cultural Heritage Asset as this would be beyond the scope of the EIS/EIAR, the majority of RMPs being located in private lands. Only sites that were publicly accessible were visited in this regard. Areas with concentrations of RMPs were assessed from the nearest publicly accessible point and views recorded in the direction of the Proposed Development. (see Appendix 13.1). This assessment was also assisted by cartographic analysis and consultation of the photomontages undertaken as part of the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 12 of this EIA. The Zones of Theoretical Visibility Map was also utilised in establishing potential views from particular locations.

13.2.3.1 Limitations Associated with Fieldwork

No significant limitations were encountered during field survey. Dense tree cover within the study area boundary meant that the inspection of the ground was difficult in some locations.

13.2.4 Assessment of Likely Significant Effects

The likely effects on the existing archaeological and cultural heritage environment are assessed using the criteria as set out in the Draft revised guidelines on the information to be contained in Environmental Impact Statements EPA (2017). The following terminology is used when describing the likely effects of the Proposed Development from a Cultural Heritage Perspective.

13.2.4.1 Types of Impact

Direct impacts arise where an archaeological heritage feature or site is physically located within the footprint of the Proposed Development whereby the removal of part, or all of the feature or site is thus required.

Indirect impacts 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 impacts.

Cumulative Impacts arise when the addition of many impacts create a large more significant impact.

Residual Impacts are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

13.2.4.2 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.

13.3 Description of Existing Environment

13.3.1 Archaeological Heritage

For the purposes of this report, archaeological heritage includes

- UNESCO World Heritage Sites
- Archaeological Landscapes or Areas of High Amenity (County Development Plan)
- National Monuments (Ownership, Guardianship and Preservation Orders)

- Recorded archaeological monuments listed in the RMP/SMR
- Newly discovered archaeological sites
- Sites recorded in the Excavations Database

13.3.1.1 Proposed Development

13.3.1.1.1 UNESCO World Heritage Sites (and those on tentative List)

No monuments on the WHS list and tentative list are located within 25km of the proposed turbines (<http://www.worldheritageireland.ie/tentative-list/>)

13.3.1.1.2 National Monuments

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. Monuments are also protected by Preservation Orders, also National Monuments.

In Northern Ireland many monuments contained within the NI SMR may also be in State Care which means they are in the ownership or guardianship of the Department of the Environment, Northern Ireland (DOENI).

Northern Ireland Sites and Monuments may also be Scheduled for protection under Article 3 of [The Historic Monuments and Archaeological Objects \(Northern Ireland\) Order 1995](#). Such monuments are selected on the basis of criteria published in Planning Policy Statement 6 (PPS 6): Planning, Archaeology and Built Heritage (1999) and include sites dating from 7000 BC to the 20th century, such as prehistoric tombs, earthworks of all kinds, castles, churches, maritime sites, canals, World War 2 defences and the Belfast Shipyard 'Samson and Goliath' cranes (http://www.doeni.gov.uk/niea/built-home/protection/scheduled_monuments). When a monument is scheduled, the owner or occupier is responsible for its good maintenance and consent is required for works that would alter or break the ground surface or disturb the historic fabric of the monument within its statutorily protected area.

As these monuments are categorised as being of National Importance, national monuments within 20km of the proposed turbines were assessed for effect on visual setting (Figure 13.3).

No National Monuments are located on or within close proximity to the site of the Proposed Development site or the study area boundary. The nearest National Monuments are:

Table 13.2: National Monuments within 20km of the site boundary (All Counties)

Nat Mon No.	Rmp / Smrni	Itm E	Itm N	Description	Townland	Distance To Nearest Turbine (M)
N/A	TYR016:017	226880 (ING)	385650 (ING)	Todd's Den, Churchtown Wedge Tomb:	Churchtown	17804 to T19
N/A	TYR016:018	226660 (ING)	385390 (ING)	Druids' Altar, Churchtown Portal Tomb:	Churchtown	17610 to T19
N/A	TYR016:046	227190 (ING)	383820 (ING)	Berrysfort Standing Stone	Berrysfort	18362 to T19
174	DG093-013001-	592848	878541	Donegal Castle	Donegal	15225 to T3
175	DG093-013002-	592560	878016	Donegal Abbey	Glebe	15702 to T3
463	DG070-026001-	625385	900373	Beltany	Raphoe	20909 to T19

Donegal Castle (No. 174)

Donegal Castle: Hugh Roe O'Donnell, who died in 1505, is credited with having first erected a castle at Donegal (AFM 1505). The 'old castle' and a 'new tower' at Donegal are mentioned in a domestic conflict of 1564 (AFM 1564); the nature of this tower is uncertain. Two years later, the Lord Deputy, Sir Henry Sidney, described the castle as 'one of the greatest that ever I saw in Ireland in any Irishman's lands, and would appear in good keeping one of the fairest. . .' (Caulfield 1870-1, 22). Though burned in 1589, and partly demolished, possibly in 1595, to prevent it being garrisoned by English forces (CSPI 1588-92, 123; O'Rahilly 1927, 208), it must, soon after, have been repaired; it fell into the possession of the English in 1601 (Murphy Ed., 1895, 261, 281, 291). Whether or not it was subsequently repaired by Rory O'Donnell is unknown. Captain Basil Brooke, knighted in 1616, received a grant of the castle in 1611, had it renewed in 1620 and made permanent in 1623 (Hill 1877, 324; Petrie 1840, 186). He is described in 1611 as having 'a fair bawn built with flankers' within which was 'a strong house of stone' (Hill 1877, 514). The Coats of Arms on the over-mantel of the fireplace confirm that it was he who converted the whole, with the addition of a gabled wing, into a Jacobean manor-house. During the 1641 rebellion it was held by Sir Basil's heir, Henry Brooke, though Clanrickarde took it for a short period in 1651. Henry Brooke subsequently resided there (de Breffny and ffolliott 1975, 44-5). It fell to decay in the 18th century and was placed in the guardianship of the Office of Public Works in 1898 (Leask 1932, 12). It is now a National Monument (no. 174).

For the purposes of clarity and to aid the description, the manor-house is taken as attached to the W wall of the keep. The remains consist of a much altered tower-house (DG093-013001-) and adjoining early 17th century manor-house (DG093-013008-) at the NE end of a bawn (DG093-013007-). They are protected by the River Eske on the N and E. Two distinct building periods are evident. Some lengths of the bawn wall with splayed loops survive on the E, S and W, which together with the SW gatehouse-tower are probably not earlier than the 17th century. The other sections of enclosing wall, particularly on the W and S, probably stand on original foundations. The two-storey

gate-tower has a bartizan above the SE corner. The present external entrance is possibly modern, the original access being from the parapet walk on the E where there is a pointed doorway; it is fitted with numerous loops.

The above description was derived from the 'Archaeological Survey of County Donegal. A description of the field antiquities of the County from the Mesolithic Period to the 17th century.' Compiled by: Brian Lacey with Eamon Cody, Claire Cotter, Judy Cuppage, Noel Dunne, Vincent Hurley, Celie O'Rahilly, Paul Walsh and Seán Ó Nualláin (Lifford: Donegal County Council, 1983). In certain instances the entries have been revised and updated.

Donegal Friary (National Monument No.175):

founded for the Franciscan Observant friars by Aodh Rua O' Donnell and his wife Nuala O' Brien, the date of commencement of the building was 1473 or 1474, or less probably 1472 (Mooney 1954-5, 20). It survived intact until 1588 when English forces pillaged it and, soon afterwards, garrisoned the buildings. They were driven out by Red Hugh O' Donnell in 1592 and the friars returned and repaired the place. In 1601, it was again seized by English forces commanded by the renegade Niall Garbh O'Donnell. During the ensuing siege of the friary by Red Hugh O'Donnell, a mysterious explosion and fire wrecked the buildings. In the following year, Red Hugh was succeeded by his brother Rory as O'Donnell and Earl of Tirconnell and before the latter's departure for Spain, in 1607, he had set about repairing the friary for the Franciscans. The friary was granted in 1607 to Sir Basil Brooke and the Church was subsequently used for Protestant worship (Mooney 1952, *passim*). The site is now a National Monument (No. 157).

Though the explosion and fire of 1601 were without doubt responsible for the fragmentary condition of the ruins, the prolonged use of the friary as a place of burial (DG093-013005-) in modern times has raised the ground level (as much as 1.75m in places) and obscured much detail. The limits of many of the buildings were disclosed in the excavations carried out by the OPW when conserving the remains and some sections were raised to present ground level to mark important features (See Leask 1952, 53-7).

The arrangement of the buildings accords with the usual Franciscan layout and consists of a church on the S with domestic buildings ranged around a central cloister on the N. The walls are built of roughly dressed blocks and split stone with some rubble, and have ashlar quoins and dressings. The church, comprised chancel, central tower, aisled nave and transept, and is unusually long, c. 44m by c. 6.5m internally. The chancel is the best preserved section of the ruin. The battered lowered courses of the E gable are demarcated by a chamfered string course which returns along the E end of the S wall. Only the jambs and splayed ingoings of the E window remain. The recess in the interior gable face at the foot of the window was probably for a reredos structure. S of the recess is a piscina-cum-wall-press; the niche has chamfered jambs and probably had a central mullion. The remaining four windows in the S wall are represented solely by jambs and sills. The two central windows were partly built up and reduced from three to two lights. The window on the E, over the sedilia, had two lights and that on the W may have had a similar number; the latter retains some blocking at the base of the surviving ingoing. Fragmentary sections of tile sacristy walls adjoining the N and E walls of the chancel survive. A door in the chancel N wall communicated with the E range of domestic buildings and further to the W under the tower another door led to the S ambulatory of the cloister. About midway along the N wall of the church a short projection of cross-wall undoubtedly indicates the position of a tower (see Murphy 1895, 35). The deep rectangular recess beside it may have been for a tomb. The remains of a spond pillar at the W end of the nave indicate the line of

the arcade which divided the nave and S aisle. The transept is represented by the S gable and E foundation return of an altar recess. The remains of the S wall of a chapel (Leask 1952, 54-5) are no longer visible.

The cloister court was small c. 19.4m by 20.6m in size. Though only sections of the N and E arcades remain, there is sufficient evidence to indicate the general layout. Each arcade comprised two groups of five pillars set either side of a central pier which was buttressed on the court face. Five pillars survive on the N and seven on the E. The former narrow, mullion-like pillars have 'corresponding chamfered round-headed arches. The latter are dumb-bell-like with paired octagonal shafts linked by a plate which projects through the shaft on the court side; the capitals are moulded but the bases are hidden below present ground level. The arches of the E arcade are bluntly pointed. Paired shafts on the W face of the SE pier indicate that the S arcade probably had similar pillars to those on the E. On the N and E sides (and probably on the W) of the cloister the arcades supported the walls of the storeys above and the ambulatories were thus enclosed within the adjoining ranges and ceiled by the timber floors of the upper apartments. The S arcade supported a lean-to roof against the N wall of the church. The line of this roof is visible in the E wall of the ambulatory above a round-headed, chamfered arch of two orders; the inner order which rose from spiked corbels (now damaged) is missing.

The extent of the E range is defined by foundations on the N and a small section of wall at the SE. There is a corner of some other building immediately N of this range. The dormitory probably occupied the full length and width of the upper storey. There are the remains at ground-floor level of the garderobe on the N, and the night stairs, partly incorporated in the thickness of the N wall of the chancel, survives, on the S. Small loops afford glimpses of the chancel from the stairway and first-floor landing level. The N range is represented by footings which have been raised to ground level and a section of the N wall with a blocked-up door; only the jambs remain. There is no visible trace of the window recorded by Leask to the W (1952, 54). At the junction of the W and N ranges are three separate short flights of steps, which communicated with the upper apartments. The chamber on the NW, possibly the kitchen, preserves a wall-press and a narrow rectangular window in the S wall. The NW corner of this chamber has been eroded away by the sea. Little remains of the W range. There is a curious narrow passage at its S end; it is partly built into the N wall of the nave and has a small splaying squint. The function of this passage is unclear.

Excavation licence number 00E0765

A new pumping house is to be built on the east shore of the channel of the River Eske beside the remains of Donegal Friary, as part of a Donegal Town main drainage scheme. The site is located to the south of Donegal Town. The river is tidal at this point. Karl Brady, of the Underwater Archaeological Unit, Dúchas The Heritage Service, observed the remains of a stone-and-wood structure in the foreshore close to the site of the proposed pumping house. He identified this as the remains of a possible jetty. The writer visited the site during test boreholing to ensure that the jetty was not damaged during this work. A complete site assessment is to be carried out prior to construction of the pumping station. (Excavations Bulletin 2000)

Rosanne Meenan, Roestown, Drumree, Co. Meath.

Monitoring of pipe-laying works by Martin A. Timoney under licence No. 06E0337 in the townlands of Glebe, Revlin, Doonan, Drumark, Drumstevlin and Drumkeeghan was completed in early 2007. There were no archaeological discoveries during the monitoring. Construction works for the pumping station close to Donegal Abbey

(DG093–013) were monitored. All of the ground in the estuary of the River Eske had been thoroughly eroded by the tide.

The above description was derived from the 'Archaeological Survey of County Donegal. A description of the field antiquities of the County from the Mesolithic Period to the 17th century.' Compiled by: Brian Lacey with Eamon Cody, Claire Cotter, Judy Cuppage, Noel Dunne, Vincent Hurley, Celie O'Rahilly, Paul Walsh and Seán Ó Nualláin (Lifford: Donegal County Council, 1983). In certain instances the entries have been revised and updated.

Beltany Stone Circle (No. 463)

This monument, on a hilltop with an extensive outlook in all directions, is known as Beltany Stone Circle. It lies 3.2km NNW of the cemetery of megalithic tombs centred on Kilmonaster Middle townland. It consists of a disturbed artificial platform now c. 0.5m high, perhaps the base of a cairn, bounded by a circle of large stones. The circle is c. 45m in diameter. At present 64 stones stand in the circle, and there may originally have been up to 80. Some large stones are exposed in the disturbed interior. It has been suggested that there may have been a megalithic chamber within the circle (O.D. 1939), perhaps a passage tomb (Ó Nualláin 1995, 15).

The earliest accounts of the site seem to be those in the unpublished documentation of the Ordnance Survey dating to the years shortly before the mid-19th century. It is clear that the monument was considerably disturbed at this stage. According to the OS Memoir (1836), there had been a cairn or 'vast heap of stones' within the circle, but it had been removed to form fences in the vicinity. Thomas Fagan (1845-8), who saw the monument in 1846, observed that both the interior and the enclosing circle of stones were much disfigured. He was informed that 'the interior was raised with earth and stones covering and encircling sepulchral graves' and that decayed bones were unearthed here. Excavation would be required to determine whether the enclosed platform is the base of a cairn and whether there was any form of megalithic chamber here. OS Memoirs, Raphoe parish (1836), 1, 27; Fagan 1845-8, book 10, 28; H. Morris 1939 (Beltany); O.D. 1939 (Beltany); Lacy 1983, 72-3, no. 329 (fig.); SMR 1987, 70:26B; Ó Nualláin 1995, 15; RMP 1995, 70:26/1.

The Beltany Stone Circle, National Monument Number (463), consists of a disturbed artificial platform c. 0.5m high defined by a circle of large stones of which sixty-four remain but which originally may have numbered about eighty (Boyle-Somerville 1922-3, 212). The stones are of varying sizes and one of them on the NE is covered on the internal side with cupmarks (there is possibly one cupmark on the external side also). The interior of the site was considerably interfered with in the 1930's (Davies 1939b, 293). Great numbers of loose stones are now lying up against the perimeter megaliths and dotted about the surface of the interior. Several stones protrude from the surface of the interior and in the SW sector there is a standing stone 1m high, almost an equilateral triangle in plan, each side .6m. Partially exposed in the ground to the W of the standing stone is the top of a long stone, possibly that referred to by Davies as suggesting a megalithic chamber. To the SE of the circle is an out-lying standing stone 2m high. Boyle-Somerville suggested that this outlier as well as other features of the adjacent horizon were employed by the circle builders to determine astronomical alignments. The circle is situated on the summit of Beltany Hill in good land with excellent views. Sixty metres to the SW of the stone circle and on a slight terrace just below the summit of the hill, is a circular area 35m in diameter, open on the W side but defined elsewhere by stone-wall field boundaries. The area is marked as a 'Graveyard' on the 1st edition of the OS 6-inch maps and as an 'Old Graveyard' on the 2nd edition.

It is not clear what the exact nature of this site was but its proximity to the stone circle might suggest that they were in some way related.

SMR Number TYR 016:046

On a low eminence on the S bank of the River Derg, with good views in the immediate vicinity, but higher ground in the distance. The pillar-like stone stands an impressive 2.3m tall & is sub rectangular in cross section, measuring 0.8 m E/W x 0.55m N/S. The stone tapers to a rounded point & leans slightly to S. There is evidence for animals using it as a rubbing post & animal trampling round the base. Nonetheless, the stone appears to be secure.

SMR Number TYR 016:017 TODD'S DEN

On a terrace of flat lane, on a slight eminence, with TYR 016:056 c.30m to SE. The site, which consists of a largely intact gallery, has been all but stripped of its cairn & is slightly over 10m N-S x 6.5m E-W & 1.4m high. It consists of a series of orthostats which line the E & W sides of the gallery - at least 3 of those on the E side have been displaced. The gallery was roofed by 4 large flat slabs, some of which have fallen into the tomb. E of the entrance at the S end may be the remains of a peristalith.

SMR Number TYR 016:018

On a gently sloping terrace with fine views S & W. The site has become incorporated into a stone field walk. Close examination of the megalith reveals at least 4 or 5 slabs set in 2 parallel lines forming the chamber sides. A low sill slab at the S end marks the entrance & the flat capstone towards the N end seems to delimit the monument there. The capstone has slipped to E, causing side slabs to splinter & splay out. The more N of the 2 side slabs is said to have ogham markings, but this is unlikely.

The potential effects on these National Monuments are addressed below in Section 13.4.

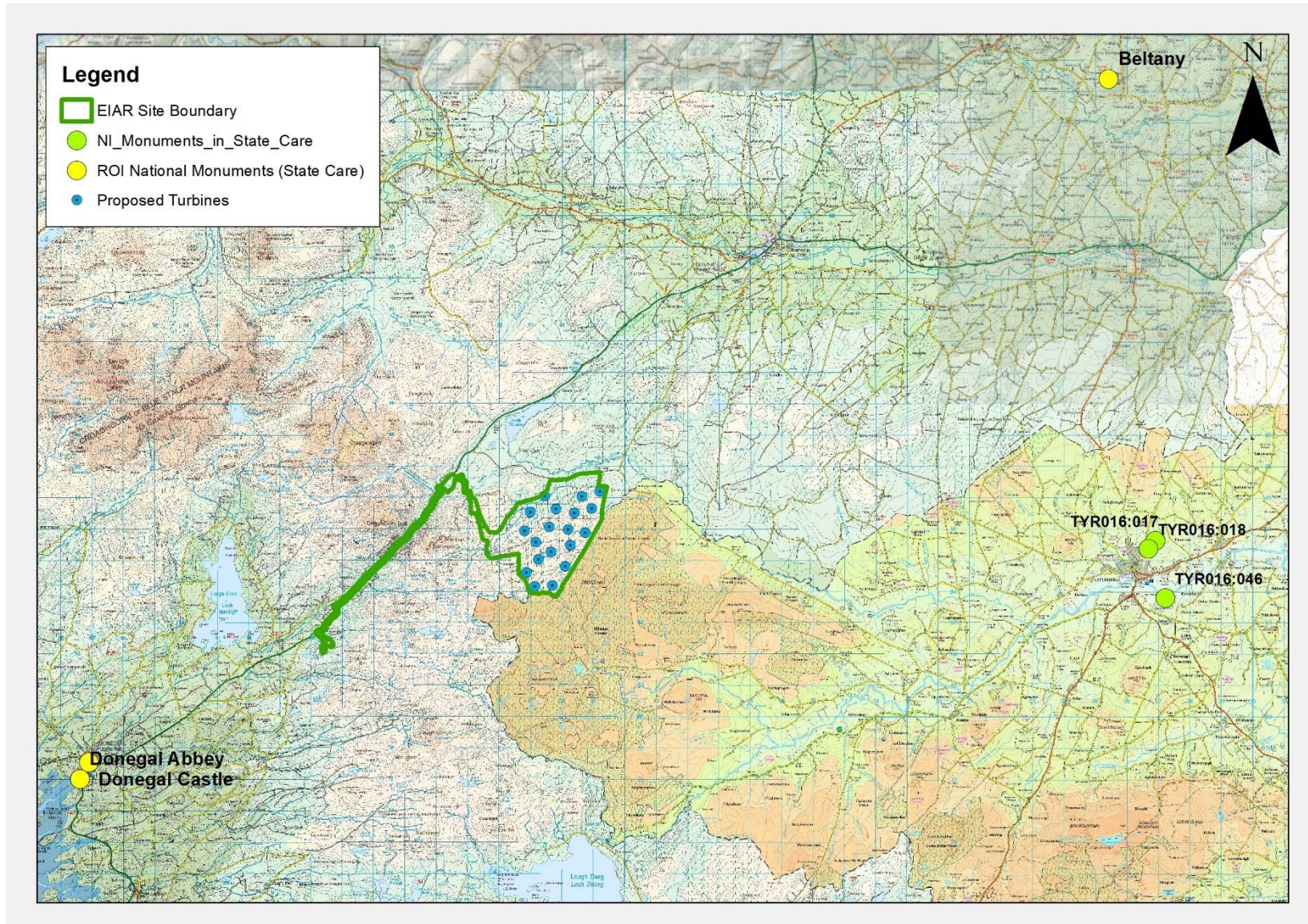


Figure 13.3: National Monuments within 20km of proposed turbines

13.3.1.1.3 Recorded Archaeological Monuments located within study area boundary

No recorded archaeological monuments are located within the study area boundary for the site of the Proposed Development. The nearest recorded monuments to the Proposed Development are discussed below in Section 13.3.1.1.5.

13.3.1.1.4 New Potential Archaeology Recorded Within the Proposed Development Area

All areas proposed for development were examined by a walkover survey. No intrusive investigation was undertaken and the survey was limited to a visual inspection only. No new potential archaeological features were noted within the study area boundary. It should be noted, however, that bogs (both upland blanket peat and raised bogs) are regarded as areas of archaeological potential in terms of the occurrence of both monuments and artefacts within and below the peat. In this regard while no new monuments were identified during the field inspection for this assessment, the potential still exists for the uncovering of sub-surface remains or artefacts during the construction phase of the project. This potential effect is mitigated against (see below).

13.3.1.1.5 Recorded Archaeological Monuments within 5km of any Turbine

For purposes of assessing effects on the setting of recorded monuments in the vicinity of the Proposed Development, all RMPs sites within 5km are included here. This was calculated in GIS and is based on the distance of RMPs to any turbines. The density of monuments within 5km is low within none within 1km of any proposed turbine.

Fifteen (15) recorded monuments are located within 5km of the nearest proposed turbine and are included here for purposes of establishing the archaeological context of the surrounding environs of the Proposed Development site. The majority of the monuments within 5km were not individually visited, however, being located on private lands. Where possible the nearest point along the public roads were utilised for the assessment in consultation with the Zone of Theoretical Visibility (ZTV) mapping and Landscape and Visual Impact assessment (Chapter 12 of the EIAR), particularly for monuments which may be perceived to have visual dominance or prominence within the landscape.

The 15 monuments are listed in Table 13.3 with the distance of the monument to the nearest proposed turbine. All of the monuments are located in excess of 1km from the nearest proposed turbine.

Table 13.3: RMPs within 5km of the nearest turbines

SMRS	ITM E	ITM N	DESCRIPTION	TOWNLAND	Turbine	Distance to nearest Turbine (M)
DG077-014	609863	892026	Ringfort - cashel	Goland	19	4874
DG077-021	611077	890720	Megalithic tomb - portal tomb	Carrickmagrath	19	4012
DG077-025	605269	891263	Megalithic structure	Loughsallagh	18	4707
DG077-028	610306	891063	Standing stone	Meenbog	19	4029

DG085-005	602557	885333	Megalithic structure	Tawnawully Mountains	10	4241
DG086-001	606085	890143	Enclosure	Cashelnavean	18	3347
DG086-002001	607747	890202	Megalithic tomb - unclassified	Croaghonagh	18	3157
DG086-002002	607737	890188	Standing stone	Croaghonagh	18	3142
DG086-003	611739	890033	Enclosure	Trusk	19	3839
DG086-004	612619	887764	Enclosure	Tievecloghoge	19	3521
DG086-005	612662	890213	Redundant record	Trusk	19	4630
DG087-004	612947	886892	Ringfort - cashel	Tievecloghoge	19	3817
TYR014:001	205180	383050	ISLAND, Possibly CRANNOG	Slievedoo	1	2214
TYR014:002	205513	383860	A.P. Site - Crannog?	Slievedoo	3	1506
TYR022:001	207645	380795	Holy Well	Slievedoo	2	3426

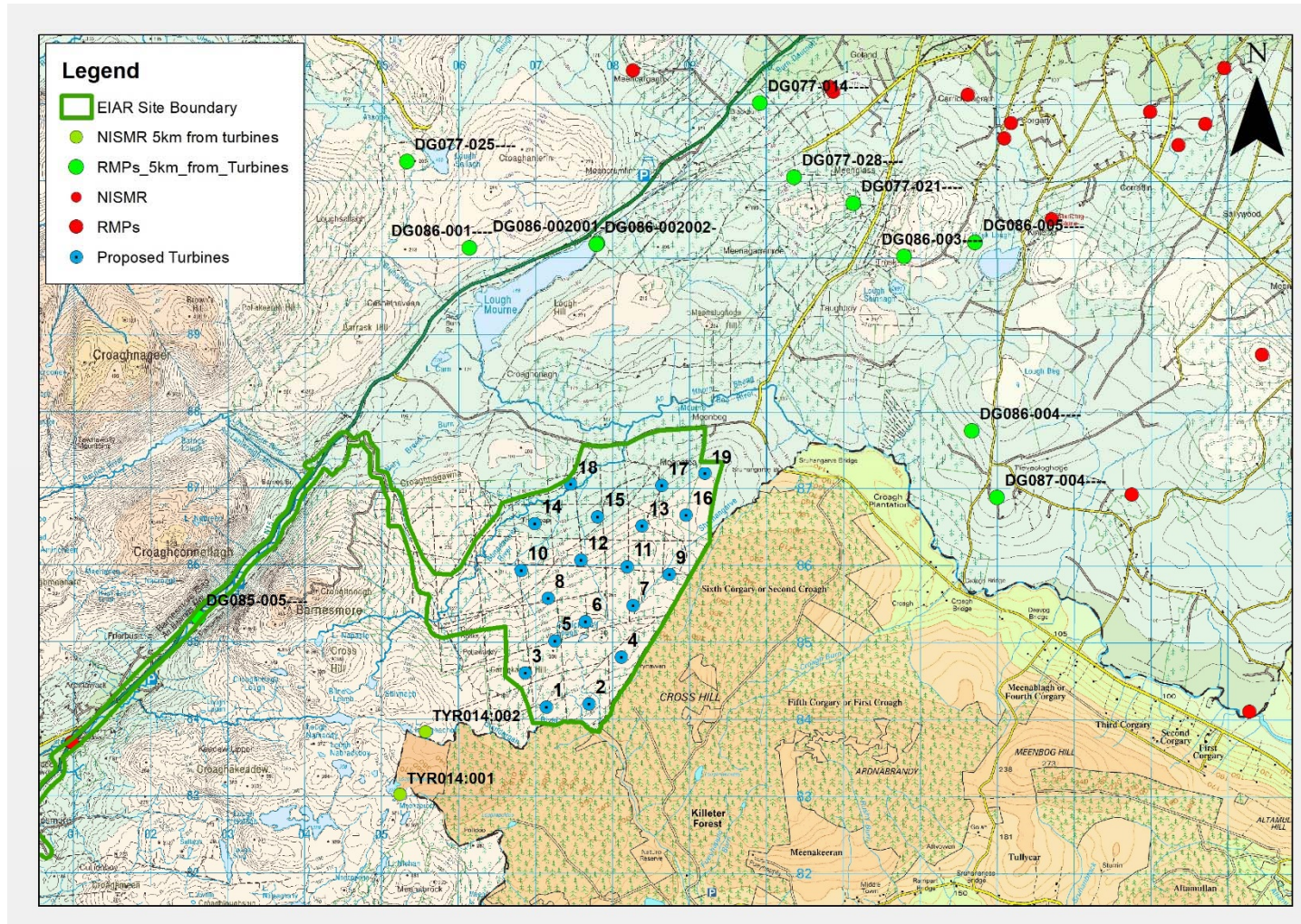


Figure 13.4: RMPs and SMR (NI) within 5km of the Proposed Development

The Prehistoric Period

Megalithic Tombs

Four (4) megalithic structures or tombs are located within 5km of the study area boundary. They comprise a portal tomb and three unclassified structures. Megalithic tombs are burial chambers, sometimes with an antechamber or small closed end-chamber. They are roofed by slabs laid directly on the side-walls which often have one or more rows of outer- walling. Unclassified examples of megalithic tombs cannot be classified as a court tomb, portal tomb, passage tomb or wedge tomb. These may date from the Neolithic to the Bronze Age (c. 4000 - c. 500 BC).

Portal tombs are another type of megalithic structure which comprise a single, short chamber formed by two tall portal-stones, two sidestones and a backstone. Sometimes a stone between the portals closes the entry. The chamber is covered by a roofstone, often of enormous size, which slopes down from the front towards the rear. Cremation was the preferred burial rite and these monuments date to the Neolithic from 3800 to 3200 BC. Court tombs comprise a long rectangular or trapezoidal cairn, at the broader end of which is usually an unroofed forecourt area which gave access to the roofed burial gallery, placed axially within the cairn and divided into two to four chambers. The cairn was retained by a kerb of upright stones or drystone-walling. Evidence indicates that the galleries were used for repeated burial, mostly cremations, over a long period of time - between 4,000 and 3,500 BC.

Standing Stones

Two standing stones are located within 5km of the nearest proposed turbine. They are a common feature of the prehistoric Irish landscape consisting of single, upright stones. They are known by various names such as gallán, dallán and long stone. All standing stones are not necessarily of the same date or have the same function. Excavations of standing stones have shown that some mark prehistoric burials and some may have had a ritual or commemorative function. They have similar axis to standing stone pairs and may therefore date to the Bronze Age (2400-500BC).

The Early Medieval Period

Ringforts, Enclosures, Cashels and Crannógs

Ringforts, enclosures, cashels and crannógs comprise the most numerous monument type within 5km of the study area boundary (7). Ringforts comprise earthen monuments while cashels take a similar form to the latter but are constructed using stone. Enclosures may represent the remains of ringforts or cashels but may not retain enough features to classify them as such or fall outside the acceptable size range for these monuments. Ringforts consist of a circular or roughly circular area enclosed by an earthen bank formed by material thrown up from the digging of a concentric ditch on its outside. Ringforts are usually enclosed by a single bank (univallate) while bivallate or trivallate ringforts i.e. those enclosed by double or triple rings of banks are less common. The number of banks and ditches enclosing these monuments are considered to reflect the status of the site, rather than the strengthening of its defences. Archaeological excavation has shown that the majority of ringforts functioned as enclosed farmsteads, built during the Early Christian period (5th – 9th century A.D.). Excavation within the interior of the monuments has traced the remains of circular and rectangular dwelling houses as well as smaller huts probably used to stall animals. The enclosing earthworks would also have protected domestic livestock from natural predators such as wolves and foxes.

Crannógs are another form of settlement site in Ireland which date to between the 6th-17th century A.D. They differ from ringforts and cashels in their siting which is typically

in a watery environment such as a lake or bog. They comprise 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. Two (2) possible crannógs are located within 5km of the Proposed Development site in County Tyrone, one of which was detected through aerial photography and is classified as an 'A.P.site'.

Sites with religious or ritual association

Holy Wells

One (1) holy well is located within 5km of the nearest turbine in County Tyrone. These sites 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. Holy wells may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards.

13.3.1.1.6 Archaeological Excavations Undertaken Within Vicinity of the area of the Proposed Development

Several entries relate to monitoring of ground works associated with the Clar-Barnesmore road realignment to the west of the area of the Proposed Development and archaeological testing in advance of the works (see entry extracts below) are listed in the Excavations Bulletins Database:

2000:0169 - CLAR-BARNESMORE, Donegal

County: Donegal Site name: CLAR-BARNESMORE

Excavations.ie number: 2000:0169 **License number:** 99E0167 ext

Author: Declan Moore, Moore Archaeological and Environmental Services Ltd, 200 Dún na Coiribe, Galway, for Irish Archaeological Consultancy Ltd.

Site type: Monitoring

ITM: E 603705m, N 885400m

Latitude, Longitude (decimal degrees): 54.716663, -7.942499

Monitoring of construction works on the proposed Clar-Barnesmore road realignment was carried out between the townlands of Spierstown and Friarbus, Co. Donegal, between 12 April 1999 and 10 April 2000. The underlying geology consisted of gleys, with peaty gleys, inter-drumlin peats and acid-brown earths as associated soils. These strata consistently overlay a compact, blue/grey, sandy boulder clay and limestone bedrock exposed at the base of excavations. An archaeological excavation was carried out at Keadew Lower, a drying kiln (Excavations 1999, 42, 99E0379). Advance archaeological testing was also carried out at Friarbus townland, on a series of modern field ditches (Excavations 1999, 42, 99E0505). Nothing further of major archaeological significance was noted.'

2001:275 - Glenmore-Ballybofey, Donegal

County: Donegal Site name: Glenmore-Ballybofey

Excavations.ie number: 2001:275 **License number:** 01E0609

Author: Eoin Halpin, ADS, Unit 48, Westlink Enterprise Centre, 30-50 Distillery Street, Belfast BT12 5BJ.

Site type: Monitoring

ITM: E 613662m, N 894341m

Latitude, Longitude (decimal degrees): 54.796824, -7.787548

Donegal County Council propose, as part of the ongoing works on the R252 Ballybofey to Fintown road, to improve the section from Glenmore picnic area in the west to

Ballybofey in the east, a distance of just over 6km. However, the works are to be divided into two sections, with the first running the 2.3km to Dooish schoolhouse. The first section of the scheme will involve a combination of road-straightening, widening and levelling, and includes the strengthening of a number of bridges. The width of the final carriageway will be 5m; the present one is variable but is on average 4m wide. Examination of the roadside verges and hedges revealed that, apart from one or two sections, there is adequate room within the existing road corridor for the roadworks to take place. A series of licensed monitoring visits were undertaken during the course of the works. Particular attention was paid to the parts of the scheme where it passed close to the site of Templemonaghan and where it crossed the line of the unusual mound noted in the walk-over. Nothing of archaeological interest was noted in the former case, and the mound, on stripping, proved to be a natural feature.'

2005:341 - MEENCRUMLIN, Donegal

County: Donegal Site name: MEENCRUMLIN

Excavations.ie number: 2005:341 **License number:** 05E1153

Author: Sinclair Turrell, ADS Ltd, Windsor House, 11 Fairview Strand, Dublin 3.

Site type: No archaeological significance

ITM: E 607592m, N 891383m

Latitude, Longitude (decimal degrees): 54.770373, -7.882014

Esri, DeLorme, USGS, IFL

Test excavation was conducted at this site in advance of the proposed N15 Ballybofey–Stranorlar bypass. This site is situated in an area of blanket bog, which was identified in the EIS as an area of archaeological potential (AAP8). Although there were no indications of archaeological remains on the surface, blanket bog conditions are conducive to the preservation of such remains.

Twenty-two trenches were excavated across the site using a mechanical excavator fitted with a toothless bucket. Nothing of archaeological significance was found within the limits of the excavation.

2005:323 - CROAGHONAGH, Donegal

County: Donegal Site name: CROAGHONAGH

Excavations.ie number: 2005:323 **License number:** 05E1159

Author: Sinclair Turrell, ADS Ltd, Windsor House, 11 Fairview Strand, Dublin 3.

Site type: No archaeological significance

ITM: E 607526m, N 888942m

Latitude, Longitude (decimal degrees): 54.748438, -7.883103

Test excavation was conducted at this site in advance of the proposed N15 Ballybofey–Stranorlar bypass. This site is located adjacent to the disused railway in a field of unimproved pasture on a hillside that slopes gently downwards to the north. A north–south–running low bank of large limestone slabs, overgrown with mosses and grass, was identified as a possible pre-bog wall in the EIS (AAP9). The wall survives aboveground for a distance of c. 35m and is on average 0.8m wide and 0.3m high. The site was characterised by a system of 'lazy beds', which are visible on both sides of the road, indicating that the field was cultivated in the past.

Fourteen trenches were excavated across the site using a mechanical excavator fitted with a toothless bucket. Nine stone-lined drains were uncovered. These drains appeared to be associated with the construction of the railway. One of the drains ran under the possible pre-bog wall, indicating that these stones were marking the line of the drain. Nothing of archaeological significance was found within the limits of the test excavation.

13.3.1.1.7 Topographical Files of the National Museum

A search of the National Museum of Ireland database of townlands, within and adjacent to the Proposed Development was undertaken. This was done to ascertain the artefact bearing potential of the bog in the vicinity of the site of the Proposed Development. Two townlands produced archaeologically positive results and are described as follows:

Croaghonagh

This find spot is located just outside the north-eastern site boundary c. 500m from the entrance to the site of the Proposed Development. It is located at the edge of a forestry plantation in blanket bog.

Reg: 2006:31
Monument: None
Finds: Length of straw(?) rope
Townland: Croaghonagh
Parish: Donaghmore
Barony: Raphoe
Vicinity of:
County: Donegal
OS 6" sheet: 77 47.9 from west, 35.7 from south
ITM: 608062, 887955

Found in bog, excavated by NMI

Found in turf cutting under 50cm of cutaway bog

Description by Andy Haplin to E.P Kelly (dated 06/07/2006)

Discovery made while cutting turf (by hand) within a broad (c. 4m) fire-break, which had been excavated into bogland at the edge of an area of forestry plantation. The site is an area of blanket bog, situated at an altitude of approximately 180m on the southern slopes of Lough Hill (221m), between Ballybofey and the Barnesmore Gap

On inspection, it emerged that the object was a small rope or plaited cord (up to 2cm thick), probably of vegetable fibre. Interestingly it lay upon a layer of gravel which could clearly be seen to be an isolated layer within the peat. The gravel layer was visible in cross section created by the digging of a drainage ditch along the eastern edge of the fire-break, the gravel extended for approximately 2.5m in a N-S direction, with roughly 50cm of peat below it (the base of the peat was not visible but estimated by probing) and approximately 40cm of peat above it. The overlying peat had clearly been cut away on several occasions, however, and there was probably a minimum of 1.0m-1.5m of peat overlying the rope originally. On the east side, the gravel had been cut away by the digging of the drainage ditch, but on the west it appeared to end in a roughly straight edge, forming a linear layer approximately 45cm in width (e-w). Similar gravel horizons were visible in the cross section of the peat, at approximately the same level, further north, but it was impossible to say whether these ever formed a continuous feature. Limited excavation of the gravel revealed no obvious cut marks and it remains uncertain whether the gravel was deposited by natural or human agency.

Exploratory excavation around the rope revealed that it was confined to a relatively small area (roughly 30cm square) and was not connected to any other object or feature. Two pieces of wood lay on the gravel, one immediately beside the rope and the other about 40cm to the north. Neither showed evidence of having been worked, however, and they were not attached to the rope in any way. The larger (more distant) piece was retained for possible radiocarbon dating. Because of the extreme fragility of the fibres

in the rope, it was decided not to attempt to excavate it on the spot. Instead, an island of gravel and peat around it was isolated and the whole block lifted in one piece. This was brought back to the Conservation Laboratory and I have asked the Head of Conservation to arrange for the rope to be excavated under controlled conditions asap. A small vertical section of peat overlying the rope was also taken and retained for possible examination and/or radiocarbon dating.

Corlea

Two finds were recovered within bog in Corlea townland, c. 8km to the east of the site of the Proposed Development.

1)

Reg: 1951:114
Monument: None. Found underneath 8 feet of bog
Finds: Flint spearhead (polished)

Townland: Corlea
Parish: Kilbarron
Barony: Tirhugh
Vicinity of: Ballyshannon
County: Donegal
OS 6" sheet: 107,108

Flint javelin or spearhead. Round base, slightly concave sides tapering to a point
Length 8.0cm. Maximum width 3.4cm, maximum thickness 0.7cm.

The head is made from light grey flint, one surface being the untouched cleavage surface; the other is the outer or cortex surface which has been beautifully smoothed and polished.

Secondary trimming along edges occur on both surfaces; in the cleavage surface it is hollow; in the cortex surface it is bevel in deeper? and the trimming facets are softened by the subsequent polishing on the surface. On the cleavage (feat) surface the percussion waves show that the blade was struck from the pointed end Perhaps early to middle Bronze age (1500 BC) The Donegal specimen is made from a triangular flake of flint, one surface being the natural cleavage plane and the other ground and polished smooth.

2)

Reg: 1962:103
Monument: None. Found in bog
Finds: Flint flake
Townland: Corlea
Parish: Kilbarron
Barony: Tirhugh
Vicinity of:
County: Donegal
OS 6" sheet: 108 14.5cm from w, 31m from N

Flint flake found 3ft deep in bog

Flint flake. Light buff-coloured. Irregular outline but roughly rectangular. Striking platform and bulb of percussion present. Bulbar face place (plane?) save for one spot - at the bulb- where a flake has been detached. From the second face two large longitudinal flakes have been detached at an angle to each other: the cross section is therefore a feathered triangle. The platform end on this face is blunted, as if, to form a

tang. The opposite narrow end is irregular and on one small portion of it a piece of cortex still remains
L. 5.35cm, max W 3.2cm, max t. 9mm.

13.3.1.2 Proposed Underground Cable Grid Connection Route

It is intended that the Proposed Development will connect to the national grid via the existing Clogher 110 kV Electricity Substation (Clogher Substation), located in the townland of Cullionboy, Co. Donegal. The Clogher Substation is located approximately 6.2 kilometres southwest of the proposed development at its closest point. For a detailed description of the proposed grid connection route refer to Section 4.3.7 of the EIA.

13.3.1.2.1 National Monuments

No national monuments in state care are located along the proposed grid connection route.

13.3.1.2.2 Recorded Archaeological Monuments

Two recorded monuments are located along the grid connection route and are listed in Table 13.4 below and described in Appendix 13.1.

Table 13.4: Recorded monuments within 50m of grid connection route

RMPS/ SMR	ITM E	ITM N	TOWNLAND	CLASSIFICATION	DISTANCE FROM CABLE
DG085 -005	6025 57	885333	TAWNAWULLY MOUNTAINS	Megalithic structure	19.84 metres
DG094 -026	6009 10	883708	KEADEW UPPER	Kiln	10.47m (now removed archaeologically)

Megalithic Structure DG085-005

This 'site' is located 19.84m from the proposed underground cabling route adjacent to the N15 National road. This is described by the National Monuments Service as 'Marked in gothic script on current edition of the Ordnance Survey map as 'Cloghaturras'. The entry for this monument on the Historic Environment Viewer does not describe the tomb in detail as there is no visible surface trace of the structure which is marked on the early 1900s (2nd Edition OS) map. This accords with the field assessment carried out by Tobar Archaeological Services as part of the assessment of this monument. No tomb survives on the site and the river bank is strewn with large boulders, likely to be erratics and not archaeological in nature. In order to avoid any potential direct effects on the 'site of' the Megalithic Structure DG085-005 it is recommended that the excavation of the cable trench for the grid connection should not be located in close proximity to same. Some mitigation measures are proposed therefore. As the cable is proposed to be underground, no indirect effects (impacts on visual amenity) will occur. Despite, the lack of above ground remains of DG085-005, mitigation measures for the protection of the 'site of' the monument are recommended in Section 13.4 of the EIA.

Kiln (DG094-026)

This monument was excavated and removed in advance of the Clar-Barnesmore road realignment is located c. 2.3km to the south-west of the aforementioned megalithic structure adjacent to the N15 National Road. This monument is situated immediately adjacent to the N15 National Road and was archaeologically excavated in advance of

the Clar-Barnesmore road realignment. The grid connection route will extend along the N15 in this area. It is described on www.archaeology.ie as follows: 'Excavation was carried out on the site of a drying kiln between 28 June and 3 July 1999, before the proposed Clar-Barnesmore road realignment. Topsoil, sod and a single stone fill of the bowl were removed, exposing a kiln built into a natural ridge of peat. The kiln comprised a circular bowl with outwardly battered sides, built of randomly coursed, small to medium-sized, roughly rectangular stones with two courses of larger stones at the base, and an outwardly splayed, north-west/south-east-aligned flue, built of upright slabs and roofing lintels (only one of which survived). The bowl had been deliberately backfilled. A stone surface built on the peat ridge surrounded the kiln. The feature had been extensively disturbed at the south-east end of the flue by construction works associated with the present N15 embankment and the earlier construction of the embankment for the railway to the south. It was not possible from the evidence gathered to arrive at a definite date for the kiln.'

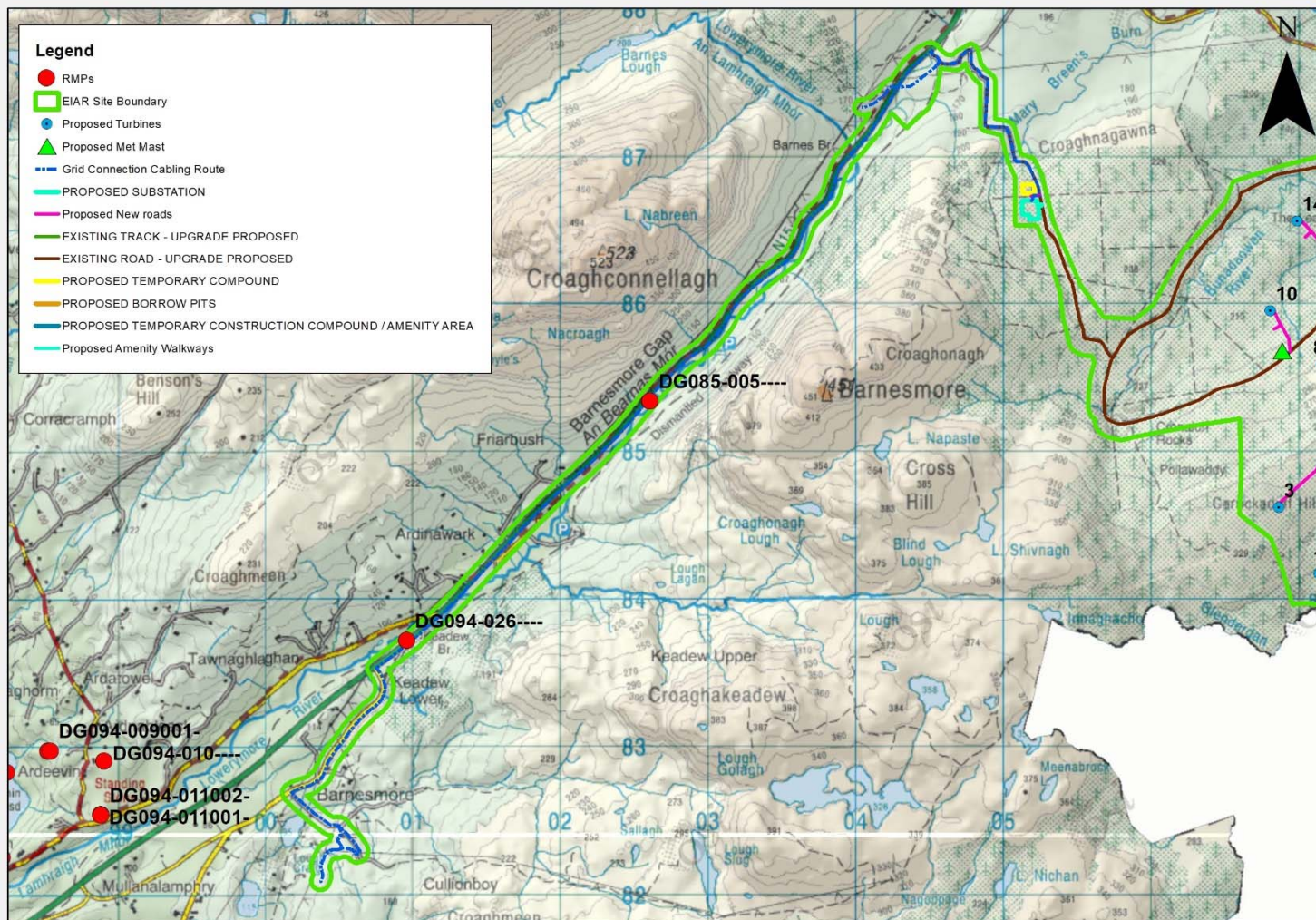


Figure 13.5: RMPs located along the proposed underground grid connection route

13.3.1.2.3 New potential archaeological sites

No new potential archaeological sites were noted along the proposed grid connection route during the site inspection.

13.3.2 Architectural and Cultural Heritage

For the purposes of this report, architectural heritage includes known (documented) and newly recorded features, if present.

- Record of Protected Structures (RPS)
- NIAH structures
- NIAH Garden Surveys
- Any other structures / features noted during field assessment
- Cultural heritage items (tangible assets) likely to be effected by the Proposed Development

13.3.2.1 Proposed Wind Farm

13.3.2.1.1 Protected Structures and Listed Buildings (NI)

The list of protected structures as supplied by Donegal County Council web site was consulted for protected structures which may be present within the site of the Proposed Development site. The townlands within the are of the Proposed Development were entered into the list and no protected structures are located within the study area or within close proximity to the latter.

The digital dataset for the Donegal RPS was obtained from Donegal Co. Co. and was added to the base mapping in order to accurately assess any potential effects to same. The dataset of the Listed Buildings (NI) was also downloaded and added to the base mapping in order to determine if any such structures were located in the immediate vicinity of the site of the Proposed Development.

No protected structures or listed buildings are located within the EIAR study area boundary.

Only one listed building (NI) is located within 5km of any proposed turbine (HB10/01/014 Thatched cottage at Meenblagh/Fourth Corgary), County Tyrone. No Protected Structures are located within 5km of any proposed turbine however. Historic Buildings Northern Ireland are described on the Historic Environment Viewer (<http://appsc.doeni.gov.uk/buildings>).

HB10/01/014 Thatched cottage

This structure is located 4.8km from T9 (i.e. the nearest proposed turbine). A building is shown on this site on the OS map of 1833 / 34, but it is not noted in the contemporary valuation. The second valuation of 1858 tells us that the house was then occupied by a Neil McFergus, with Sir Robert Ferguson the immediate lessor. The rateable value is recorded as a modest 10/-. A survey of this building carried out in 1992 by Colin Hatrick of EHS reported that the layout and roof structure were original and that the roof was in a fair condition. In 1994 Michele McFaul reported to EHS that re-thatching was required; since then the thatched covering has deteriorated, but a restoration scheme is contemplated. The building faces south-east and is sited a field's length away from the road at the end of a lane. This road travels south-west from the T junction it forms with the road from Castlederg to Donegal Town. Donegal Town is about nine miles away. The house is seen about 300 yards from the T junction. On the lane approach to

the house a new (NIHE) provided" replacement " dwelling has been built. A two structural bay direct entry thatched house with harled and painted stone walls. The roof is thatched between concrete parapets and each gable rises to a chimneystack with a narrow corbelled capping. The timber sheeted entrance door is protected by a square jambed windbreak porch, with flat concrete roof. The entrance is flanked on either side by a vertically sliding window with sashes divided into two vertically. An outbuilding abutting the left (south-west) gable is roofed with corrugated iron terminated by a concrete parapet. The door is timber sheeted. On the opposite gable there are the remains of another corrugated iron roofed structure this time with a timber plank entrance door. At the rear there are two window openings. That towards the north-east end is vertically sliding with plain sashes and chamfered sash stops. The other window, positioned almost half way along the elevation, is plain.

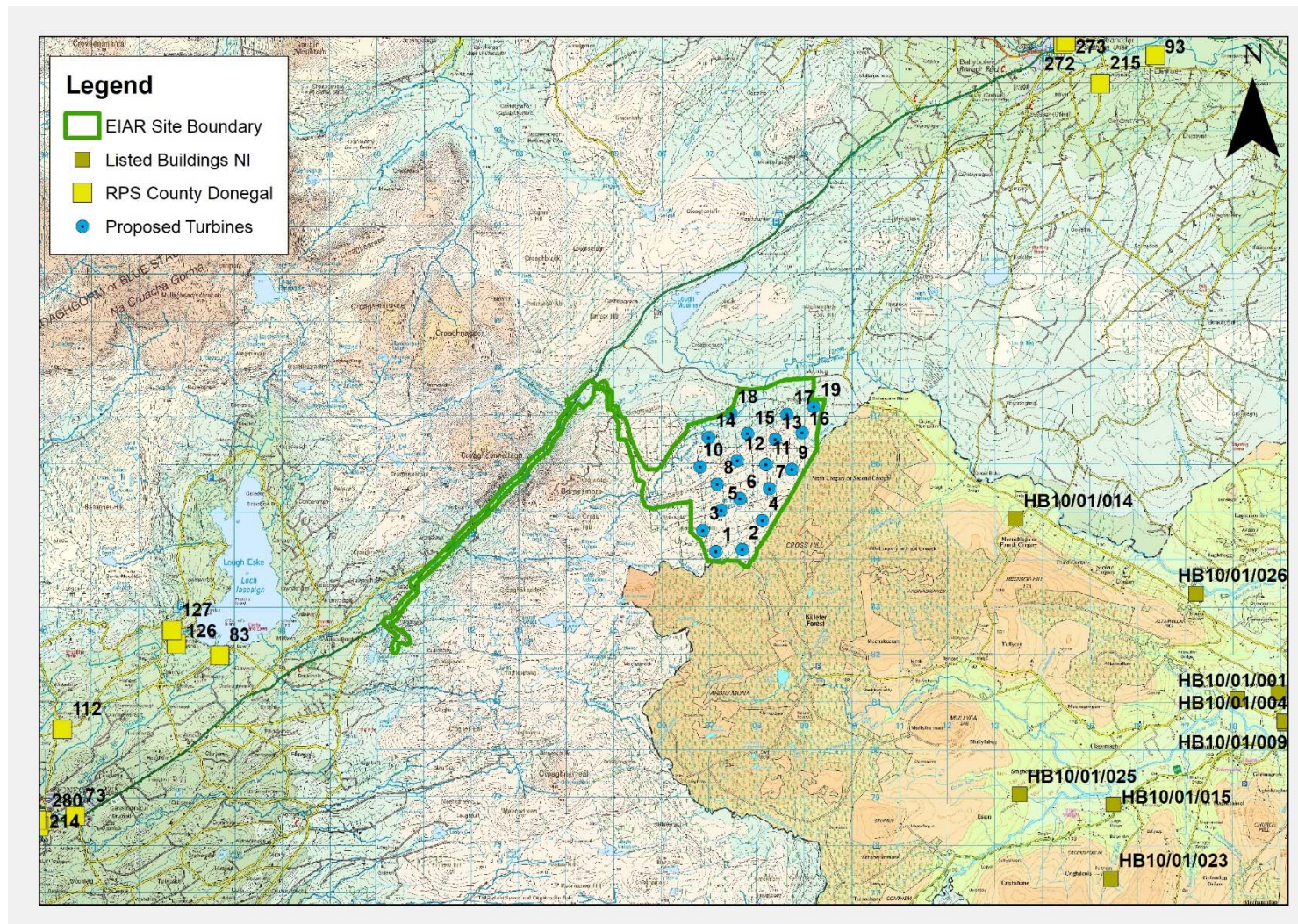


Figure 13.6: RPS structures and Listed Building (NI) within 5km of any proposed turbine as referenced in text above

13.3.2.1.2 National Inventory of Architectural Heritage (NIAH)

No structures listed in the National Inventory of Architectural Heritage (NIAH) are located within the site of the Proposed Development. Six NIAH sites are located within 5km of the nearest proposed turbine and are listed below in Table 13.5 and shown in Figure 13.7. The descriptions of these sites are presented in Appendix 13.2.

Table 13.5: NIAH sites located 5km from any proposed turbine

NIAH REF.	ITM E	ITM N	TOWNLAND	Classification	Turbine	Distance (m)
40908501	601920	884311	Keadew Upper	Bridge	3	4898
40908604	605128	888467	Croaghonagh	Bridge	14	2631
40908605	604719	888494	Cashelnaveen	Barracks	14	2944
40908602	608107	887602	Meenbog	Bridge	17	731
40907707	609444	891955	Meencargagh (Dooish)	School	19	4760
40907714	611589	891013	Carrickmagrath	Church/Chapel	19	4526

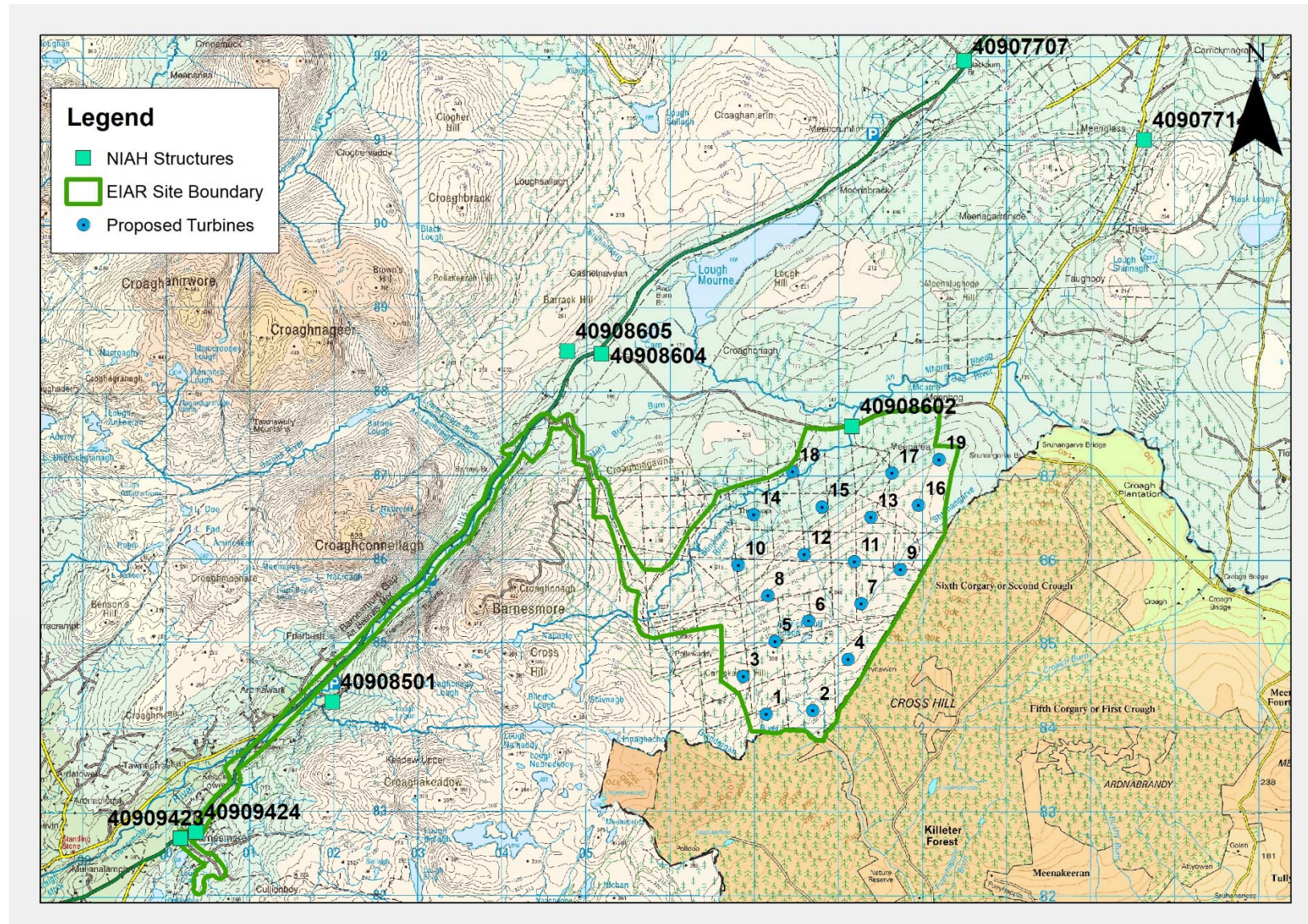


Figure 13.7: NIAH structures within 5km of the nearest proposed turbines

13.3.2.1.3 NIAH Garden Survey

Donegal contains many Historic Gardens and Demesnes, which are characteristic of a particular period of settlement in the county. Many no longer have any visible surface trace with some demesnes now afforested. The objective of the NIAH garden survey is to begin a process of understanding the extent of Ireland's historic gardens and designed landscape. Sites were identified using the 1st edition Ordnance Survey maps. These were compared with current aerial photography to assess the level of survival and change. This assessment is not an indication of a site's heritage importance. Fieldwork is now in progress to compile more accurate data and site assessments. The results will be added to the NIAH website as this work progresses.

Various factors have contributed to many of the significant changes that have occurred to such gardens and demesnes. Changes in aesthetic values and the development and expansion of our cities and towns have played a part, however, the most significant are a direct result of 150 years of history, particularly changes in land ownership arising from the Encumbered Estates Act 1849 to the Land Acts of the late nineteenth and early twentieth centuries.

Gardens within 3km of the nearest proposed turbines are included in the assessment. None are located either within or within 3km of any proposed turbine with the nearest being located 4km to the north-east in Meenglass in the townland of Carrickmagrath Taughboy. The garden was once a large heavily wooded demesne with a large house known locally as 'The Castle'. Not shown on 1st edition OS. There was a gate lodge, outbuildings and walled garden with glasshouse in the south corner. Main road, which went through the demesne was known as Chancellor.s Road and was altered at the south end sometime before 1906. At that time there were five entrances. No buildings, except remnants survive and some mature deciduous trees in the vicinity of the house. Not in use since the 1940s and subsequently afforested. The second crop is now mature. This site no longer constitutes an historic garden, demesne or ornamental designed landscape of interest. The only public access is via Coillte paths.

13.3.2.1.4 Language and the Gaeltacht

The site of the Proposed Development is not located within a designated Gaeltacht area, therefore there are no effects on language in this regard (Census 2011, Gaeltacht Areas).

13.3.2.1.5 Placename Evidence

Place names may be derived from geological, archaeological or topographical features within the landscape or may also have taken the name of an important or famous person who once lived in an area. Place name evidence can refer to archaeological monuments within the vicinity which may no longer be visible in the landscape or which are now only documented through local history or tradition. The database of Irish placenames, www.logainm.ie was consulted for the meaning of the placenames located within the study area boundary and in the general environs of the site.

Meenbog – Derived from the Irish *Mín Bog* meaning soft 'misk or field'.

Croagnagawna – No information

Cashelnavean – no information on logainm.ie. Cashel may, however, refer to a cashel or ringfort.

Tawnawully mountain (tamhnaigh an mhullaigh), mullach (also: mullaigh) hilltop and Tamhnach arable place, field.

Keadew upper (chéide uachtarach) – (hill of the plain level top or summit)

Friarsbush – no information,
Ardinawark – ard an amhairc meaning prospect hill.
Cullionboy – chuilleann buí meaning yellow slope.

The majority of the place names listed above refer to topographical features within the landscape such as the shape of a hill or a nearby lake, etc. Some names, however, may have an archaeological or cultural heritage significance.

13.3.2.1.6 Review of Cartographic Sources

A review of the available historic cartographic sources for the area including the first edition (1836-7) and second edition (1911) OS maps was undertaken for any items of architectural or cultural heritage merit which may not appear in any records such as the NIAH or RPS.

No such features are depicted on the historic mapping for the proposed wind farm site. No features which would suggest the presence or any structures are located within the wind farm site. The 6 inch OS mapping shows open arm land with little to no enclosed fields. This accords with the results of the field assessment which did not reveal any stone boundaries within the confines of the site of the Proposed Development.

13.3.2.1.7 Pilgrim Sites

Lough Derg Pilgrimage site (specifically Station island) is situated 10km from the southern turbines in the Proposed Development. The pilgrimage is associated with St Patrick because of his association with the monastery founded at the lake a few decades after the arrival of Christianity in Ireland. The Island is variously called Lough Derg (Lake of the Cave), Purgatorium Sancti Patrici (St Patrick's Sanctuary or Purgatory). It survives today as a living remnant of the early Irish Church. Historical records date the foundation of the holy Island in Lough Derg back to the 5th Century. History points to there probably being a religious presence around Lough Derg before the time of St Patrick and that it was common for Christians to seek to supplant pagan sites with foundations of their own. A Druidic presence near the lake would explain why a monastery came to be founded here. The monastery was founded on the island adjacent Island where pilgrims make their pilgrimage. It is known as Saint's Island and is the location of the early monastery in the 400s. This island is overgrown and not accessible today. Station Island is the place of the famous pilgrimage, it is known locally as Station Island, after the 'stations', rounds of prayers that later came to characterise the pilgrimage.

The site was visited in order to assess potential visual effects or effects on setting. Views towards the Proposed Development were noted and recorded (See Appendix 13.1). A number of existing turbines (thought to be Keadew Upper wind turbines) were visible from Lough Derg, albeit the upper portions of the blades and some nacelles. With this in mind, the turbines of the Proposed Development may also be visible at this distance. This would result in a slight to moderate effect on setting given the public usage of the site of the Proposed Development. The ZTV and wireframes from this location would suggest that visibility will be minimal with only the blade tips visible at a distance. Cumulative effects would increase slightly when considering both windfarms together.

13.3.2.2 Underground Cabling Grid Connection

The proposed underground grid connection route extends from a proposed substation within the proposed wind farm site and extends mainly along existing public roads. It then extends along the N15 National road after which it will connect to an existing

110kV substation south of Barnesmore (Pl. Ref. 11/20064) (Clogher Substation). For a description of any relevant cultural heritage along the grid connection see Appendix 13.2. For a detailed description of the proposed grid connection route refer to Section 4.3.7 of the EIAR.

Record of Protected Structures

No RPS structures or Listed Buildings (NI) are located along the proposed grid connection route.

13.3.2.2.1 NIAH

Two structures listed in the NIAH for County Donegal are located within the study area boundary along the grid connection route and are listed in Table 13.6 below and shown in Figure 13.8. A full description of these structures is provided in Appendix 13.2. The potential effects on the structures is detailed below. The Architectural Heritage Protection Guidelines for Planning Authorities (DoEHLG, 2004) outlines ‘best practice’ in relation to non-habitable protected structures such as bridges. *‘Bridges require careful consideration when any repair or alteration work is proposed. Bridges which are protected structures may include road, rail and canal bridges, aqueducts, viaducts and footbridges. They may incorporate features of special interest including abutments, parapets, cut-waters, refuges, balustrades, string courses, railings, lamp standards, plaques and paving. Where such features exist they should be identified and conserved. Proposals to reinforce, widen or infill sections of a bridge which is a protected structure, resulting in the concealment of any part of it, should be treated with caution. Where reinforcement is proven to be unavoidable, efforts should be made to ensure that the least possible structural and visual damage is caused to the bridge. Proposals to reinforce, widen or infill sections of a protected bridge will require alterations to the character and quality of the structure. Where the impacts are likely to be substantial and would damage the character and integrity of the protected structure to an unacceptable extent, alternative solutions should be explored (ibid, 208-209).*

Table 13.6: NIAH structures located within the EIAR study area boundary along the underground grid connection route

NIAH	ITM E	ITM N	Townland	Structure	Distance to Cable
40909423	600115	882690	Cullionboy	Milestone / milepost	16.4m
40909424	600302	882767	Keadew Upper	bridge	Extends over bridge



Figure 13.8: NIAH structures located within the EIS study area boundary along the proposed underground grid connection

13.3.2.2.2 NIAH Garden Survey

No historic gardens are located in the immediate vicinity of the grid connection route.

13.3.2.2.3 Review of Cartographic Sources

A review of the available historic cartographic sources for the area including the first edition (1836-7) and second edition (1911) OS maps was undertaken for any items of architectural or cultural heritage merit which may not appear in any records such as the NIAH or RPS. No such features are depicted on the historic mapping for the majority of the grid connection route that are not already documented.

13.4 Likely Significant Effects and Associated Mitigation Measures

13.4.1 Do Nothing Scenario

If the Proposed Development were not to proceed, then potential effects on heritage assets as a result of the Proposed Development and associated infrastructure would not apply with no need for mitigation. The existing land-uses on the site of the Proposed Development predominantly commercial forestry, would continue.

13.4.2 Construction Phase (Direct Effects)

Direct effects refer to a 'physical effect' on a monument or site. The construction phase of the Proposed Development consists largely of earthmoving activities such as peat and topsoil removal for access roads, turbine hardstand areas, substation, borrow pit, and excavation associated with the underground cabling grid connection route. The potential effects on the known and potential archaeological, architectural and cultural heritage of the area are outlined below with the suggested mitigation measures.

13.4.2.1 Turbines

As no UNESCO World Heritage sites, National Monuments or recorded monuments are located within the footprint of any proposed turbines no direct effects on these aspects of the archaeological resource are identified. Similarly, as no Protected Structures, NIAH structures, historic gardens or items indicated on the historic mapping are located within the footprint of any proposed turbines no direct effects on these aspects of the architectural and cultural heritage resource are identified.

13.4.2.1.1 Effects on unrecorded potential sub-surface sites

The proposed turbines are mainly located within a densely planted coniferous forest within which many drains area apparent. Some sections of the proposed wind farm site are located in open grassed over upland blanket bog, in particular T19 and T16. While no new archaeological sites were detected during the walk-over survey the potential exists for the bog to contain as yet unrecorded sub-surface sites and artefacts. It is possible that such sites may be uncovered either within the peat and/or at the level of the underlying natural subsoil. The excavation of the peat for the turbine bases and hardstands may effect on any new sub-surface sites, if present.

Pre- Mitigation Impact

Should new sites be present within the peat (currently not visible on the surface or in drain sections) the impact is likely to be significant negative and permanent (i.e. the extraction of peat by machinery would permanently remove the sites resulting in a significant negative impact).

Proposed Mitigation Measures

- Archaeological monitoring of ground works during construction. This is deemed to be a suitable mitigation measure since the majority of the site is under coniferous plantation. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

The sites, if detected, during monitoring will be preserved by record (archaeologically excavated) and therefore permanently removed with a full record made of same. In this regard, the potential effect after the mitigation measures is likely to be not significant.

Significance of Effects

Not Significant

13.4.2.2 Borrow Pits

As no UNESCO World Heritage sites, National Monuments or recorded monuments are located within the footprint of the proposed borrow pits no direct effects on these aspects of the archaeological resource are identified. Similarly, no Protected Structures, NIAH structures, historic gardens or items indicated on the historic mapping are located within the footprint of the borrow pit therefore no direct effects on these aspects of the architectural and cultural heritage resource are identified. The proposed borrow pits are located within coniferous forestry similar to the Turbine locations and in this regard the Proposed mitigation is also reflected.

13.4.2.2.1 Impact on unrecorded potential sub-surface sites or features

Pre -Mitigation Impact

Should sub-surface sites or features be present within the proposed borrow pit the impact on such sites is likely to be significant negative and permanent (i.e. the removal of topsoil and the extraction of rock by machinery would permanently remove the sites resulting in a significant negative impact).

- Archaeological monitoring of ground works during construction. This is deemed to be a suitable mitigation measure since the majority of the borrow pit locations are under coniferous plantation. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

The sites, if detected, during monitoring will be preserved by record (archaeologically excavated) and therefore permanently removed with a full record made of same. In this regard, the potential effects after the mitigation measures is likely to be Not Significant.

Significance of Effects

Not Significant

13.4.2.3 Substation

As no UNESCO World Heritage sites, National Monuments or recorded monuments are located within the footprint of the proposed substation no direct effects on these aspects of the archaeological resource are identified. Similarly, no Protected Structures, NIAH structures, historic gardens or items indicated on the historic mapping are located within the footprint of the substation therefore no direct effects on these aspects of the architectural and cultural heritage resource are identified.

Effect on unrecorded potential sub-surface sites or features

Pre-Mitigation Impact

Should sub-surface sites or features be present within the footprint of the proposed substation the impact on such sites is likely to be significant negative and permanent (i.e. the removal of topsoil and/or peat from this area would permanently remove the sites resulting in a significant negative effect).

Proposed Mitigation Measures

- Archaeological monitoring of ground works during construction. This is deemed to be a suitable mitigation measure since the substation site is

currently under a coniferous plantation. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

The sites, if detected, during monitoring will be preserved by record (archaeologically excavated) and therefore permanently removed with a full record made of same. In this regard, the potential impact after the mitigation measures is likely to be slight-moderate.

Significance of Effects

Not Significant

13.4.2.4 Grid Connection

No UNESCO World Heritage sites or National Monuments are located on the route of the grid connection cabling, therefore, no direct impacts on these aspects of the archaeological resource are identified. Recorded Monuments (2) and NIAH sites (2) are located along the route however (see below).

13.4.2.4.1 Recorded Monument DG005-085 Site of Megalithic Structure

This 'site' is located along the grid connection route adjacent to the N15 National road. It measures 19.84m from the proposed cable trench. The monument is described by the National Monuments Service as '*Marked in gothic script on current edition of the Ordnance Survey map as 'Cloghaturras'*'. The entry for this monument on the Historic Environment Viewer does not describe the tomb in detail as there is **no visible surface trace of the structure** which is marked on the early 1900s (2nd Edition OS) map. This accords with the field assessment carried out by Tobar Archaeological Services as part of the assessment of this monument. No tomb-like structure survives on the site and the river bank is strewn with large boulders, likely to be erratics and not archaeological in nature. Furthermore, the course of the river has changed in this location and meanders in the direction of the 'site' which may have resulted in some significant erosion of the bank in this location.

Pre-Mitigation Impact

Should sub-surface archaeology be present beneath the road surface (currently not visible on the surface) adjacent to the recorded monument the impact is likely to be significant negative and permanent (i.e. the ground works would permanently remove the sites resulting in a significant negative impact and a total loss of information relating to the sites). However, mitigation measures will avoid any potential impacts to the site if implemented during construction.

Proposed Mitigation Measures

- The 'site' the monument should be separated from the groundworks by high visibility temporary fencing along the roadside in advance of construction under the direction of an archaeologist. This protective fencing will negate any potential impacts on the monument.
- Furthermore, archaeological monitoring of ground works during construction where they extend past the said monument. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

If the suggested mitigation measures are implemented during construction effects will be negligible to slight. If archaeological features are detected during archaeological

monitoring, they will be preserved by record (archaeologically excavated) and therefore permanently removed with a full record made of same. In this regard the potential impact after the mitigation measures is likely to be slight.

Significance of Effects

Slight



Figure 13.9: DG085-005 megalithic structure 'site' showing 15m protective area. Fencing along the roadside during construction outside this zone.

13.4.2.4.2 Recorded Monument Kiln (DG094-026)

This 'site' was excavated and removed as part of the N15 re-alignment scheme and therefore has no visible surface trace.

Pre-Mitigation Impact

The pre-mitigation impact would be negligible since the monument was removed during archaeological excavation.

Proposed Mitigation Measures

No mitigation required.

Residual Impact

Negligible.

Significance of Effects

Imperceptible

13.4.2.4.3 NIAH Ref. 40909424 Road Bridge

The proposed grid connection route will traverse this road bridge and in this regard it may impact directly on the structure of the bridge. The Architectural Heritage Protection Guidelines for Planning Authorities (DoEHLG, 2004) outlines 'best practice' in relation to non-habitable protected structures such as bridges and these guidelines should be adhered to so as to avoid any such impacts.

Pre -Mitigation Impact

Should the structure or arch of the bridge be exposed during construction the impact may be significant, negative and permanent (i.e. the ground works would permanently damage the bridge structure).

Proposed Mitigation Measures

- Archaeological monitoring of ground works during construction where they extend past the said monument. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

If the structure of the bridge is exposed during archaeological monitoring measures can be put in place for its protection. In this regard the potential impact after the mitigation measures is likely to be slight.

Significance of Effects

Slight

13.4.2.4.4 NIAH Ref. 40909423 Milestone

The grid connection cabling route measures 16.4m from this road side monument which can be inconspicuous in dense overgrowth. Damage by machinery during construction may occur which would result in a negative impact on the structure.

Pre-Mitigation Impact

Should the laying of the cable proceed without mitigation the pre-mitigation impact would be moderate to significant and negative. However, this can be avoided by mitigation (see below).

Proposed Mitigation Measures

- Archaeological monitoring of ground works during construction where they extend past the said monument. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.
- Protective high visibility barrier to be put in place prior to construction in order to prevent any accidental damage to the milestone.

Residual Impact

The potential impact after the mitigation measures are implemented is likely to be slight.

Significance of Effects

Slight

13.4.2.5 Other Infrastructure

This section relates to other non-turbine elements of the Proposed Development such as access roads, internal underground cabling, construction compounds, recreational and amenity trails and any other associated works.

13.4.2.5.1 Impact of infrastructure on sub-surface archaeological features / sites

The proposed infrastructure associated with the Proposed Development is largely located on existing roads which would be due for upgrade or along firebreaks / forest tracks. While no new previously unrecorded sites were noted during field survey it is possible that ground works for the proposed infrastructure may impact on as yet undiscovered sites within the peat or at the level of the underlying natural boulder clay.

Pre-Mitigation Impact

Removal of peat and other ground works for the proposed infrastructure may result in a permanent significant negative impact on sub-surface archaeological sites if present.

Proposed Mitigation Measures

- Archaeological monitoring of ground works during construction. This is deemed to be a suitable mitigation measure since many of the roads are existing with only minor works being proposed to such roads. Some new roads through forestry and bog are proposed however and new potential finds can be dealt with through identification at the monitoring stage. A report on the results of the monitoring shall be compiled and submitted to the relevant authorities on completion of the project.

Residual Impact

The sites, if detected, during monitoring will be preserved by record (archaeologically excavated) and therefore permanently removed with a full record made of same. In this regard, the potential impact after the mitigation measures is likely to be slight-moderate.

Significance of Effects

Not Significant

13.4.3 Construction Phase (Indirect Effects)

No indirect effects will occur at the construction phase of the Proposed Development. All indirect effects are likely to occur at the Operational Phase of the Proposed Development (see section 13.4.5).

13.4.4 Operational Phase (Direct effects)

Any likely direct effects will occur at the construction phase of the Proposed Development (see Section 13.4.2)

13.4.5 Operational Phase (Indirect Effects)

Indirect impacts are where a feature or site of archaeological, architectural heritage merit or their setting is located in close proximity to a Proposed Development. Indirect impacts here are mainly concerned with impacts on setting.

Impacts on settings of sites may arise when a development is proposed immediately adjacent to a recorded monument or cluster of monuments. While the Proposed Development 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 impact to the setting of a monument. For purposes of assessing visual impact 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 impact.

Potential impact to the visual amenity of a site or area and the significance of same is dependent on a number of factors regarding the sensitivity of the location or ‘receptor’ and the scale or magnitude of the Proposed Development. Similarly, the extent of the development and its duration and reversibility should all be considered (*Guidelines for Landscape and Visual Impact Assessment 3rd edition – Consultation Draft*, Landscape Institute, 2013).

13.4.5.1 Turbines

13.4.5.1.1 Impact of turbines on setting of UNESCO World Heritage sites (Tentative list)

No monuments on the WHS list and tentative list are located within 25km of the proposed turbines.

Pre-Mitigation Impact

No mitigation required

Proposed Mitigation Measures

No mitigation measures proposed

Residual Impact

Negligible

Significance of Effects

Not significant

13.4.5.1.2 Impact of turbines on setting on National Monuments

Impact of turbines on setting of National Monuments within 20km of the proposed turbines were considered for purposes of assessing potential impacts on visual setting. The assessment was based on both the ZTV model, field survey and the use of photomontages or wireframes where applicable. The National Monuments referred to in Section 13.3.1.1.2 of the EIAR are addressed separately here for clarity in terms of potential impacts on setting.

TYR016:017 Todd's Den, Churchtown Wedge Tomb:

Pre-Mitigation Impact

At a distance of 17.8km to the nearest proposed turbine, the immediate setting of this monument will not be altered. Turbines may be visible at a distance to the west as views from this location are quite extensive. Any visible turbines will result in a change to the general environment and result in a slight impact on setting. The ZTV and wireframe from this location however, suggests that there will be no visibility. In this regard, the likely effect will be negligible.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Imperceptible Impact on setting

TYR016:018 Druids' Altar, Churchtown Portal Tomb:

Pre-Mitigation Impact

At a distance of 17.6km to the nearest proposed turbine, the immediate setting of this monument will not be altered. Similar to Todd's Den (see above) turbines may be visible at a distance to the west as views from this location are quite extensive given its location on high ground. Any visible turbines would result in a change to the general environment to the west and result in a slight impact on setting. Consultation of the ZTV and wireframe from this location suggests that visibility from the monument will not occur due to intervening topography.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Imperceptible effect on setting

TYR016:046 Berrysfort Standing Stone:

Pre-Mitigation Impact

At a distance of 18.3km to the nearest proposed turbine, the immediate setting of this monument will not be altered. The standing stone, although not publicly accessible, is located on a low eminence to the south of a river bank. The NISMR description refers to good views from this location however. Turbines may be visible at a distance to the west as the hills are visible in the distance. Any visible turbines will result in a change to the general environment to the west and result in a slight impact on setting. The wireframe from this location in the direction of the turbines suggests that the majority of the upper portions of the turbines will be visible at a distance.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Slight Effect on setting

National Monument No. 174 DG093-013001 Donegal Castle

Pre-Mitigation Impact

At a distance of just over 15km to the nearest proposed turbine, the immediate setting of this monument will not be altered. Furthermore, the setting of the castle on the whole relates to its urban surrounds and the significance of the monument within Donegal town itself. In its current position, Donegal castle can be appreciated from within the town and turbines even if visible at a distance of 15km would not alter this setting of the structure. Potential impacts on setting are likely to be negligible in this case. Both the ZTVs and the wireframe generated from this monument suggests no visibility of any turbines.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Imperceptible Impact on setting

National monument No. 175 DG093-013002 Donegal Abbey

Pre- Mitigation Impact

At a distance of 15.7km to the nearest proposed turbine, the immediate setting of this monument will not be altered. The appreciation of Donegal Abbey is appreciated from the both the urban setting of Donegal town and the adjacent riverine channel (River Eske). Given the built-up nature of the surrounding landscape the turbines even if visible at a distance of over 15km would not alter the setting of the structure. Potential impacts on setting are likely to be negligible in this case. Both the ZTVs and the wireframe generated from this monument suggests no visibility of any turbines.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Imperceptible Effects on setting

National Monument No. 463 DG070-026001 Beltany

Pre-Mitigation Impact

At a distance of 20km to the nearest proposed turbine, the immediate setting of this monument will not be altered. The views from this national monument are extensive in all directions, a location much sought after by its builders in prehistoric times. The monument is appreciated in a rural setting where views are appreciated by the public from the monument. Turbines visible on the horizon would potentially impact on the wider setting of the monument but the significance will be slight at this distance. Beltany stone circle is outside the ZTV model although the wireframe does show visibility (16-19 turbines) in the direction of the turbines. A viewshed analysis was undertaken in ArcGIS online from Beltany Stone Circle and the results of this demonstrated that 16 turbines (at approximate hub height) will be visible from the stone circle. This does not take existing screening and vegetation into consideration however. Due to the intervening distance between the monument and the Proposed Development the likely effects will be slight.

Proposed Mitigation Measures

- It is not possible to mitigate against potential negative effects on setting arising from proposed turbines therefore no mitigation measures are being proposed.

Residual Impact

The residual impact is the same as the pre-mitigation impact since no mitigation measures are possible.

Significance of Effects

Slight Impact on wider setting

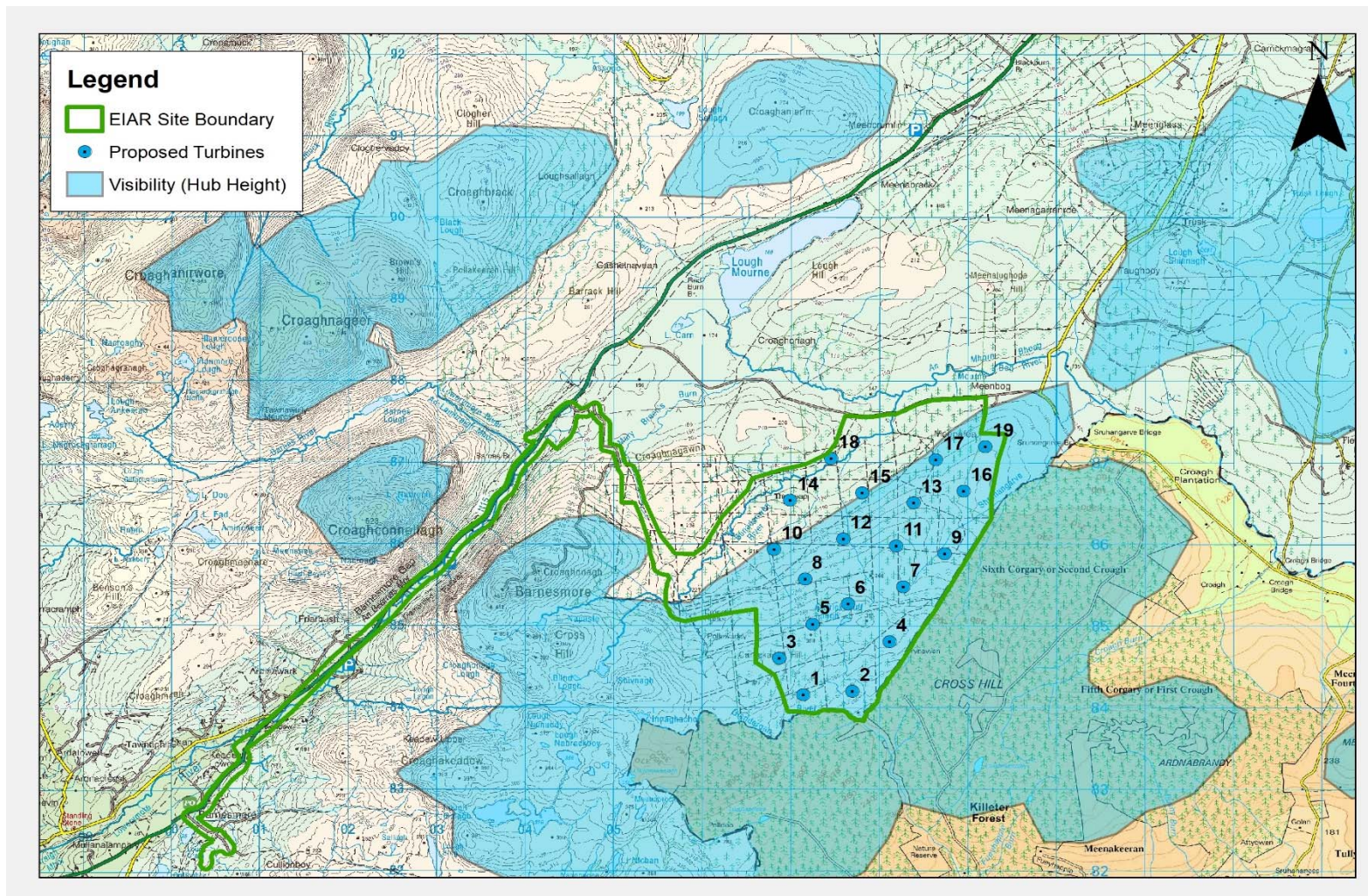


Figure 13.10: Areas shaded in blue within site boundary are those which will be visible from Beltany Stone circle (set to 98m hub height) (not assuming existing vegetation)

13.4.5.1.3 Impact of Turbines on setting of Recorded Monuments

Only 15 recorded monuments are located within 5km of the nearest proposed turbine and none are located within the windfarm area of the study area boundary. This is a low density of monuments within the environs of the site of the Proposed Development. The table below presents the recorded archaeological monuments within 5km of any turbine according to their sensitivity (visual dominance, above ground trace, uniqueness, proximity to site etc) and the likely potential pre-mitigation impact on their setting. For example, low visibility monuments such as enclosures, ringforts and many earthen monuments at a distance of 3-5km from the nearest proposed turbine could be considered to have less potential to be impacted by the Proposed Development and therefore their sensitivity could be regarded as low. Monuments on higher ground (visually dominant) within close proximity to the site of the Proposed Development however may be more at risk in terms of impact on their setting. Monuments that do not have any surface trace are not capable of having their setting impacted and these impacts are categorised as ‘not significant’.

The ZTV model for the site, which assumes no vegetation or screening, shows that five monuments will have no visibility due to topography, nine monuments will have visibility of between 15 and 19 turbines, and one monument will have visibility of 5-9 turbines.

The majority of the monuments are located on private land with no formal public access. Such monuments can therefore only be viewed/appreciated by the public from the nearest public road. It should be noted that the introduction of the proposed turbines will not impact on the immediate setting of the 15 monuments by virtue of the fact that no recorded monuments are located immediately adjacent to a proposed structure. It is acknowledged, however, that a change to the wider setting of the monuments will occur as a result of the proposed turbines and consequently a minimum slight impact for all upstanding monuments is identified. The likely pre-mitigation impacts for each monument are summarised below.

Pre-Mitigation Impacts

Pre-mitigation impacts on the setting of RMPs are set out in Table 13.7 below.

Table 13.7: Pre-Mitigation Impacts on setting of RMPs and NISMRS within 5km of the nearest turbine

SMR/RMP	Mon. Type	Townland	Distance (M)	Nearest Turbine	Sensitivity of Asset	Significance of Effect
DG077-014	Ringfort - cashel	Goland	4874	19	Low (no trace)	Imperceptible
DG077-021	Megalithic tomb - portal tomb	Carrickmagrath	4012	19	Low (in forestry)	Slight
DG077-025	Megalithic structure	Loughsallagh	4707	18	Low (nature unknown)	Slight
DG077-028	Standing stone	Meenbog	4029	19	Low (in forestry)	Slight

SMR/RMP	Mon. Type	Townland	Distance (M)	Near est Turbine	Sensitivity of Asset	Significance of Effect
DG085-005	Megalithic structure	Tawnawully Mountains	4241	10	Low (no trace)	Imperceptible
DG086-001	Enclosure	Cashelnavan	3347	18	Low-Medium	Slight-Moderate
DG086-002001	Megalithic tomb - unclassified	Croaghona gh	3157	18	Low (no trace)	Imperceptible
DG086-002002	Standing stone	Croaghona gh	3142	18	Low (no trace)	Imperceptible
DG086-003	Enclosure	Trusk	3839	19	Low (extensible forested, partial remains)	Slight-Imperceptible
DG086-004	Enclosure	Tievecloghoge	3521	19	Low (no trace)	Imperceptible
DG086-005	Redundant record	Trusk	4630	19	Low (non-archaeological, folklore)	Imperceptible
DG087-004	Ringfort - cashel	Tievecloghoge	3817	19	Low (considerably interfered with)	Slight
TYR014:001	ISLAND, possibly CRANNOG	Slievedoo	2214	1	Low (low visibility)	Slight
TYR014:002	A.P. SITE - CRANNOG?	Slievedoo	1506	3	Low (aerial photo)	Slight
TYR022:001	HOLY WELL	Slievedoo	3426	2	Low-Medium	Slight-Moderate

Proposed Mitigation Measures

No mitigation is proposed.

Residual Impacts

Same as Pre-Mitigation Impacts

Significance of Effects

Same as Pre-Mitigation Impacts (See Table 13.7)

13.4.5.1.4 Impact of Turbines on setting of NIAH/RPS structures

Low visibility structures such as milestones, post boxes, bridges are less likely to have a setting associated with them and are less likely to be visually impacted in contrast to more dominant structures such as houses and churches which often have obvious visible remains. The sensitivity of an asset together with the distance from the wind

farm dictates the significance of potential impacts. These are categorized not based on individual monument visits (unless publicly accessible) but rather cartographic sources as well as the ZTV provided in the LVIA chapter (Chapter 12). None of the structures listed below will be directly impacted and no significant or adverse impacts will take place. The immediate setting of the structures will not be impacted, however, a change to their wider setting will occur with the introduction of the turbines and therefore a slight impact for the majority of structures is acknowledged. The ZTV shows that the majority of turbines will be visible from some structure locations within 5km of turbines. The impact on setting decreases with distance and the sensitivity of the asset.

Pre-Mitigation Impact

Pre-mitigation impacts on the setting of NIAH/RPS structures are set out in Table 13.8 below.

Table 13.8: Table of Pre-Mitigation Impacts on setting of NIAH/RPS structures – within 5km of turbines

HB Ref no./ NIAH/RPS	Townland	Originality	Distance (M)	Nearest Turbine	Sensitivity of asset	Significance of Impacts
HB10/01/014	Meenblagh	house Thatched cottage	4800	9	Low-Medium	Slight-Moderate (5-9 turbines visible ZTV)
40908501	Keadew Upper	Bridge	4898	3	Low	Imperceptible (no visibility – ZTV)
40908604	Croaghonagh	Bridge	2631	14	Low	Slight-Moderate (15-19 turbines visible – ZTV)
40908605	Cashelnaveen	Barracks	2944	14	Low-Medium	Slight-Moderate ((15-19 turbines visible – ZTV))
40908602	Meenbog	Bridge	731	17	Low	Moderate (15-19 turbines visible – ZTV)
40907707	Meencargagh (Dooish)	School	4760	19	Low-Medium	Imperceptible (no visibility – ZTV)
40907714	Carrickmagrath	Church/Chapel	4526	19	Medium	Slight-Moderate ((15-19 turbines visible – ZTV))

Proposed Mitigation Measures

No mitigation is being proposed as it is not possible to mitigate against potential negative impacts on setting.

Residual Impact

As outlined in table above

Significance of Effects

Same as Pre-Mitigation Effects (Table 13.8)

13.4.5.1.5 Impact of Turbines on setting of NIAH garden survey

NIAH historic gardens were assessed in this report. None are located within 3km of any proposed turbine.

Pre-Mitigation Impact

None

Proposed Mitigation Measures

No mitigation necessary

Residual Impact

No impacts

Significance of Effects

N/A

13.4.5.2 Borrow Pits

The operational phase of the proposed borrow pits will not impact on the immediate setting of any Cultural Heritage features identified in this report. When the borrow pits are operational this is not a development type that would be readily visible in the landscape. No assets are located adjacent to any of the proposed borrow pits. It is proposed to reinstate the borrow pit after its use, however, which will result in a reversal of the borrow pit to its original state.

Pre- Mitigation Impact

Imperceptible

Proposed Mitigation Measures

None being proposed

Residual Impact

None

Significance of Effects

N/A

13.4.5.3 Substation

13.4.5.3.1 Impact of the proposed substation on Cultural Heritage Assets

The proposed substation is not located immediately adjacent to any designated sites referenced in this report but the higher elements such as electrical equipment may be seen from some locations within 5km. The wider setting of such assets will not be impacted on by the proposed substation however.

Pre-Mitigation Impact

The substation site and associated electrical equipment may have a slight-imperceptible negative impact on the surrounding archaeological and cultural heritage landscape as it may result in a change to their wider setting.

Proposed Mitigation Measures

None Proposed.

Residual Impact

Slight-Imperceptible

Significance of Effects

Slight-Imperceptible

13.4.5.4 Underground Cabling Grid Connection

13.4.5.4.1 Impact of grid connection on heritage Assets (RMPs, RPS, NIAH, sub-surface sites)

As the proposed grid connection is sub-surface, no indirect effects on setting are anticipated.

13.4.5.5 Other Infrastructure

This section relates to other non-turbine elements. The majority of these elements are low visibility or sub-surface such as proposed access roads, compounds etc. The construction compound is also low-visibility and temporary and impacts on setting of heritage assets will not occur in this regard.

13.4.6 Cumulative Impacts

Cumulative impact is defined as ‘*The addition of many small impacts to create one larger, more significant, impact*’ (EPA 2002, 33). It is also defined as ‘impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project’ (EC 1999). Cumulative impacts 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 immediate vicinity of the Proposed Development. Cumulative Impacts at the Operational Stage of the Proposed Development are considered.

In this regard in order to assess overall cumulative effects on archaeology and cultural heritage the proposed project is considered in the context of other developments. Cumulative impacts for the Proposed are largely concerned with impacts on setting since no direct impacts on known cultural heritage assets were identified in this EIAR.

There are a number of operational, permitted and pending wind farms within 20km of the Proposed Development but these wind farms must be looked at in the context of the surrounding archaeological landscape. As it stands, there is a concentration of SMRs (Northern Ireland) and RMPs (Rep. of Ireland) to the north-east and south-east of the Proposed Development site within the 20km radius. There is a notable gap in constraints or receptors to the north-west, west and immediately south of the Proposed Development site. When the locations of the operational, permitted, pending and appealed wind farms are taken into consideration, it becomes evident that they are positioned in areas which have fewer archaeological monuments thereby minimising the overall significant negative effects on the archaeological and cultural heritage landscape. When the location of the Proposed Development is taken into consideration the overall negative effect on the archaeological landscape will increase slightly. In

general, as the numbers of wind farms increase, the cumulative impact on the surrounding archaeological resource also has the potential to increase.

It must be noted that this increase in cumulative impact does not arise in any direct impacts to archaeology or cultural heritage. Whilst no direct cumulative impacts will occur as a result of the Proposed Development, some indirect visual impact may occur due to the change in the general environment of the landscape. The addition of 19 turbines is likely to alter the landscape and the general environment within 20km. The latter assessment is based on a flat landscape and a review of the RMPs and SMRs in relation to other wind farms and the proposed wind farm. Land use and topography must also be taken into consideration and the extent to which the existing environment has been altered in recent decades. Intervening mountains and hills of which there are many in the vicinity of the Proposed Development may also provide screening from turbines. Many wind farms within 20km of the Proposed Development are located within coniferous forests and areas which have been subject to clear-felling and replanting.

When considering the proposed wind farm together with the proposed grid connection route indirect (visual) effects will not increase since the proposed grid connection is underground thereby avoiding potential negative visual effects on the cultural heritage resource. No increase in indirect cumulative effects will occur therefore. When considering the Proposed Development (Meenbog windfarm and cable route) together with the proposed Drumnahough/Lenalea cable route, the cumulative (effects (indirect/visual) will not increase since the cable route is underground thereby avoiding potential negative visual effects on the cultural heritage resource.

No direct impacts on the cultural heritage resource were identified as a result of the proposed windfarm. The independent underground cabling grid connection cabling route traverses within proximity to two recorded monuments, the effects of which have been negated through mitigation and design. With this in mind direct cumulative effects will not increase when considering both the windfarm and the Drumanhough/Lenalea grid connection route. When the Proposed Development (Meenbog windfarm) is considered together with the proposed Dumnahough/Lenalea cable route, the residual effects (when the mitigation measures are implemented) are such that there is no increase or cumulative effects (direct) on the cultural heritage resource.

13.4.7 Decommissioning Phase

There will be no significant potential impacts on the archaeological, architectural and cultural heritage environment during the decommissioning of the Proposed Development. Any potential direct impacts will already have been resolved through mitigation measures and the established access tracks will be used for the removal of the built features of the Proposed Development.

13.5 Summary

This report comprises an assessment of the potential impact and effects of the Proposed Development (including turbines and associated infrastructure, substation, and borrow pits, including underground grid connection). The potential impacts on the surrounding archaeological, architectural and cultural heritage landscape were assessed. The assessment was based on desktop research, GIS analysis, view shed analysis to assess impacts on setting and detailed field survey. Through a detailed examination of the baseline data available and a detailed site inspection, it was concluded that the archaeological potential of the study area boundary is low with no

Cultural Heritage assets within the proposed windfarm study area boundary. Two RMPs sites are located within the study area boundary along the proposed underground cabling route, one of which is fully excavated (Kiln) and the second representing the 'site of' a megalithic tomb. Potential negative effects on the RMP 'sites' have effectively been negated through suitable mitigation which will be implemented during construction. No new sites were noted within the areas of the Proposed Development.

Where potential impacts are possible such as effects on as yet unknown sub-surface features, appropriate mitigation measures have been recommended in order to minimise any such impacts. Recommended mitigation includes archaeological monitoring during the construction stage of the Proposed Development in terms of potential direct impacts on sub-surface features (if present). Mitigation measures were also proposed along the grid connection route where the monuments may require fencing off during construction and monitoring of the cable route in the vicinity of monuments nearby.

Indirect impacts or effects on setting in the wider landscape will result in Imperceptible, slight – Imperceptible and slight to moderate the latter being the worst-case scenario. Field assessment, GIS analysis, consultation with the ZTV and viewshed analysis was undertaken to assess effects on setting. No significant negative effects on setting were identified. The significance of the impacts depends on factors such as the survival or otherwise of the monuments, their distance to the turbines being proposed as well as existing topography. An assessment of cumulative impacts was also undertaken and cumulative impact on setting is likely to increase when considering the proposed and operational wind farms together. Direct cumulative effects, however, will not occur when considering the proposed Meenbog windfarm together with the the proposed Drumnahough/Lenalea underground cabling route.