

12. ARCHAEOLOGY AND CULTURAL HERITAGE

12.1 Introduction

This archaeological, architectural, and cultural heritage chapter was prepared by Tobar Archaeological Services. It presents the results of an impact assessment for the Proposed Extension to the Carrigarierk Wind Farm, hereafter referred to as the Proposed Development (as detailed in Chapter 1, Section 1.4.1). The Proposed Development is located approximately 3km south of the village of Inchigeelagh and approximately 8.5km north of the town of Dunmanway, Co. Cork. The approximate location for the centre of the site is E521588, N562257. The proposed site covers an area of approximately 152 hectares, in total.

The development area predominantly comprises upland coniferous forestry, pastureland and also includes the existing Carrigarierk Wind Farm in which a number of existing roads have been constructed. The Proposed Development will utilise, where possible, such existing infrastructure. The Carrigarierk Wind Farm was subject to full archaeological monitoring under licence (19E0508) in 2019/20 during construction (further detail is provided below).

The purpose of this chapter is to assess the potential direct and indirect effects of the Proposed Development 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 inspection of the study area. The report amalgamates desk-based research and the results of field walking to identify areas of archaeological/architectural/ cultural significance or potential, likely to be impacted either directly or indirectly by the Proposed Development. An assessment of potential effects, including cumulative effects, is presented, and a number of mitigation measures are recommended where appropriate. The visual effect of the Proposed Development on any newly discovered monuments/sites of significance as well as known recorded monuments is also assessed.

12.1.1 Proposed Development

The Proposed Development comprises the construction of up to 3 no. wind turbines and all associated works. The proposed wind turbines will have a maximum ground to blade tip height of up to 176.5 metres. A full description of all elements of the Proposed Development is presented in Chapter 4.

12.1.2 Statement of Authority

This chapter 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 are licensed by the Department of Housing, Local Government and Heritage 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 (EIAR) and surveys. Miriam Carroll and Annette Quinn are directors of Tobar Archaeological Services which has been in operation for 17 years.

12.1.3 Legislation and Guidelines

The chapter has been prepared in compliance with all relevant EIA legislation and guidance (see Chapter 1: Introduction for relevant guidance and legislation).

12.1.3.1 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 (Culture, Heritage and the Gaeltacht) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

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

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

12.1.3.1.1 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 fulfill 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.

12.1.3.2 **Cork County Development Plan 2014-2022**

The Cork County Development Plan 2014 outlines a number of objectives relating to archaeology as follows:

12.1.3.2.1 **HE 3-1: Protection of Archaeological Sites**

- a. *Safeguard sites and settings, features and objects of archaeological interest generally.*
- b. *Secure the preservation (i.e. preservation in situ or in exceptional cases preservation by record) of all archaeological monuments including the Sites and Monuments Record (SMR) (see www.archeology.ie) and the Record or Monuments and Places as established under Section 12 of the National Monuments (Amendment) Act, 1994, as amended and of sites, features and objects of archaeological and historical interest generally.*

In securing such preservation, the planning authority will have regard to the advice and recommendations of the Department of Arts, Heritage and Gaeltacht as outlined in the Frameworks and Principles for the Protection of the Archaeological Heritage.

12.1.3.2.2 **HE 3-2: Underwater Archaeology**

Protect and preserve the archaeological value of underwater archaeological sites and associated features. In assessing proposals for development, the Council will take account of the potential underwater archaeology of rivers, lakes, intertidal and subtidal environments.

12.1.3.2.3 **HE 3-3: Zones of Archaeological Potential**

Protect the Zones of Archaeological Potential (ZAPs) located within historic towns and other urban areas and around archaeological monuments generally. Any development within the ZAPs will need to take cognisance of the potential for subsurface archaeology and if archaeology is demonstrated to be present appropriate mitigation (such as preservation in situ/buffer zones) will be required.

12.1.3.2.4 **HE 3-4 Industrial and Post Medieval Archaeology**

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

12.1.3.2.5 **HE 3-5 Burial Grounds**

Protect all historical burial grounds in County Cork and encourage their maintenance and care in accordance with appropriate conservation principles.

12.1.3.2.6 **HE 3-6: Archaeology and Infrastructure Schemes**

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

The CDP also outlines objectives relating to built heritage such as Protected Structures and those listed in the NIAH.

12.1.3.2.7 **HE 4-1: Record of Protected Structures**

- c. The identification of structures for inclusion in the Record will be based on criteria set out in the Architectural Heritage Protection Guidelines for Planning Authorities (2005).*
- d. Extend the Record of Protected Structures in order to provide a comprehensive schedule for the protection of structures of special importance in the County during the lifetime of the plan.*
- e. Seek the protection of all structures within the County, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. In accordance with this objective, a Record of Protected Structures has been established and is set out in Volume 2, Chapter 1 of the Plan.*
- f. Ensure the protection of all structures (or parts of structures) contained in the Record of Protected Structures.*
- g. Protect the curtilage and attendant grounds of all structures included in the Record of Protected Structures.*
- h. Ensure that development proposals are appropriate in terms of architectural treatment, character, scale and form to the existing protected structure and not detrimental to the special character and integrity of the protected structure and its setting.*
- i. Ensure high quality architectural design of all new developments relating to or which may impact on structures (and their settings) included in the Record of Protected Structures.*
- j. Promote and ensure best conservation practice through the use of specialist conservation professionals and craft persons.*

12.1.3.2.8 **HE 4-2: Protection of Structures on the NIAH**

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

12.1.3.2.9 **HE 4-3: Protection of Non- Structural Elements of Built Heritage**

Protect important non-structural elements of the built heritage. These can include designed gardens/garden features, masonry walls, railings, follies, gates, bridges, and street furniture. The Council will promote awareness and best practice in relation to these elements.

12.1.3.2.10 **HE 4-4: Areas of Special Planning Control**

Establish areas of special planning control within Architectural Conservation Areas where appropriate. These areas will include a scheme setting out objectives for the conservation and enhancement of the special character of the area, and will be based on an Architectural Appraisal of each town.

12.1.3.2.11 **HE 4-5: Architectural Conservation Areas**

Conserve and enhance the special character of the Architectural Conservation Areas included in this plan. The special character of an area includes its traditional building stock and material finishes, spaces, streetscape, shop fronts, landscape and setting. This will be achieved by;

- a. *Protecting all buildings, structures, groups of structures, sites, landscapes and all features considered to be intrinsic elements to the special character of the ACA from demolition and non-sympathetic alterations*
- b. *Promoting appropriate and sensitive reuse and rehabilitation of buildings and sites within the ACA and securing appropriate infill development*
- c. *Ensure new development within or adjacent to an ACA respects the established character of the area and contributes positively in terms of design, scale, setting and material finishes to the ACA.*
- d. *Promoting high quality architectural design within ACAs.*
- e. *Seek the repair and reuse of traditional shopfronts and where appropriate, encourage new shopfronts of a high-quality architectural design.*
- f. *Ensure that all new signage, lighting, advertising and utilities to buildings within ACA are designed, constructed, and located in such a manner that they do not detract for the character of the ACA.*
- g. *Protect and enhance the quality of open spaces within ACAs and ensure the protection and where necessary reuse of street furniture and use of appropriate materials during the course of public infrastructure schemes within ACAs.*
- h. *Protect structures from demolition, non-sympathetic alterations and the securing of appropriate infill developments.*

12.1.3.3 Statutory Consultations

The Development Applications Unit of the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media were consulted and the following were their observations.

‘Underwater Archaeology

The Department notes that it is intended to have an Environmental Impact Assessment Report (EIAR) undertaken which will include an Archaeological Impact Assessment (AIA). The AIA should include comprehensive assessment of all watercourses within the footprint of the extended windfarm, to include wading survey/dive survey (if depth is beyond wading limits) and this should be accompanied by a metal detection survey.

The Department will await the results of the EIAR’s AIA, which should be submitted as Further Information, before making additional comments.

Reason:

To ensure the continued preservation (either in situ or by record) of underwater cultural heritage and all associated features, objects and structures.

In the event that additional heritage-related observations become available a further letter will issue’.

There are no instances, within the Proposed Development site, where either a wade or dive survey could be undertaken. Three shallow watercourses were encountered, two of which are already culverted and proposed for upgrade and the third proposed to be culverted where it crosses the proposed road infrastructure. Any proposed minor water crossings will be monitored at the construction stage of the Proposed Development.

12.1.4 Location and Topography

The Proposed Development is located approximately 3km south of the village of Inchigeelagh and approximately 8.5km north of the town of Dunmanway, Co. Cork as shown in Figure 12-1. The site is situated on relatively high ground at elevations ranging between c. 170 and 340 m OD. The approximate location for the centre of the site is E521588, N562257. The proposed site covers an area of approximately 190 hectares in total and encompasses the townlands of Derryleigh, Gortnahoughtee, Gurteen, Carrigdangan, Gortatanavally and Clogher.

The site has been planted with coniferous forestry in the area of the proposed turbine E1 and the remainder of the site to the north in the area of the proposed turbines E2 and E3 consists of agricultural pastureland.

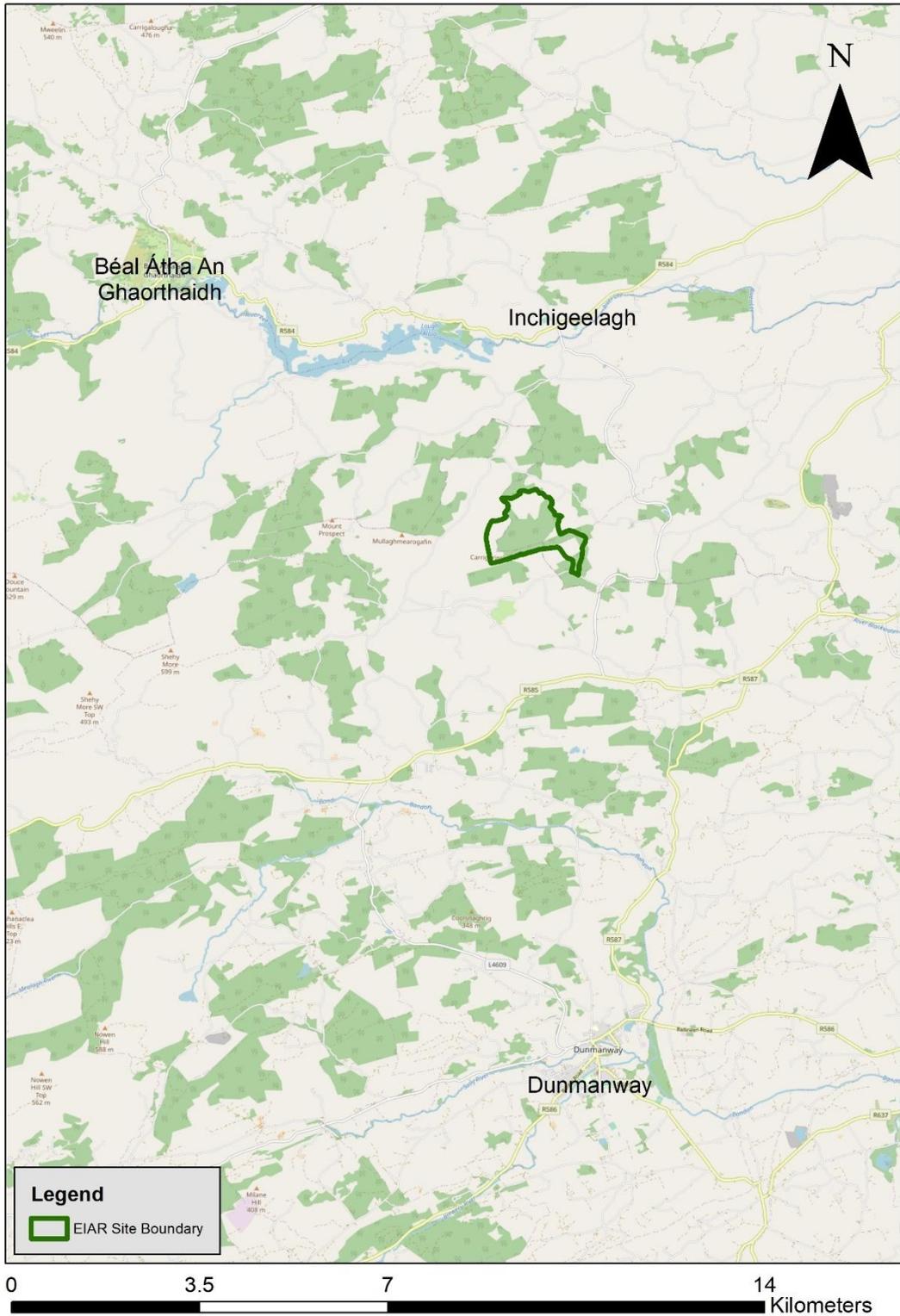


Figure 12-1 Site Location

12.2 Assessment Methodology

The assessment of the archaeology, architecture and cultural heritage of the Proposed Development area included GIS mapping and desk-based research followed by field inspection. A desk-based study 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 Proposed Development site.

12.2.1 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 a 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, for example of the observed features (e.g. turbines), and the maximum viewing distance of the observer. This tool was utilised to ascertain the potential/theoretical visual effects on Cultural Heritage Assets. The results show the worst-case scenario since the model does not take trees or vegetation into consideration. The results are outlined in Section 13.3.

12.2.2 Desktop Assessment

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

- The Record of Monuments and Places (RMP)
- The Sites and Monuments Record (SMR)
- National Monuments in State Care County Cork
- The Topographical Files of the National Museum of Ireland
- First edition Ordnance Survey maps (OSI)
- Second edition Ordnance Survey maps (OSI)
- Third edition Ordnance Survey Map (Record of Monuments and Places)
- Aerial photographs (copyright of Ordnance Survey Ireland (OSI))
- Excavations Database
- National Inventory of Architectural Heritage (NIAH)
- Record of Protected Structures (Cork County Development Plan)
- Previous archaeological surveys and assessments carried out on or near to the Proposed Development site (various)
- Archaeological inventory of County Cork

Each of these are discussed in the following sections.

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

A primary cartographic source and base-line data for the assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Cork. 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 informed the baseline data. This may be accessed at www.webgis.archaeology.ie/historicenvironment.

A review of all National Monuments in State Care and those subject to Preservation Orders was undertaken as part of the assessment in order to ascertain any potential impacts on their setting as a result of the Proposed Development.

12.2.2.2 Cartographic Sources and Aerial Photography

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

12.2.2.3 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 same. Heritage Maps contain locational detail for Museum finds.

12.2.2.4 Archaeological Inventory Series

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

12.2.2.5 Record of Protected Structures

The Record of Protected Structures for County Cork was consulted for the schedule of buildings and items of cultural, historical or archaeological interest which may be affected by the Proposed Development. The Cork County Development Plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of Cork. The digital dataset for Protected Structures was downloaded from ArcGIS online and added to the project GIS mapping (Section 12.2.1 above) used for the creation of figures in this chapter.

12.2.2.6 Excavations Database

The Excavations Database is an annual account of all excavations carried out under license. The database is available online at www.excavations.ie and includes excavations from 1985 to 2019. 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 Proposed Development area.

12.2.2.7 National Inventory of Architectural Heritage (NIAH)

This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county by county basis by the Department of Housing, Local Government and Heritage. The NIAH database was consulted for all townlands within and adjacent to the study area. The NIAH survey for Cork has been published and the digital dataset was downloaded on to the base mapping for the Proposed Development (www.buildingsofireland.ie). The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Housing, Local Government and Heritage 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 Culture, Heritage and the Gaeltacht 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.

12.2.2.8 Previous Archaeological Input relating to the site

The existing Carrigarierk Wind Farm and substation with associated grid connection route was previously subject to an EIAR (Planning References 15/730 and 17/431). Furthermore, licensed archaeological monitoring of construction works associated with the latter was also undertaken in 2019/20 by Tobar Archaeological Services. These are discussed in Section 12.3.2.6 below.

12.2.3 Field Inspection

Field inspection of the Proposed Development was undertaken over a number of days in September and October 2020. The Proposed Development site and its surrounds were inspected by Annette Quinn and Miriam Carroll of Tobar Archaeological Services. The inspection consisted of a walk-over examination of the Proposed Development site, an assessment of any recorded monuments, architectural, built or cultural heritage items within the site and the potential direct and indirect impacts on those monuments. Any newly discovered archaeological monuments, items of built heritage or cultural heritage value within the study area were also recorded during the field inspection. A full photographic record of the site was made and is described below in Section 12.3.1.

12.2.3.1 Limitations Associated with Fieldwork

No significant limitations were associated with the field work for the Proposed Development. The area of the proposed borrow pits and Turbine no. E1 are largely covered in dense coniferous forestry, although both areas were accessed on foot and assessed. The presence of existing roads allowed good general access to the site.

12.2.4 Assessment of Likely Significant Effects

The likely effects on the existing archaeological, architectural and cultural heritage environment are assessed using the criteria as set out in the draft *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2017) and as outlined in Section 1.7.2 of Chapter 1. The following terminology is used when describing the likely effects of the Proposed Development from a Cultural Heritage perspective.

12.2.4.1 Types of Impact

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

- Indirect 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 larger, more significant impact.
- Residual Impacts are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

12.2.4.1.1 **Magnitude of Effects (Significance)**

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

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

A standardised approach was utilised for the assessment of impacts of visual setting (indirect effects) according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity. This assessment does not include visits to each and every monument outside the EIAR unless publicly accessible. The assessment of impacts on visual setting was undertaken using both the Zone of Theoretical Visibility (ZTV) map in the Landscape and Visual Impact Assessment (LVIA), as presented in Chapter 13 of this EIAR (Figure 13-1), and also viewshed analysis from specific cultural heritage assets (viewshed analysis is described in Section 12.2.1 above). The viewshed analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 5km and 10km considers the effects of the proposed turbines only. Other lower visibility infrastructure such as roads, internal cabling, etc. are not included in the viewshed analysis. All other infrastructure (proposed roads, internal cabling, compounds etc) are assessed without the use of viewshed analysis.

While direct physical impacts to a site or monument can easily be assessed in quantitative terms, the assessment of impacts on setting can be subjective and as such is a matter of qualitative, professional

judgement and experience. The distances below used in the assessment of impacts on setting are regarded as appropriate and are based on professional judgement.

Table 12-1: Cultural Heritage Assets considered according to sensitivity (where relevant only)

Cultural Heritage Asset	Distance Considered
UNESCO World Heritage Sites (including tentative sites, if relevant)	20km
National Monuments (State Ownership and Preservation Order Sites)	10km
Recorded Monuments, RPS	5km
NIAH structures	5km
Undesignated sites, if relevant	500m from Proposed Development

12.3 Existing Environment

12.3.1 Description of the Proposed Development Area

The following provides a description of the Proposed Development site and a photographic record of same.

12.3.1.1 Turbine E1

The proposed road to Turbine E1 is located immediately to the northwest of T3 within the existing Carrigarierk Wind Farm site. The proposed road initially traverses low-lying marshy waterlogged ground which has been clear-felled. It extends in a northerly direction into forestry and then along an overgrown area of unplanted ground. The latter was waterlogged and heavily overgrown with gorse and heather. The proposed turbine and hardstand are located in a forested section of the site with some firebreaks extending in a NW/SE direction through the area.



Plate 12-1: Southern extent of proposed road to E1 looking north-northwest.



Plate 12-2: Continuation of proposed road looking north-northwest.



Plate 12-3: Same as above looking north.



Plate 12-4: Proposed road to E1 looking north.



Plate 12-5: Section of proposed road after it exits from forested section through gorse and heather covered ground looking north.



Plate 12-6: Continuation of proposed road in a northerly direction looking north.



Plate 12-7: Proposed road to EI looking south in the area adjacent to proposed borrow pit BPI.



Plate 12-8: Continuation of proposed road looking north.



Plate 12-9: Proposed road to E1 looking south.



Plate 12-10: Southern part of hardstand for Turbine E1 looking west.



Plate 12-11: Southwestern section of hardstand for E1 looking west.



Plate 12-12: General context within which E1 will be constructed looking north.



Plate 12-13: Proposed road adjacent to hardstand for EI looking northwest.



Plate 12-14: Northern section of proposed hardstand for EI looking northeast.

12.3.1.2 Turbine E2

The proposed road to Turbine E2 branches off from the proposed road to E1 in a north easterly direction through clear-felled forestry which has been replanted. It then follows a rough track where it crosses a shallow stream (ankle deep) which has been culverted with a plastic pipe. The proposed road then traverses through young forestry and emerges into low-lying rough pastureland which is largely rush covered. A number of low-stone walls forming an old access road and a derelict 19th century house are located to the east of the proposed road and turbine E2. The road, hardstand and turbine base were moved further to the west to avoid these cultural heritage features.



Plate 12-15: Proposed road to E2 looking northeast through replanted land.



Plate 12-16: Continuation of proposed road to E2 looking southwest.



Plate 12-17: Stream culverted with modern plastic pipe at ITM 521484 , N562180 looking southwest.



Plate 12-18: View of proposed road (replanted) to E2 and location of E2 as well as existing Cleanrath Wind Farm looking north.



Plate 12-19: Northern portion of proposed road to E2 looking south.



Plate 12-20: General view of proposed E2 hardstand and turbine E2 looking north.



Plate 12-21: Proposed E2 hardstand looking north, taken from within southern section of hardstand.



Plate 12-22: Location of proposed turbine E2 looking north.

12.3.1.2.1 **Cultural Heritage to the east of Turbine E2 and associated access road.**



Plate 12-23: Old access road to derelict 19th century house (shown only on Cassini 6 inch maps) , looking north. This is located to the east of the proposed road.



Plate 12-24: Derelict 19th century house surrounded by low stone field enclosure (marked on Cassini 6 inch maps) looking east.



Plate 12-25: Same as above from the east looking west.



Plate 12-26: Remains of historic trackway which leads to derelict 19th century house as described above, looking east.

12.3.1.3 Turbine E3

The proposed road to E3 branches off the proposed road to E2 and then follows an existing track which is due to be upgraded. The proposed road then traverses a high artificial bank of topsoil (possibly originated from the construction of the forestry track) and extends into a green field section of the site.



Plate 12-27: Location where proposed road to E3 leaves the existing track and enters into pastureland, looking north-east.



Plate 12-28: Western section of proposed E3 hardstand looking east.



Plate 12-29: Area of proposed turbine E3 looking east .



Plate 12-30: Low well preserved field boundary wall separating field within which E3 is located and forestry, aligned north/south looking north.



Plate 12-31: View looking north from Turbine E3 at Cleanrath and Derragh Wind Farms.

12.3.1.3.1 **Cultural Heritage to the north of turbine E3**

A number of 19th century or later structures were recorded to the north of Turbine E3. They are likely to date to the same period as the walls and house recorded to the east of E2 and are linked by the existing farm track. The remains of a small building was recorded on the northern side of the existing farm track. The existing track itself follows the line of the historic track marked on the Cassini 6 inch OS map (not marked on 1st Edition OS map) and would appear to have been in use since. The structure is marked as a solid building on the OS Cassini map within a small enclosed field. Approximately 30m to the east along the existing track, another structure was recorded at the southern side of the trackway. At approximately 50m to the northeast along the same farm track, the remains of one wall of a building was recorded and again this is marked on the 6 inch Cassini and not any earlier mapping. This is located just to the west of where the Recorded Monument (site of) CO093-020 (Standing Stone) is located. The structure is marked as a solid building. A large natural outcrop of stones is marked in the location of where the standing stone is marked on the Historic Environment Viewer and also the location of where it is shown on the 1st Edition OS map as 'Gallaun'. It may be the case that the natural structure was named Gallaun in the 19th century.



Plate 12-32: Building (now collapsed) located at ITM E521904, N562664 looking north



Plate 12-33: Remains of building shown on 6 inch Cassini at ITM E521942 , N562662.

12.3.1.4 **Proposed Borrow Pit (BP1)**

This borrow pit is located to the west of the proposed road to Turbine E1.



Plate 12-34: Proposed borrow pit location on north facing slope within forestry looking south-west.



Plate 12-35: Area of proposed borrow pit looking south.

12.3.2 Archaeological Heritage

Archaeological Heritage includes National Monuments, sites which are subject to a preservation order, sites listed in the RMP/SMR and newly discovered archaeological sites. Each of these are addressed in the following sections.

12.3.2.1 National Monuments

National Monuments are those recorded monuments which are in the ownership / guardianship of the Minister for Housing, Local Government and Heritage. They are frequently referred to as being in 'State Care'. An assessment of all National Monuments in State Care and those subject to Preservation Orders within 10km of the proposed turbines was undertaken to ascertain any potential impacts on their visual setting (See Section 12.2.5 for methodology of assessment). Viewshed analysis (see Figures 12-3 to 12-5) has been undertaken in order to ascertain what views of the proposed turbines may be possible from the National Monuments from an observer's perspective (i.e. person/visitor). Three monuments are listed in

Table 12-2 and shown on
 Figure 12-2 National Monuments within 10km of the nearest proposed turbine

Table 12-2: National Monuments and those subject to Preservation Orders within 10km of nearest proposed turbine.

NM No.	SMR NO.	ITM E	ITM N	NAME	TOWNLAND	WTG NO.	DISTANCE (KM)
233	CO094-060001	531230	560561	Cahervagliar Ringfort	Cappeen West	E3	9.4
374	CO093-043	521442	560909	Farranahineeny Stone Row	Farranahineeny	E1	1.3



12/1971	CO107-008	517201	555870	Dromdrasdil Stone Row	Dromdrasdil	E1	7.4
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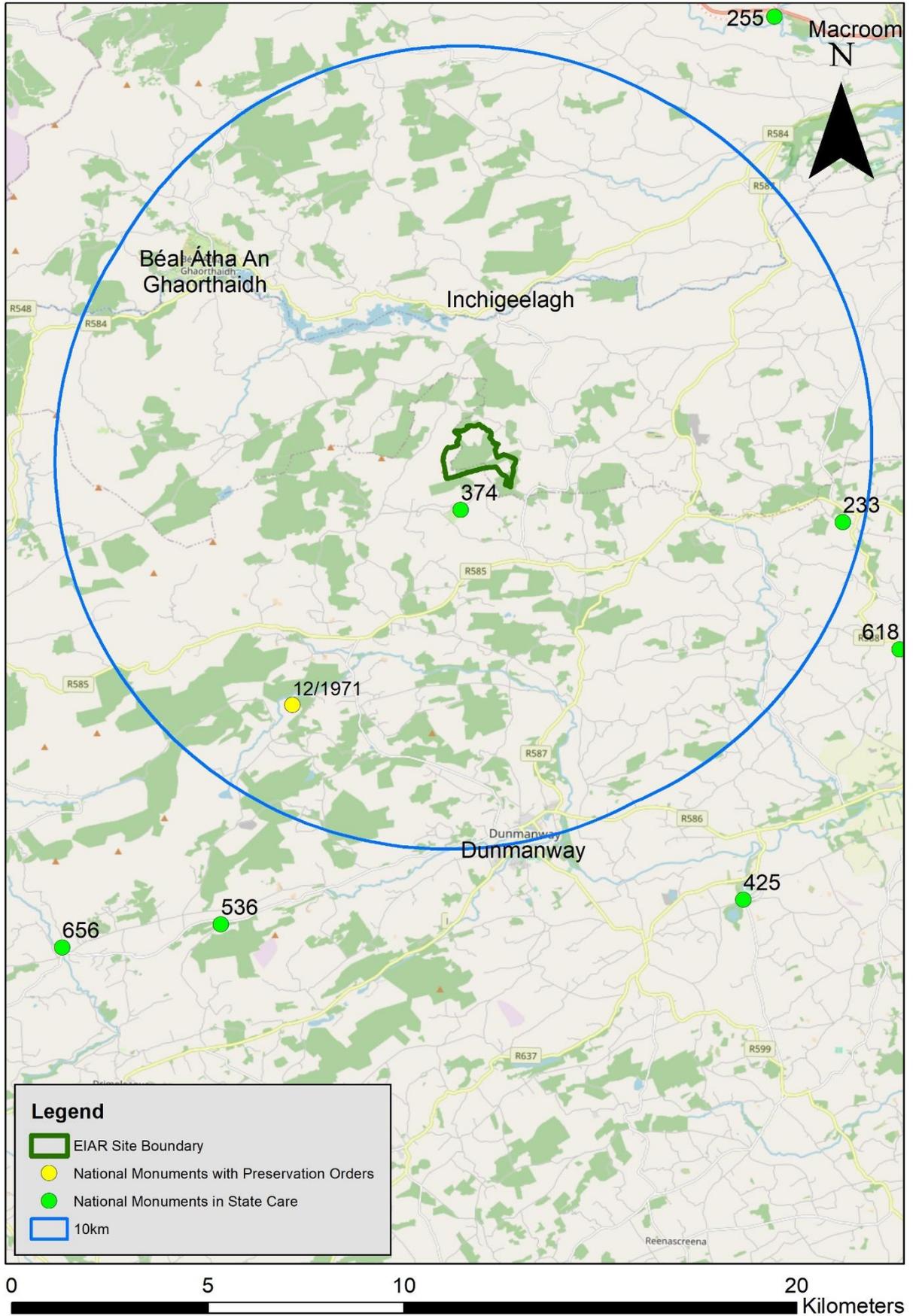


Figure 12-2 National Monuments within 10km of the nearest proposed turbine

12.3.2.1.1 Visibility from National Monuments

National Monument 233, CO094-060001 Cahervagliar Ringfort, Cappeen West

Description of the monument from Historic Environment Viewer:

'In pasture, atop slight spur, near W end of small river valley. Circular area (39m N-S; 39m E-W) enclosed by substantial earthen bank (int. H 1.7m); traces of stone facing on inner face. Second bank, separated from inner bank by shallow fosse, survives best to N (H 0.6m); external fosse (D 3m). Entrance to ESE, in ruins before excavation and reconstruction by OPW 1983-4 (Manning 1987-8). Dry-stone lintelled entrance (L 7.7m; max. Wth 2m) of roughly coursed large stones, through inner bank, encroaching on line of inner fosse. Excavation revealed sill stone at front with pair of double post-holes on its inside; second pair of post-holes midway along passage in shallow gully; possible third set at inner end. Stone facade on outer bank face flanking entrance (L 4.12m). According to the excavator, on the basis of the masonry the entrance is likely to date to within a century or two of the year 1000 A.D.' (Manning 1987-8, 54). Cultivation ridges cross interior on N-S axis; souterrain (CO094-060002-) in SE quadrant. National Monument no. 233.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances the entries have been revised and updated in the light of recent research.

Viewshed analysis (see **Error! Reference source not found.**) results are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration. The results show that Turbine E1 and Turbine E3 may be visible from mid tower upwards and that the upper portion of Turbine E2 may be seen from the monument. There are good views in a westerly direction from Cahervagliar ringfort but numerous boundaries are also located in the vicinity as well as forestry plantations visible in all directions. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) also shows that this monument is located within an area that shows potential visibility of 3 turbines. This accords with the viewshed in that some level of potential visibility was demonstrated for all 3 turbines. Existing screening and the intervening distance to the nearest proposed Turbine E3 (9.4km) should minimise any potential impacts on setting. Impacts are addressed in section 12.4.5 below.

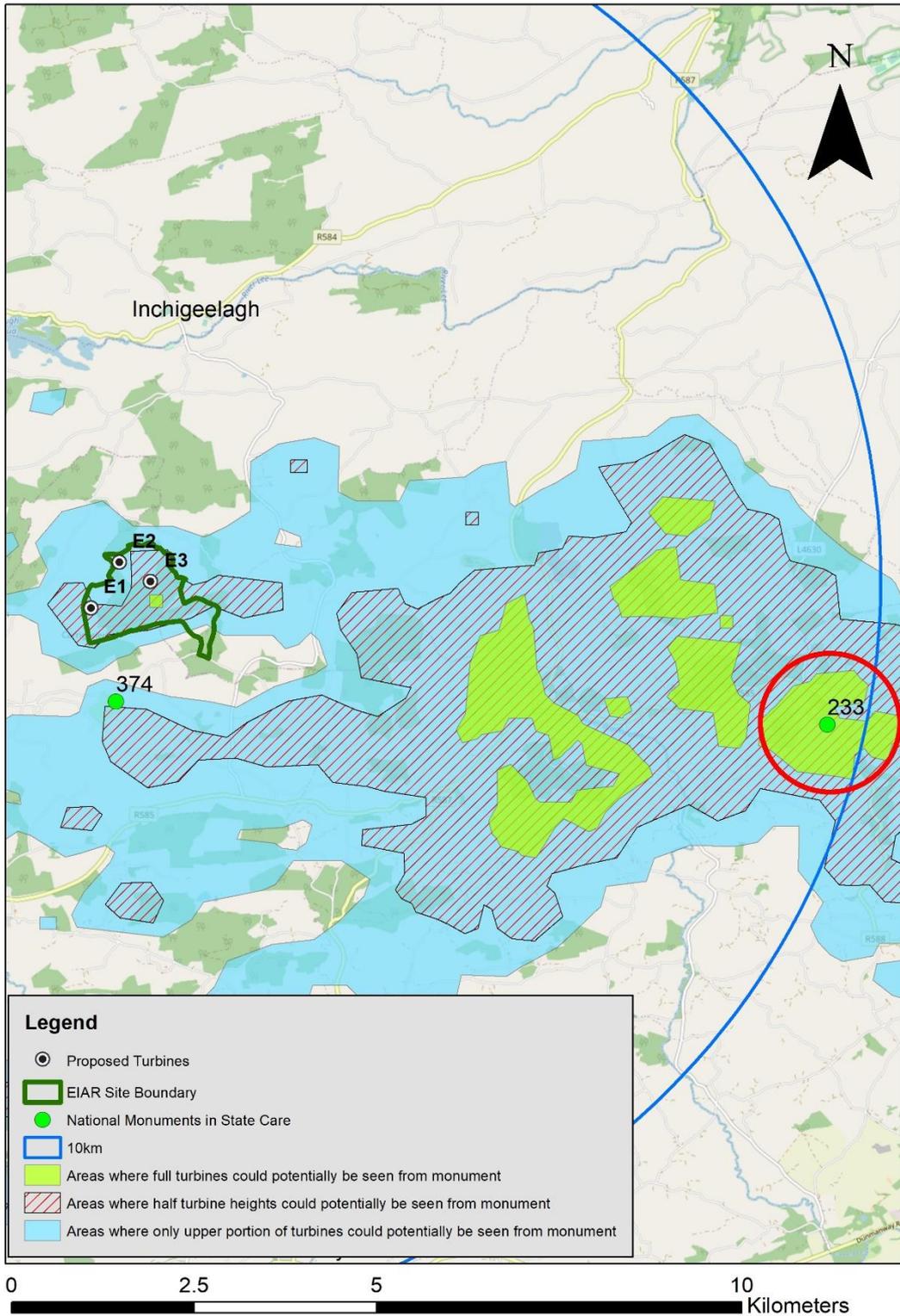


Figure 12-3 Viewshed analysis results for NM233 Cahervagliar Ringfort

National Monument 374, CO093-043 Farranahineeny Stone Row, Farranahineeny

Description of the monument:

'On bog-covered S spur of Carrigariark at E end of Shehy mountain. Row of four stones, aligned NE-SW, and 8.2m in overall length. NE stone is 0.8m L, 0.5m T and 1.3m H. The second stone, 2.55m to SW, is 0.65m L, 0.4m T and 1.25m H. Third stone, 1.2m further to SW, is 1.1m L, 0.3m T and 1.6m H. SW and tallest stone, 1.2m from last, is 0.8m L, 0.65m T and 2.8m H. Fifth stone lies to N of second stone; it measures 2.45m by 0.7m and is 0.3m T. It is not clear if this formed part of the row. Group of stones, partly covered by fence, 6m to SW. (National Monument No. 374; Ó Nualláin 1988,235, no.35)'.

The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992).

The viewshed results (see **Error! Reference source not found.**) show that Turbine E2 will not be visible from the stone row. It shows that Turbine E1 may be visible from mid shaft upwards and that only the upper portion of the other Turbine E3 may be visible. The viewshed results also show that the most extensive views from the stone row are to the west, south, east and north-east with limited views to the north. The results are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) also shows that this monument is located within an area that shows potential visibility of 2 turbines. This accords with the viewshed in that some level of potential visibility was demonstrated for 2 turbines. Screening in the form of boundaries and trees do not exist between the monument and the Proposed Development and therefore the potential impact will remain the same. Photomontage 19 (Photomontage Booklet - Volume 2) shows that Turbine E1 and the blade from Turbine E3 can be seen from the monument.

An analysis of the rising and setting sun at Farranahineeny Stone Row was undertaken in order to ascertain if any of the proposed turbines would interfere with the winter or summer solstice. On June 21st the rising sun is located to the north-east of the stone row which the stone row is aligned to. None of the proposed turbines are located along this trajectory. On the 21st December, the setting sun is located to the southwest along the trajectory of the alignment of the stone row. None of the proposed turbines will impact on this potential alignment. In general, a change to the wider setting of the stone row will occur but given the varying degrees of visibility of two of the three proposed turbines from the monument, impacts on setting are likely to be slight/moderate. Impacts are addressed in section 12.4.5 below.

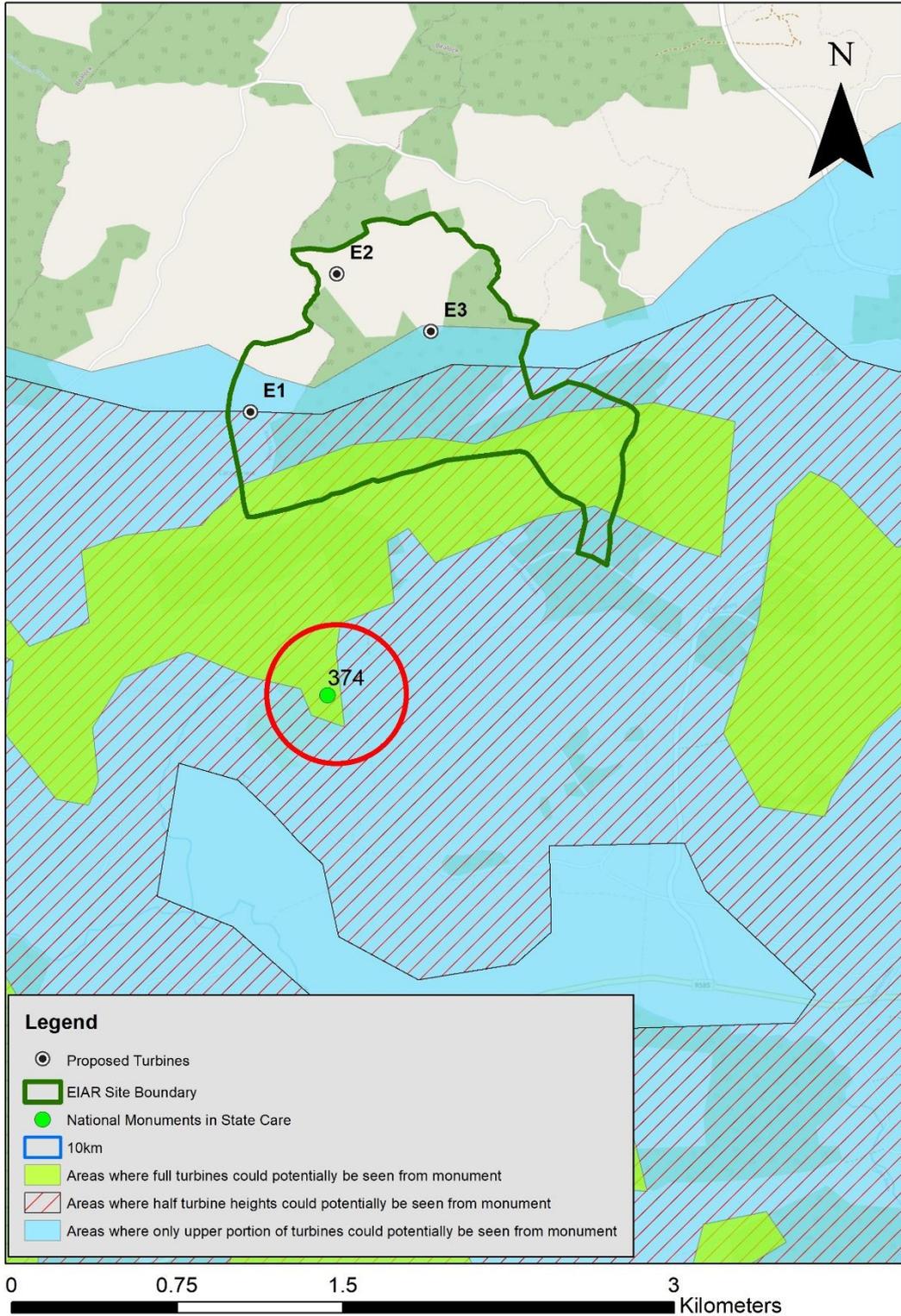


Figure 12-4 Viewshed analysis results from National Monument No 374, Farranahineeny Stone Row.

National Monument 12/1971, CO107-008 Dromdrasdil Stone Row, Dromdrasdil

Description of the monument:

‘On small patch of pasture, on rocky ridge, in broad shallow valley of Bandon river. Row of four stones, aligned NE-SW, and 5.5m in overall length. NE stone is 0.85m L, 0.3m T and 1.2m H. Next stone, 0.4m

to SW, is 0.75m L, 0.4m T and 1m H. Third stone, 0.5m further to SW, is 0.75m L, 0.2m T and 1.75m H. SW and tallest stone, 1.15m from last, is 1.1m L, 0.4m T and 2.1m H. (Ó Nualláin, 1988, 236, no. 41). The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 1: West Cork' (Dublin: Stationery Office, 1992). In certain instances, the entries have been revised and updated in the light of recent research. This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 12/1971).

Viewshed analysis results (see Figure 12-5) are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration. The results show that Turbine E2 will not be visible from the monument. It also shows that Turbine E1 may be visible from mid tower upwards and that only the upper portion of Turbine E3 may be seen. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) shows that this monument is located within an area that shows potential visibility of two turbines. The area of the monument is surrounded by fairly substantial field boundaries which in reality are likely to screen the turbine from views and together with the separation distance to the nearest proposed turbine (7.4km) would result in an effect considered to be Not Significant.

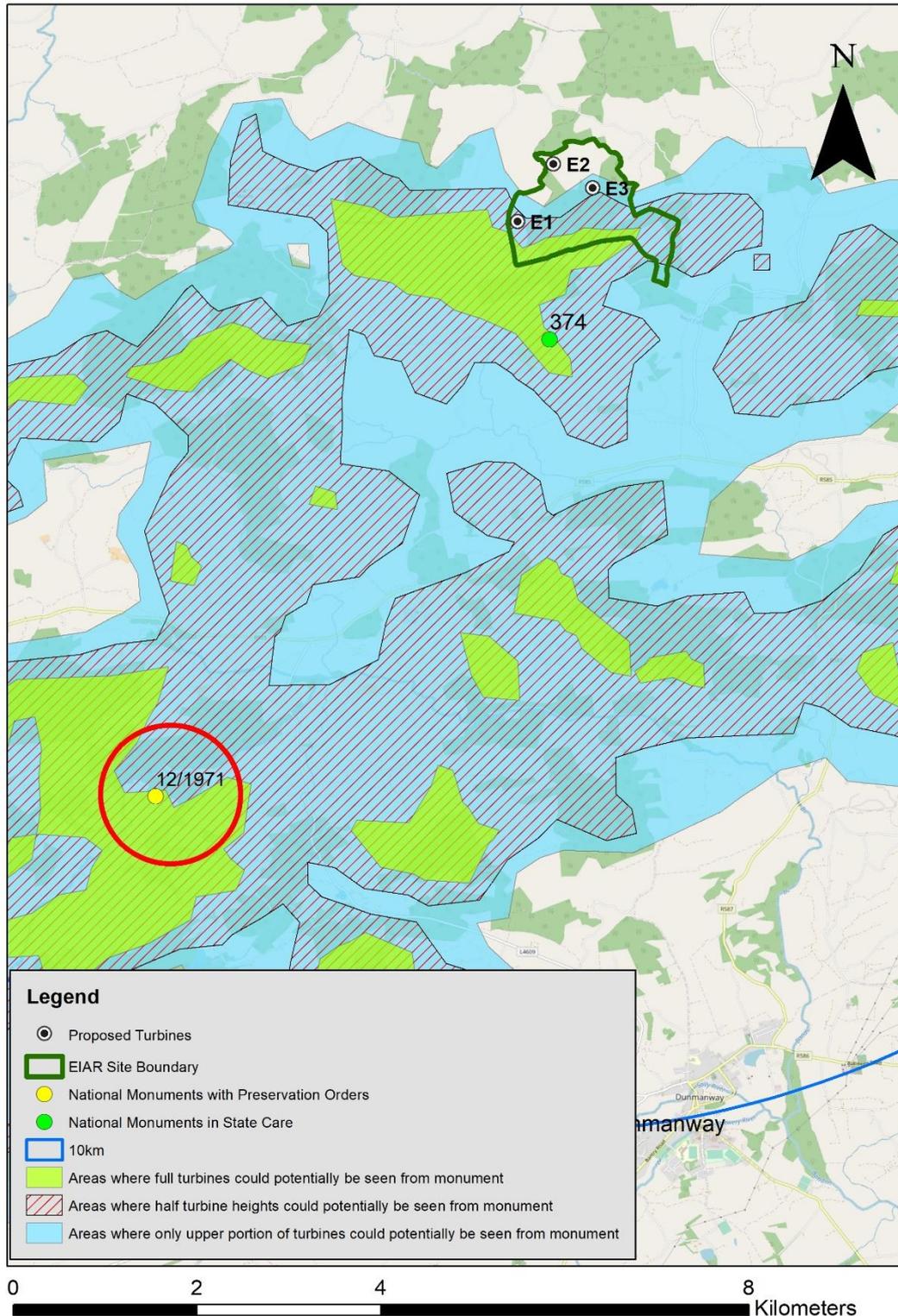


Figure 12-5 Viewshed analysis results from National Monument No. 12/1971

12.3.2.2 Recorded monuments within the EIAR Site Boundary

Three recorded monuments subject to statutory protection as defined in the Record of Monuments and Places (RMP) or Sites and Monument Record (SMR) are located within the EIAR Site Boundary for the Proposed Development. The monuments are listed in Table 12-3 below and described thereafter. The sites were assessed as part of the EIAR and subject to an on-site inspection.

Table 12-3: Recorded monuments within the EIAR Site Boundary.

RMP NO.	ITM E	ITM N	CLASS	TOWNLAND	WTG ID	DISTANCE (M)
CO093-020	521995	562719	Standing stone	Derryleigh	E3	182
CO093-091	522872	562109	Mass-rock	Carrigdangan	E3	1000
CO093-092	522812	562094	Mass-house	Carrigdangan	E3	967

12.3.2.2.1 Descriptions of the Monuments within the EIAR Site Boundary

The descriptions in italics are extracts from the Sites and Monuments Record files on the National Monuments Service public Historic Environment Viewer. The locations of the monuments within the EIAR Site Boundary are shown below in Figure 12-6.

CO093-020 Derryleigh Standing Stone (site of)

‘Shown on 1842 and 1902 OS 6-inch maps as single standing stone. In young forestry. Removed; no visible surface trace’. The above description is derived from the published 'Archaeological Inventory of County Cork. Volume 3: Mid Cork' (Dublin: Stationery Office, 1997). In certain instances the entries have been revised and updated in the light of recent research.

The site of this monument was inspected as part of the assessment. A large natural rock outcrop is located in the approximate area of where monument centre point is shown on the Historic Environment Viewer. The description of the monument above suggests that the monument is in young forestry, however, the centre point for the monument is shown in overgrown rough pasture land. No visible surface trace of any single standing stone was located. Impacts will not occur since there is no visible trace of the monument. Sub-surface features are mitigated by the use of buffer zones and are addressed in Section 12.4.3.2.1 below.



Plate 12-36: Natural rock in location of Standing stone CO093-020 looking NW.



Plate 12-37: Same feature looking East.

CO093-091 Mass Rock

The mass rock is located to the east of an existing site track that was constructed as part of the existing Carrigierk Wind Farm. This monument was assessed as part of the original Carrigierk Wind Farm application and access to the location of the monument was not gained at this time due to dense overgrowth of furze and forestry. A 30m protective buffer zone was set up by Tobar Archaeological Services and the client on the 2nd August 2019 in compliance with the planning permission relating to the existing Carrigierk wind farm. This monument is now fenced off. A description of this monument is not currently available on the Historic Environment Viewer. Impacts on setting will not occur since there are no views from the monument.



Plate 12-38: 30m buffer zone around Mass Rock CO093-091.



Plate 12-39: Mass Rock buffer zone established in 2019.

CO093-092 Mass House

The Mass House is located to the west of an existing site track that was constructed as part of the existing Carrigierck wind farm. This monument was assessed as part of the Carrigareirck wind farm. A 30m protective buffer zone was set up by Tobar Archaeological Services and the client on the 2nd August 2019 in compliance with the planning permission relating to the existing Carrigierck wind farm. This monument is now fenced off as shown below. A description of this monument is not currently available on the Historic Environment Viewer.

The Mass House CO093-092 was accessed through dense overgrowth and a high ridge of rock from the existing forest track to the south of the monument. The mass house is extant although is densely overgrown with trees and bushes. Wind fallen trees are also located abutting the structure. A building is shown on the Cassini 6 inch mapping in this location although is not named. It is not marked on the 1st Edition OS map for the site. Impacts on setting will not occur since there are no views from the monument.



Plate 12-40: Remains of Mass House CO093-092 as originally recorded in 2016.



Plate 12-41: 30m buffer zone around Mass House CO093-092.



Plate 12-42: 30m buffer zone around Mass House CO033-092

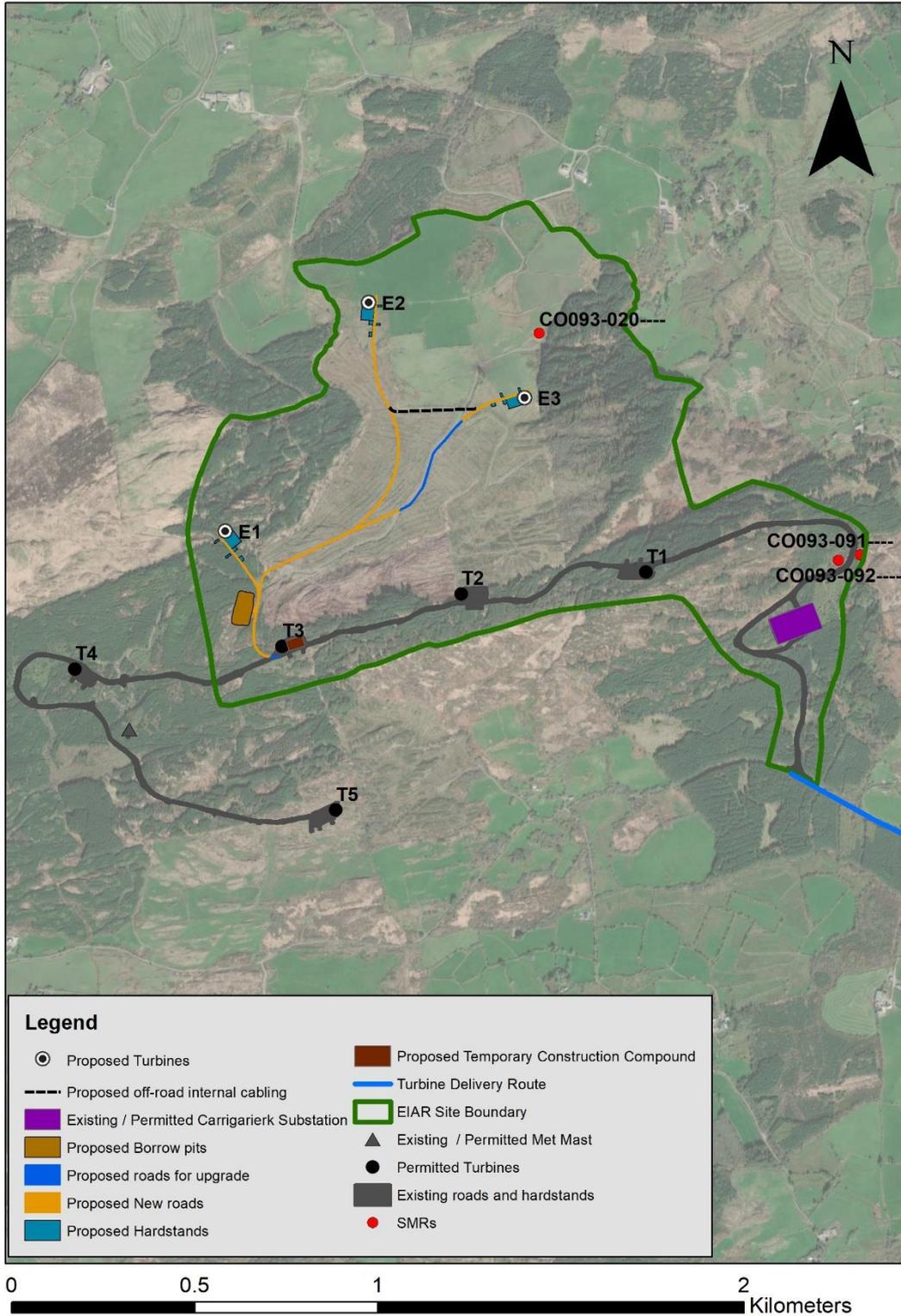


Figure 12-6 SMRs located within the EIAR Site Boundary.

12.3.2.3 Newly recorded archaeology within the EIAR Site Boundary

No new above ground archaeological features (i.e. pre 1700 AD) were noted within the EIAR Site Boundary. A number of 19th century structures and associated walls and historic roads were recorded in the vicinity of Turbines E2 and E3 and these are described in Sections 12.3.1.1, 12.3.1.2 and 12.3.1.3.

12.3.2.4 Potential sub-surface archaeology within the EIAR Site Boundary

Sub-surface archaeology, by its very nature, is not detectable above ground and can occur within or below the topsoil. Such archaeological features may not be apparent during a visual examination of a site. Construction activities (excavation) associated with the proposed turbines and associated infrastructure including proposed roads, excavation associated with the cable route, road widening associated with the proposed turbine delivery route may directly impact on such features if present within the EIAR Site Boundary. Furthermore, archaeological sites such as fulacht fiadh can occur near to streams or watercourses. All watercourses encountered were visually assessed and examined. It was not possible to either wade or dive any such water bodies. All shallow streams occurred within a clear-felled and re-planted coniferous forest which was previously largely drained with 2 of the three streams culverted with plastic pipes. Any sub-surface archaeological features will be mitigated by archaeological monitoring during construction.

Direct effects are addressed in Section 12.4.3.4 below.

12.3.2.5 Recorded Monuments within 5km of the proposed turbines

One hundred and thirty-five (135) archaeological monuments are located within 5km of the nearest proposed turbine and these are detailed below in Table 12-4. The distance (5km) criteria methodology is described in Section 12.2.5. The monuments are labelled from 1-135 (Map ID) for ease of reference on **Error! Reference source not found..** Monuments within 5 kilometres of the proposed turbines are included here for purposes of assessing potential visual impacts in the wider landscape setting. Ten monuments are located within 1km of the nearest proposed turbine, 27 between 1 and 2km, 25 between 2 and 3km, 36 monuments between 3 and 4km and 37 between 4 and 5km. The monuments are distributed through the 5km study area with no particular clusters identified. A breakdown of the monuments by type is depicted on Figure 12-8.

All such sites within 5km of the nearest proposed turbine are included in the table below. As they date from the prehistoric period through to the medieval period, they are discussed in the relevant sections below.

Direct and Indirect effects are addressed in Section 12.4 below.

Table 12-4: RMPs within 5km of the nearest proposed turbine.

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
1	CO093-020---	521995	562719	Standing stone	Derryleigh	E3	158
2	CO081-028001-	522137	563021	Ringfort - rath	Derryleigh	E3	488
3	CO081-028002-	522137	563021	Souterrain	Derryleigh	E3	488
4	CO081-027---	520874	563117	Standing stone	Gortnahoughtee	E2	725
5	CO093-019---	520821	561461	Megalithic tomb - wedge tomb	Clogher	E1	779
6	CO093-019001-	520821	561461	Rock art	Clogher	E1	779

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
7	CO081-026----	520991	563382	Ringfort - rath	Gortnahoughtee	E2	789
8	CO081-039----	520991	563382	Souterrain	Gortnahoughtee	E2	789
9	CO093-096----	520296	562184	Field boundary	Gortnahoughtee	E1	850
10	CO093-092----	522812	562094	Mass-house	Carrigdangan	E3	971
11	CO081-036----	521747	563796	Structure	Gortnahoughtee	E2	1015
12	CO093-091----	522872	562109	Mass-rock	Carrigdangan	E3	1017
13	CO093-021001-	522272	561548	Ringfort - cashel	Gurteen	E3	1063
14	CO093-021002-	522272	561548	Souterrain	Gurteen	E3	1063
15	CO081-032----	523037	563190	Burial ground	Gortatanavally	E3	1243
16	CO081-029----	522978	563318	Megalithic tomb - wedge tomb	Derrygortnacloghy	E3	1264
17	CO093-015----	519887	561947	Megalithic tomb - wedge tomb	Lackabaun	E1	1278
18	CO093-105----	519915	561712	Mass-rock	Lackabaun	E1	1313
19	CO081-030----	523004	563400	Redundant record	Derrygortnacloghy	E3	1335
20	CO093-043----	521498	560877	Stone row	Farrannahineeny	E1	1340
21	CO081-031----	523109	563311	Standing stone	Derrygortnacloghy	E3	1368
22	CO093-048001-	521676	560893	Enclosure	Crushterra	E1	1382
23	CO093-048002-	521676	560893	Fulacht fia	Crushterra	E1	1382
24	CO093-022002-	523518	562540	Megalithic tomb - wedge tomb	Carrigdangan	E3	1555
25	CO093-022001-	523522	562576	Redundant record	Carrigdangan	E3	1559
26	CO093-018----	519602	562466	Stone row	Monavaddra	E1	1572
27	CO093-049----	521874	560758	Ogham stone	Crushterra	E1	1588
28	CO093-017----	519623	562625	Megalithic tomb - wedge tomb	Monavaddra	E1	1590
29	CO093-075----	519991	561000	Souterrain	Clogher	E1	1644
30	CO093-041----	521197	560482	Burial ground	Farrannahineeny	E1	1688

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
31	CO081-025----	520244	563971	Standing stone	Cooragreenane	E2	1735
32	CO081-023----	519843	563396	Ringfort - cashel	Monavaddra	E2	1787
33	CO093-072----	523606	561798	Souterrain	Carrigdangan	E3	1813
34	CO093-042----	521236	560332	Standing stone	Farrannahineeny	E1	1840
35	CO081-022----	519420	563041	Standing stone	Monavaddra	E1	1934
36	CO093-040002-	520876	560199	Fulacht fia	Tullagh	E1	1989
37	CO093-023----	523676	561548	Ringfort - rath	Carrigdangan	E3	1992
38	CO093-039----	520026	560509	Ringfort - rath	Tullagh	E1	2003
39	CO093-014----	519271	561446	Standing stone - pair	Lackabaun	E1	2010
40	CO093-040001-	520860	560169	Redundant record	Tullagh	E1	2021
41	CO081-033----	523357	564161	Ringfort - rath	Gortanecadin	E3	2119
42	CO093-016----	519012	562716	Enclosure	Monavaddra	E1	2203
43	CO081-013----	521866	565015	Mass-rock	Curraheen	E2	2236
44	CO081-024----	519942	564414	Ringfort - rath	Cooragreenane	E2	2260
45	CO093-013----	519159	560899	Stone circle - multiple-stone	Coolmountain	E1	2358
46	CO093-047----	522003	559881	Ringfort - rath	Dromlough	E1	2444
47	CO081-052----	520445	565068	Enclosure	Cooragreenane	E2	2509
48	CO081-048----	520483	565104	Boulder-burial	Cooragreenane	E2	2526
49	CO082-113----	524397	563250	Mass-rock	Commons	E3	2529
50	CO093-046----	521457	559608	Barrow - ring-barrow	Dromlough	E1	2580
51	CO093-050----	523230	560295	Souterrain	Inchincurka	E3	2599
52	CO093-112----	518531	562380	Children's burial ground	Moneylea	E1	2623
53	CO082-062----	524600	563098	Standing stone	Commons	E3	2690
54	CO093-111----	518447	562107	Souterrain	Moneylea	E1	2700
55	CO093-045----	521092	559456	Redundant record	Dromdeegy	E1	2714

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
56	CO093-038----	519040	560368	Standing stone	Tullagh	E1	2771
57	CO081-047----	519113	564199	Megalithic tomb - wedge tomb	Gortnacarriga	E2	2789
58	CO094-001----	524841	562302	Ringfort - rath	Johnstown	E3	2890
59	CO094-112----	524826	562096	Church	Johnstown	E3	2901
61	CO093-044001-	520837	559228	Hut site	Dromdeegy	E1	2958
60	CO093-044----	520837	559228	Ringfort - cashel	Dromdeegy	E1	2958
62	CO093-051----	523197	559833	Souterrain	Inchincurka	E3	2998
63	CO094-002001-	524999	562224	Burial ground	Johnstown	E3	3055
64	CO094-002002-	525010	562236	Standing stone	Johnstown	E3	3065
65	CO094-037----	524474	560728	Church	Kilnadur	E3	3111
66	CO094-003----	525059	562185	Redundant record	Johnstown	E3	3119
67	CO093-052001-	523230	559626	Fulacht fia	Inchincurka	E3	3200
68	CO081-050----	518978	564789	Megalithic structure	Coornahahilly	E2	3232
69	CO093-052002-	523251	559578	Megalithic tomb - wedge tomb	Inchincurka	E3	3253
70	CO081-040----	522424	565944	Bridge	Carrigeigh	E2	3264
71	CO093-037----	519260	559496	Redundant record	Moneyreague	E1	3272
72	CO094-038----	524714	560695	Mass-rock	Kilnadur	E3	3326
73	CO081-014001-	522409	566056	Church	Carrigeigh	E2	3368
74	CO081-014005-	522481	566084	Barracks	Carrigeigh	E2	3415
75	CO093-053----	523393	559449	Standing stone	Inchincurka	E3	3428
76	CO081-014004-	522479	566127	Standing stone	Carrigeigh	E2	3455
77	CO081-021----	518034	563711	Burial ground	Gortnacarriga	E1	3473
78	CO081-014003-	522446	566169	Church	Carrigeigh	E2	3487
79	CO081-014002-	522459	566176	Graveyard	Carrigeigh	E2	3497
80	CO081-014006-	522425	566189	Rock scribing - folk art	Carrigeigh	E2	3501

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
81	CO093-036----	519768	558896	Redundant record	Moneyreague	E1	3552
82	CO094-004----	525537	562440	Souterrain	Johnstown	E3	3576
83	CO094-039002-	524386	559898	Bullaun stone	Kilnadur	E3	3603
84	CO094-039003-	524407	559904	Bullaun stone	Kilnadur	E3	3613
85	CO094-039001-	524393	559888	Burial ground	Kilnadur	E3	3615
86	CO081-020----	518015	563987	Ringfort - rath	Coornahahilly	E1	3620
87	CO094-039004-	524439	559864	Ringfort - rath	Kilnadur	E3	3664
88	CO094-040----	524046	559458	Fulacht fia	Kilnadur	E3	3740
89	CO081-015002-	522892	566297	Church	Glebe	E2	3749
90	CO081-015001-	522891	566298	Graveyard	Glebe	E2	3749
91	CO082-063----	525591	563661	Ringfort - cashel	Haremount	E3	3790
92	CO081-012----	519333	565950	Crannog	Turnaspidogy	E2	3836
93	CO094-041----	524123	559390	Standing stone	Kilnadur	E3	3840
94	CO093-110----	517316	561667	Enclosure	Shehy More	E1	3863
95	CO093-011002-	517768	560185	Mass-rock	Coolmountain	E1	3918
96	CO093-069----	521697	558261	Ringfort - cashel	Cooranig	E1	3947
97	CO093-011001-	517756	560135	Burial ground	Coolmountain	E1	3954
98	CO081-016----	522938	566541	Country house	Glebe	E2	3993
99	CO094-005----	526009	562093	Megalithic tomb - wedge tomb	Mamucky	E3	4074
100	CO093-012----	518221	559306	Standing stone	Coolmountain	E1	4093
101	CO093-035----	519956	558248	Redundant record	Moneyreague	E1	4098
102	CO093-034----	519185	558566	Ringfort - rath	Moneyreague	E1	4102
103	CO082-041----	525709	564290	Ringfort - rath	Gorteenadrolan e	E3	4124
105	CO093-033001-	519175	558494	Cremation pit	Moneyreague	E1	4171
106	CO093-033002-	519175	558494	Excavation - miscellaneous	Moneyreague	E1	4171
104	CO093-033----	519175	558494	Standing stone	Moneyreague	E1	4171

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
107	CO082-038----	525202	565207	Burial ground	Teeranassig	E3	4180
108	CO082-039----	525350	565042	Ringfort - rath	Teeranassig	E3	4196
109	CO093-070----	522490	558133	Redundant record	Cooranig	E1	4254
111	CO082-097----	525736	564544	Ringfort - rath	Gorteenadrolan e	E3	4261
110	CO082-040----	525736	564544	Souterrain	Gorteenadrolan e	E3	4261
112	CO094-046----	525790	560609	Stone circle - multiple-stone	Gortroe	E3	4298
113	CO081-011----	519249	566502	Ringfort - cashel	Turnaspidogy	E2	4344
114	CO093-067----	520525	557838	Standing stone	An Tóchar	E1	4376
115	CO093-068----	521411	557798	Ringfort - rath	Cooranig	E1	4379
116	CO093-010----	517017	560663	Enclosure	Coolmountain,S hehy More	E1	4395
117	CO094-042----	524617	559023	Burial ground	Aultaghreagh	E3	4426
118	CO081-017----	523862	566656	Castle - tower house	Carrignacurra	E2	4503
119	CO082-064----	526402	563390	Ringfort - rath	Haremount	E3	4515
120	CO082-001----	523908	566651	Country house	Carrignacurra	E2	4523
121	CO094-047----	526077	560684	Ringfort - rath	Gortroe	E3	4524
122	CO093-066001-	520019	557753	Standing stone	An Tóchar	E1	4558
123	CO093-066002-	520062	557735	Ringfort - rath	An Tóchar	E1	4565
124	CO093-074----	521651	557485	Souterrain	Keelaraheen	E1	4712
125	CO081-010----	518843	566709	Stone row	Turnaspidogy	E2	4739
126	CO094-007----	526689	562083	Ringfort - rath	Mamucky,Shana cashelkneeves	E3	4751
127	CO094-128----	526689	562083	Souterrain	Mamucky	E3	4751
128	CO094-006----	526723	562374	Enclosure	Mamucky	E3	4764
129	CO093-104----	516728	560347	Burnt spread	Coolmountain	E1	4779
130	CO093-032----	517737	558809	Standing stone	Shanacrane East	E1	4787

Map ID	RMP NO.	ITM E	ITM N	DESCRIPTION	Townland	WTG NO	DISTANCE (M)
131	CO093-065----	519660	557599	Ritual site - holy well	An Tóchar	E1	4806
132	CO081-034----	517207	564984	Redundant record	Gortnarea	E2	4840
133	CO093-071----	522164	557415	Redundant record	Keelaraheen	E1	4862
134	CO094-045----	525690	559386	Standing stone - pair	Shanlaragh	E3	4898
135	CO094-113----	526301	560174	Kiln - lime	Gortroe	E3	4953

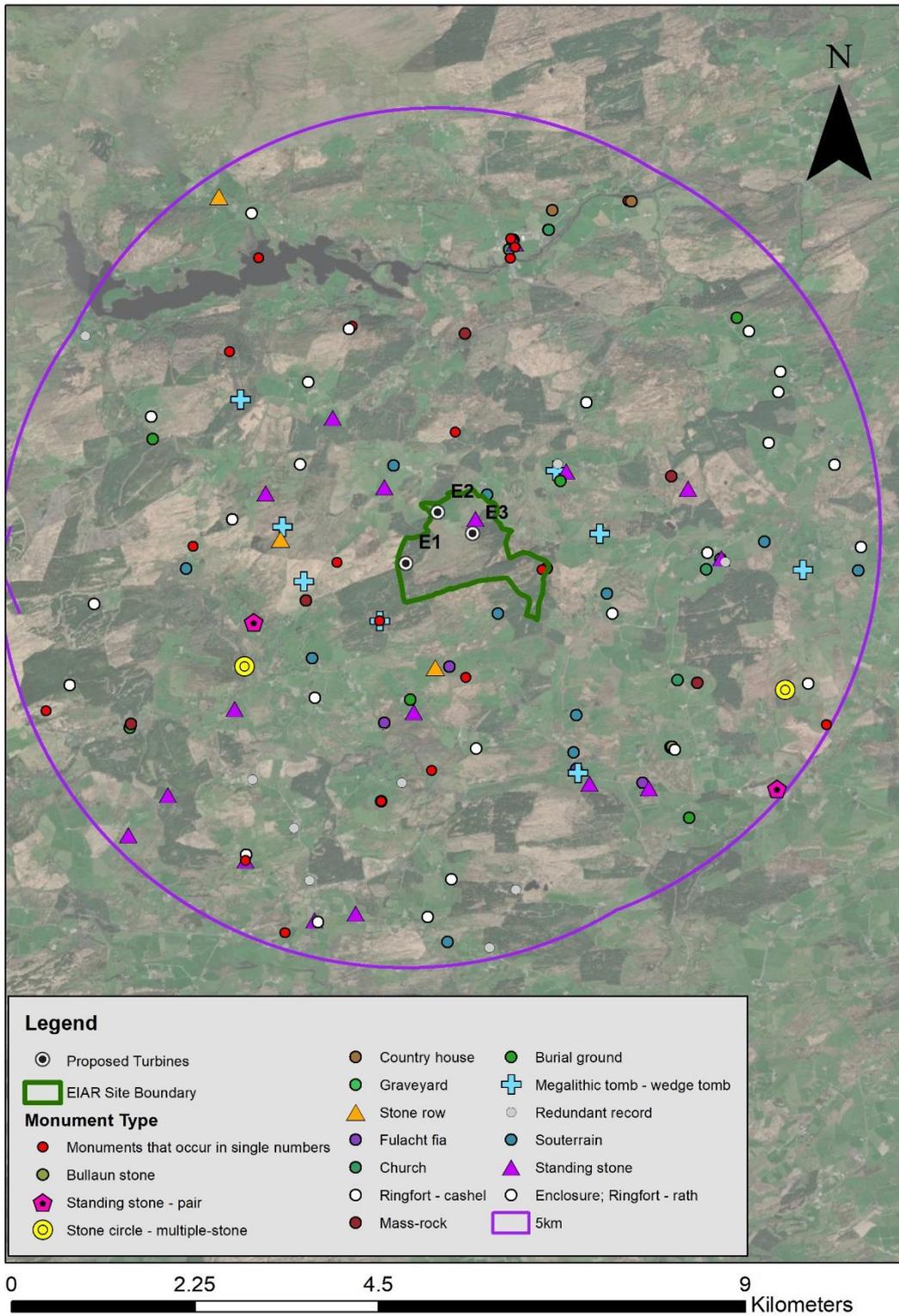


Figure 12-7 SMRs within 5km of the nearest proposed turbine

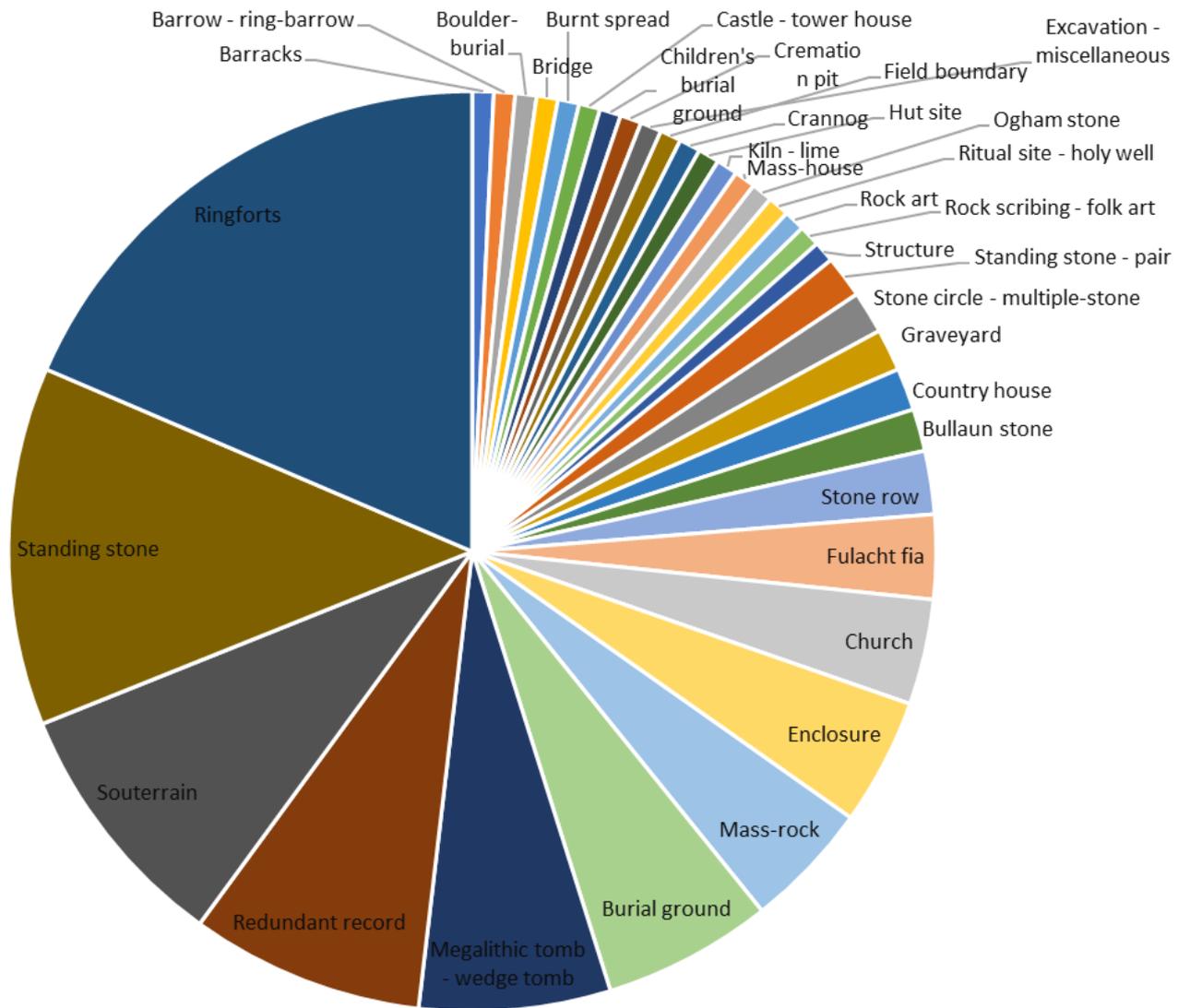


Figure 12-8: Monument types within 5km of the nearest proposed turbine.

12.3.2.5.1 The Prehistoric Period

The prehistoric period is represented by 40 archaeological monuments within the 5km study area containing the following monument types:

- > Barrow - ring-barrow
- > Boulder-burial
- > Burnt spread
- > Fulacht fia
- > Megalithic tomb - wedge tomb
- > Standing stone
- > Standing stone - pair
- > Stone circle - multiple-stone
- > Stone row

Fulachta Fia

Fulachta fia account for a very small number (4) within the 5km study area. Again, this monument type may span from the Bronze Age (c. 2400-500 BC) to the early medieval period (5th - 12th century AD). They consist of a circular or irregularly shaped mound of material consisting of burnt stones, ash and

charcoal with no surface evidence of a trough or depression. Levelled examples can appear as a spread containing burnt stones. All four examples are located to the south of the Proposed Development site mainly distributed within forestry plantations.

Wedge Tombs

Nine wedge tombs are located within 5km of the nearest proposed turbines. They are distributed to the northwest, south through to the northeast of the EIAR Site Boundary. They are the most widespread of the megalithic tomb types found in Ireland. Their name is derived from a wedge-shaped chamber which is usually higher and wider at one end. Wedge tombs were used as places of burial and can contain both burnt and unburnt human remains as well as grave goods such as pottery. Radiocarbon dates from a number of excavated wedge tombs suggests a late Neolithic-Early Bronze Age (2500-1800 BC) date for these monuments.

The nearest wedge tomb is located within the Carrigierck wind farm site boundary 600m to the west of T5, 88m to the west of the constructed road and 346m to the south of T4. It is located 779m to the southwest of E1 proposed turbine. It is located on a small level area on the steeply sloping S side Carrigierck hill. Short wedge-shaped gallery (L 2.4m; Wth 1.2m at W end, 0.8m at E), aligned E-W; ruinous. N and S sides each formed of three stones; single outer-wall stone survives to S. Structure incorporated in mound of irregular outline. (de Valera and O Nuallain 1982, 28, no. 39). Rock art has also been recorded on the capstone and consists of a series of sixteen well-preserved cupmarks on the capstone of the megalithic tomb (CO093-019---). It is a smooth and unfractured sandstone (dims. 1.63m N-S; 1.47m E-W; T 0.18m) being rectangular in plan. The decorated surface (dims. 1.0m N-S; 0.9m E-W) is subrectangular in plan and occupies the central portion of the capstone. The cupmarks have a range of sizes from the smallest (diam. 4.5cm; D 6mm) to the largest cupmark (diam. 9cm; D 30mm). The capstone has a NE-facing aspect, however, it is tending slightly to SE due to a side stone of the megalithic tomb, which has tilted inwards under the pressure of the capstone.

Photomontage 20 taken from this monument (Photomontage Booklet - Volume 2) shows that none of the proposed turbines can be seen from the tomb due to forestry.

Impacts are addressed in Section 12.4.5.4.

Standing Stones

Seventeen single standing stones are located within the 5km study area with examples in all directions from the EIAR Site Boundary. The 17 single standing stones include the site of the standing stone to the north of proposed turbine E3. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) suggests that the three proposed turbines may be visible from the standing stone to the north of the EIAR Site Boundary and that two of the proposed turbines may be visible from the standing stones to the south of the EIAR Site Boundary. This model does not assume trees or natural screening that may in reality minimise or remove any potential impacts on setting altogether. Standing stones 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). Impacts are addressed in Section 12.4.5.4.

Stone Rows

Three stone rows are located within the 5km study area, one of which (Farranahineeny) is discussed in Section 12.3.2.1.1 above owing to its National Monument status. The distances and location of the stone rows are shown in Table 12-4 and **Error! Reference source not found.** above. Stone rows consist of a row of three or more stones erected in a line. Two main types have been recognised - a Cork and Kerry group, in which the row comprises up to six stones, typically about 2m in height, with their long axes usually set in line, and a mid-Ulster group, where the row comprises numerous stones, usually not exceeding 1m in height, often found in association with cairns and stone circles. They are considered to have been aligned on various solar and lunar events and date to the Bronze Age (c. 2400-500 BC). One example to the east is located on the shoulder of Mullaghmeagrogafin Mountain, overlooking Lee River

valley to N. Row of three stones embedded in peat, aligned ENE-WSW, and 3.25m in overall length. NE stone is 0.6m L, 0.25m T and 0.65m H. Next stone, 0.4m to SW, is 0.45m L, 0.3m T and 0.45m H. SW and tallest stone, 0.85m from last, is 1m L, 0.6m T and 1.7m H. (Ó Nualláin 1988, 235, no. 34).

The second example to the north is in rough pasture, on shoulder of S-facing slope overlooking Lough Allua. Row of three stones, one of which is prostrate, aligned NE-SW, c. 4.7m in overall estimated length. NE stone is 0.8m L, 0.5m T and 0.9m H. Nextstone, 0.5m to SW, is 0.7m L, 0.5m T and 1.6m H. SW stone lies 1.7m further to SW; it measures 2.4m by 1.45m and is over 0.4m T. Erect stones span a distance of 2.15m. (Ó Nualláin 1988, 234, no. 26). The aforementioned stones are in private land. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) shows that three turbines may potentially be seen from these locations. Impacts are addressed in Section 12.4.5.4.

Stone Circles

Multiple stone circles are a distinctive form of stone circle found only in counties Cork and Kerry. It comprises a ring of free-standing stones, uneven in number (between 7 and 19) and symmetrically arranged so that one stone, the axial stone, is set directly opposite two stones, usually the tallest, marking the entrance to the circle. Characteristically, the stones reduce in height to the axial stone, which is set consistently in the south-western part of the circle. The diameters of these circles rarely exceed 10m. These circles form part of the funerary/ritual tradition of the Bronze Age (c. 2400-500 BC). Five stone circles are also a distinctive form of stone circle found only in counties Cork and Kerry. It comprises a ring of five free-standing stones, symmetrically arranged so that one stone, the axial stone, is set directly opposite two stones, usually the tallest, marking the entrance to the circle. Characteristically, the stones reduce in height to the axial stone, which is set consistently in the south-western part of the circle. These circles are thought to have a ritual function and are dated to the Bronze Age (c. 2400-500 BC).

One example is located to the west of the EIAR Site Boundary. Distances and location are detailed in Table 12-4 and **Error! Reference source not found.** above. It is located in pasture on NE-facing slope in valley of headwaters of Caha river. Appears to have consisted of possibly eleven stones; diameter c. 9m. Two stones survive, 4m apart. N stone is 0.8m by 0.3m and 1.1m H; second stone is 1m x 0.4m and 1m H. (Ó Nualláin 1984, 17, no. 17). It is located in an area where theoretically only 1 proposed turbine may be seen.

Impacts are addressed in Section 12.4.5.4.

Standing Stone Pairs

Two standing stone pairs are located within the 5km study area and distances and location are detailed in Table 12-4 and **Error! Reference source not found.** above. The eastern example (CO093-014) is located on the N side of valley of Caha river of lower SW slopes of Mullaghmeagrogafin mountain. Stones, aligned NE-SW, stand 1.6m apart; overall length 3.1m. NE stone is 0.85m L, 0.9m T and 1.6m H. SW stone is 0.7m L, 0.6m T and 1.15m H. (Ó Nualláin 1988, 245, no. 114). The monument is located in an area which the Zone of Theoretical Visibility map (LVIA Chapter 13, Figure 13-1) shows no visibility in the direction of the proposed turbines.

The south eastern example CO094-045 is located on top of a low ridge in rolling pasture. Stones, aligned NNE-SSW, stand 0.9m apart; overall length 2.7m. NE stone is 1m L, 0.4m T and 2.15m H. SW stone is 0.95m L, 0.5m T and 2.2m H. (Ó Nualláin 1988, 246, no. 116)

See Excavations 1990, 19. This is located in an area where potentially three turbines may be visible. Impacts are addressed in Section 12.4.5.4.

12.3.2.5.2 *The Early Medieval Period*

The majority of the remaining monuments are represented by ringforts (25), enclosures (6) and souterrains (12) within the 5km study area.

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. Souterrains are frequently associated with ringforts, cashels and enclosures. Souterrains derive their name from the French *sous terrain* meaning ‘underground’ and comprise an underground structure consisting of one or more chambers connected by narrow passages or creepways, usually constructed of drystone-walling with a lintelled roof over the passages and a corbelled roof over the chambers. Most souterrains appear to have been built in the early medieval period by ringfort inhabitants (c. 500 - 1000 AD) as a defensive feature and/or for storage.

The Zone of Theoretical Visibility (ZTV) map used in the LVIA Chapter 13 (Figure 13-1) shows that any ringforts / enclosures or souterrains that are located to the north of the EIAR Site Boundary would have potentially visibility of the three proposed turbines. The monuments to the south vary between one and two turbines potentially being visible from same. Any potential visibility may, however, be negated by existing screening. Photomontage 18 (Photomontage Booklet - Volume 2) was undertaken from the nearest enclosure/ringfort (MAP ID 13/14 in Table 12-4 and **Error! Reference source not found.** above) to the south in order to ascertain if there would be any potential effects on setting as a result of the three proposed turbines and also any potential cumulative effects (addressed separately in Section 12.5.2.2 below). The photomontage shows that none of the proposed turbines will be seen from this location.

12.3.2.5.3 Sites with religious or ritual association

A number of monuments within 5km of the Proposed Development site have religious associations and include Mass-rocks (6), Burial grounds (8), Graveyards (2), and Holy wells (1) A Mass House is also included. Holy wells may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards. Massrocks are rocks or earthfast boulders used as an altar or a stone-built altar used when Mass was being celebrated during Penal times (1690s to 1750s AD), though there are some examples which appear to have been used during the Cromwellian Period (1650s AD). The nearest example as well as the associated Mass House has been discussed in Section 12.3.2.2 above. The nearest burial ground (CO081-032, Map ID 15) (Table 12-4 and **Error! Reference source not found.** above) to the north-east is shown as a hachured subcircular area on 1842 OS 6-inch map; indicated as subcircular field on 1904 OS 6-inch map. Oval area (36m N-S; 32m E-W) defined by stone bank (H 1.4m) SE->NW; remainder of bank levelled during removal of surrounding fields c. 1985. Area (22m E-W; 14m N-S) on S side of interior remains undisturbed, with many unscribed grave markers. The site is largely levelled.

The Zone of Theoretical Visibility (ZTV) map used in the LVIA Chapter 13 (Figure 13-1) shows that potentially any monument to the north and north-east of the EIAR Site Boundary may have visibility of the proposed turbines.

Gouganebarra is outside the 5km study area (at 12km to E1) however owing to its high visitor presence and ritual association with pilgrimage a viewshed analysis was undertaken from the oratory. This was done to ascertain what views of the proposed turbines may be possible by an observer standing at the oratory and looking in the direction of the proposed wind farm. The result shows that no turbines may be seen from the monument. Furthermore, the ZTV shows no visibility in the direction of the proposed turbines.

A number of monuments are located in Gougane Barra CO080-012001 (Hermitage), CO080-012002 (Ritual site - holy well) and CO080-012003 (Graveyard) at Doire Na Coise townland c. 2.6km north of the Proposed Development. The Hermitage occupies an oval island (c. 60m E-W; c. 70m N-S), joined to S shore of Gouganebarra Lake by causeway (L c. 20m) which incorporates holy well (CO080-012002-). At NW corner of island is square enclosure (21m N-S; 20.6m E-W), with central open court (L 13.4m); immediately E of enclosure are fragmentary ruins covering area c. 24m E-W and c. 16.5m N-S; in SE corner of island is neo-Romanesque chapel, erected c. 1890. The former two features are remains of

hermitage established here in late 17th century by Carmelite priest Denis O'Mahony (Smith 1750, vol. 1, 192-3; Croker 1824, 275-84; Windele 1844, 288-94; MacCarthy 1935, 85-9).

Square enclosure stands on stone-faced platform (H c. 1.5m; extends c. 3m out from enclosure on all sides). Enclosing wall (Wth c. 4.2m; H c. 2.6m) has level sod-covered top with traces of parapet wall (Wth c. 0.85m; H c. 0.9m) along outside edge. Central court entered through roofless passage (Wth c. 2.3m) in centre of S wall. At centre of court low stepped pyramid, supporting tall wooden cross (see photograph JCHAS 1892, p. 195). Each sidewall of court contains two arched recesses (Wth c. 2m; D c. 2.8m; H c. 1.5m); each recess has shallow shelf on back wall. Enclosure repaired c.1890, at same time plaques marking stations of the cross erected on inside walls. Immediately E of enclosure are remains of long narrow structure (c. 14m N-S; c. 5m E-W) missing most of its N and W walls; door open in centre of S wall (identified as remains of chapel on plan in JCHAS 1892, 194, after Windele *ibid.*, 290-1). E wall (H c. 1m) reused as part of second structure to E (c. 10.6m N-S, c. 4.7m E-W; possible gable outline on S wall. Further structures to E reduced to low sod-covered mounds. On mainland, opposite entrance to causeway, arched chamber which contains remains of Fr Denis O'Mahony; on slightly higher ground behind tomb, small graveyard containing 19th- and 20th-century burials (CO0080-01202-). Site associated with St Finbar (see MacCarthy *ibid.*) but no remains earlier than 17th century identified at site. Impacts are addressed in Section 12.4.5.4.

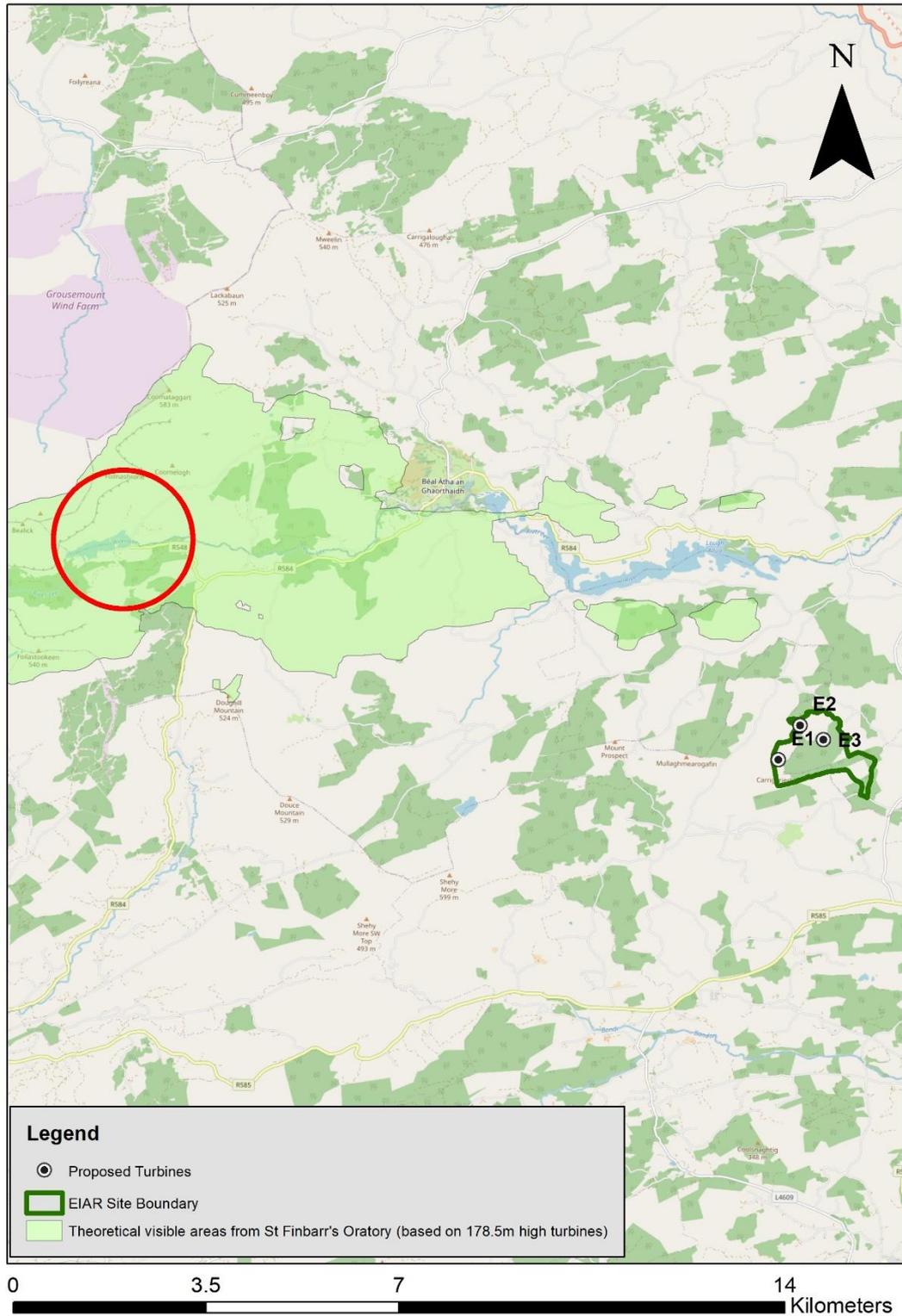


Figure 12-9 View shed analysis from St Finbarr's Oratory showing the Proposed Development does not fall within the shaded (visible) areas and hence no visibility from the monument.

12.3.2.6 Archaeological Monitoring of Existing Carrigarierk Wind Farm

The existing Carrigarierk Wind Farm was monitored by Tobar Archaeological Services under licence in 2019 and 2020. No sub-surface archaeological finds, features or deposits were uncovered as detailed in the Archaeological Monitoring Report.

12.3.2.7 Archaeological Investigations/Excavations undertaken within the Proposed Development site

The townlands of Derryleigh, Gortnahoughtee, Gurteen, Carrigdangan, Gortatanavally and Clogher were searched for any positive archaeological excavations. No excavations which produced positive results were found to be located within the EIAR Site Boundary. Furthermore, all groundworks associated with the construction phase of the existing Carrigierck Wind Farm development were monitored under licence 19E0508 by Tobar Archaeological Services in 2019/20. No archaeological finds, features or deposits were uncovered.

12.3.2.8 Townlands and administrative boundaries

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

Townlands are the smallest land units which were determined and established in the Irish administrative system in the first half of the nineteenth century. Many of the townlands were in existence prior to that. Townland names are a valuable source of information, not only on the topography, land ownership and land use within the landscape, but also on its history, archaeological monuments and folklore. Logainm.ie was utilised to ascertain the origin of the townland names. A ringfort and souterrain (Map ID 37 and 33, SMR CO093-023) in Carrigdangan townland may be associated with the origin of the townland name 'Daingean fortress'.

Table 12-5: Townlands within the Proposed Development.

Townland Name	Meaning
Derryleigh, ELECTORAL DISTRICT - An Bhéillic / Bealock BARONY - Múscraí Thiar/Muskerry West CIVIL PARISH - Inse Geimhleach/Inchigeelagh	doire (oak-)wood, grove, thicket liath(also: léith) grey, grey place, grey horse
Gortnahoughtee BARONY - Múscraí Thiar/Muskerry West CIVIL PARISH - Inse Geimhleach/Inchigeelagh	Ghort na hOchtaí meaning field

<p>Gurteen</p> <p>ELECTORAL DISTRICT - Cúil an Mhóinteáin/Coolmountain</p> <p>BARONY - Cairbrigh Thoir (an Roimn Thiar)/Carbery East (W.D.)</p> <p>CIVIL PARISH - Cill Mhichíl/Kilmichael</p>	<p>goirtín little field</p>
<p>Carrigdangan</p> <p>BARONY - Múscraí Thiar/Muskerry West</p> <p>CIVIL PARISH - Cill Mhichíl/Kilmichael</p>	<p>carraig rock</p> <p>daingean fortress</p>
<p>Gortatanavally</p> <p>BARONY - Múscraí Thiar/Muskerry West</p> <p>CIVIL PARISH - Inse Geimhleach/Inchigeelagh</p>	<p>Ghort an tSeanbhaile - baile townland, town, homestead</p> <p>gort(also: gart) field</p>
<p>Clogher</p> <p>ELECTORAL DISTRICT - Cúil an Mhóinteáin/Coolmountain</p> <p>BARONY - Cairbrigh Thoir (an Roimn Thiar)/Carbery East (W.D.)</p> <p>CIVIL PARISH - Inse Geimhleach/Inchigeelagh</p>	<p>an Chlochair clochar (also: cloichear) stony place</p>

12.3.2.9 Cartographic Evidence

12.3.2.9.1 1st Edition 6 inch maps and 6 inch Cassini OS maps

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

The First Edition

The early Ordnance Survey maps are an unrivalled source for the period immediately before the Great Irish Famine (1847-50) when the population was at the highest level ever recorded.

The northern portion of Derryleigh townland within which Turbines E2 and E3 are proposed consisted mainly of enclosed fields, farm buildings and farm access tracks, the remains of which are discussed in Section 12.3.2.3 above. This portion of land also includes the Recorded Monument (Standing Stone CO093-020) which is marked as a 'Gallaun'.

The southern part of the townland of Derryleigh consists of open un-enclosed mountaineous rocky territory.

The south-western section of Gortatanvally townland within the EIAR Site Boundary also consists of featureless open landscape.

The portion of Carrigdangan townland where the existing Carrigarierk substation is located is also relatively open with some small, enclosed fields in the southern section where the permitted road enters the Carrigarierk wind farm site.

A small portion of Gurteen townland lies within the EIAR boundary which consisted of open mountaineous terrain.

The proposed road to Turbine E1 (before the fork to Turbine E3) traverses a townland boundary between Derryleigh and Clogher at ITM E521248, N562061. This area is clear-felled with no sign of the boundary surviving. The hardstand for E1 crosses a townland boundary between Gortnahoughtee and Clogher. This area was also examined and access was gained along a fire break which was the only access to this part of the site given the presence of mature forestry. No remains of a boundary were noted although given the overgrown nature of the site in this location, it may be located in dense overgrowth. A walkover survey of clear-felled areas prior to construction would serve to record and photograph any surviving boundaries in this location.

Further north Gortnahoughtee townland was also open mountaineous terrain with no features of interest. Turbine E1 is proposed to be located in this townland.

Cassini 6 inch mapping

The area of the Proposed Development is largely unchanged with the same field enclosures apparent. A number of small buildings had been constructed at this stage when compared to the 1st edition 6 inch map.

12.3.2.10 Topographical Museum Files

Some of the locational information for stray finds can be gleaned from Heritage Maps (heritagemaps.ie) where the National Museum have provided such data. No finds are located either within or adjacent to the Proposed Development area.

12.3.3 Architectural and Cultural Heritage

12.3.3.1 Protected Structures within the EIAR Site Boundary

No built heritage structures on the RPS which are subject to statutory protection or NIAH structures are located within the EIAR Site Boundary.

12.3.3.2 Protected Structures and NIAH within 5km of the nearest proposed turbines

The Record of Protected Structures and NIAH structures within 5km of the nearest proposed turbine are included here (See Section 12.2.5 above for methodology) in order to assess visual impacts in the wider landscape setting of the Proposed Development site. These are detailed in Table 12-6 and also represented on **Error! Reference source not found.** The distances to the relevant turbines are presented.

Table 12-6: RPS and NIAH structures within 5km of the nearest proposed turbine.

MAP ID	NIAH or RPS ID	NAME	TD.	ITM E	ITM N	WTG NO	DISTANCE (M)
00543	00543	Carrignacurra Castle	Carrignacurra	523862	566656	E2	4500
1	20909301	Coolmountain School	Coolmountain	518512	560352	E1	3200
2	20908111	Inchigeelagh Bridge	Cappanclare, Carrigeigh	522430	565946	E2	3268
3	20909302	House	Moneyreague	519278	559350	E1	3382
4	20908108	Shop	Inchigeelagh	522342	566129	E2	3423
5	20908109	House	Carrigeagh	522376	566180	E2	3480
6	20908113	St. Finbarr's Roman Catholic Church	Inchigeelagh	522454	566172	E2	3492
7	20908110	Health Centre	Carrigeigh	522545	566272	E2	3614
8	20908114	Inchigeelagh Church of Ireland Church	Carrigeagh	522900	566300	E2	3755
9	20908115	Sign post	Carrigeagh	522979	566359	E2	3840

12.3.3.2.1 Record of Protected Structures

Only one structure listed in the statutory list of protected structures is located within 5km of the nearest proposed turbine and consists of Carrignacurra Castle RPS 00543 located 4.5km to the northeast of E2 proposed turbine. This structure is also a Recorded Monument (CO081-017) and is listed above in Table 12-4 and **Error! Reference source not found.** (Map ID 118).

It is described in the published 'Archaeological Inventory of County Cork. Volume 3 as follows '*On top of a rock outcrop, close to S bank of river Lee. Rectangular 4-storey tower (11.5m E-W; 7.6m N-S), exterior partially ivy-clad, lower courses of quoins robbed from each corner. Triangular spur projects from SE corner, similar to pair at Mashanaglass (CO071-096002-). Entered by door in centre of E wall at ground-floor level, surround entirely gone. Lobby, covered by murder hole, gives access straight through to main ground-floor chamber, S into small guard chamber (2.2m N-S; 1.6m E-W), and N to base of spiral stairs.*

Main ground-floor chamber (7m E-W; 5.4m N-S), lit by windows in centre of W wall and near E end of S wall; W window has splayed and lintelled embrasure and single flat-headed light; S window blocked, appears similar. Plastered ground-floor walls and inserted joist holes over ground floor result from recent use, 'as a cowhouse and a granary' according to Lee (1914, 60). Spiral stairs rise in NE corner of tower to 3rd-floor level, giving access to main 1st-, 2nd- and 3rd-floor chambers, also to mural chamber in E wall at 1st-floor level and mural passage in N wall at 2nd-floor level.

First-floor mural chamber in E wall (3.6m N-S; 1.7m E-W) covered by segmental wicker-centred vault; murder-hole opening in floor; broken window opening in E wall. At SE corner narrow passage (L c. 1m; With 0.6m) leads into spur. Wedge-shaped lintelled chamber (L c. 2m; With 1.3m) in interior of spur; gun loops at corners cover external N and E walls of tower, third loop at point of spur; loops are narrow vertical slits with median and base widenings. At this level, in S wall of main chamber, is lintelled opening which appears to be gun loop of type found in similar position at Mashanaglass (CO071-096002-). Main 1st-floor chamber lit by central windows in N, S and W walls; each has single flat-headed light and splayed and lintelled embrasures. Lintelled mural passage in N wall (6.4m E-W; 0.7m N-S) has garderobe opening set into thickness of N wall, mid-way along; slit window on W side of opening; at W end passage gives entry into corner bartizan. Bartizan square-set, supported by three tapering lintels; covered by sloping stone roof; it contains five gun loops of similar type to those in spur.

Main 2nd-floor chamber covered by pointed wicker-centred vault (axis E-W); large much-broken fireplace in N wall; window in W wall with splayed and lintelled embrasure, single round-headed blocked light. Main 3rd-floor chamber (8.9m E-W; 4.7m N-S) lit by window near E end of S wall and by opposite windows near W ends of N and S walls; former has splayed and lintelled embrasure and single flat-headed light; latter pair are both very ruined, S window has stone seats along sides of embrasure. Much-damaged fireplace in middle of N wall; directly overhead is plain rectangular stack. On E side of fireplace is lintelled recess, with opening for slop-stone on outer face; door on E side of recess gives access to mural stairs which rise to NE corner of tower, giving entry in turn to attic floor and wall walk. Point of W gable fallen; according to Lee (ibid.), it 'fell in a recent gale, doing a considerable amount of damage to the interior'. East gable, with small attic window, topped by small square stack. Battlements atop walls completely removed. According to Lee (ibid.) 'chief stronghold of the O'Learys'; Ó Murchadha (1993, 220) describes it as 'the tánaiste's tower-house'; according to documentary sources not built 'before the 1570s' (ibid., 239); attacked and taken by O Sullivan Bear in 1602 (ibid. 223)'.

The Zone of Theoretical Visibility (ZTV) map used in the LVIA Chapter 13 (Figure 13-1) shows that the structure is located in an area where three turbines may potentially be visible. The ZTV, being based on a bare landscape model, is a worst case scenario and in reality the natural screening that occurs around the castle is such that any potential views of the turbines will be minimised if not removed altogether.

12.3.3.2.2 NIAH

Map ID 1, 20909301 Coolmountain school

Detached gable-fronted three-bay single-storey school, built c.1950, now vacant. Pitched asphalt roof with cast-iron rainwater goods. Corrugated-iron walls. Square-headed openings with metal casement windows and timber sills. Square-headed door opening with timber battened door, overlight and concrete steps. Rendered walls to front and sides of plot with wrought-iron gate. This structure was strategically positioned for use by the local rural population and its educational and social importance is highlighted both by its commanding views of the surrounding landscape and by the large plot of land on which it is sited. The use of corrugated-iron as wall cladding adds texture and interest to a building of modest dimensions and materials.

Map ID 2, 20908111 Inchigeelagh Bridge

Seven-arch road bridge over the River Lee, built c.1800, with recent repairs. Rubble and dressed limestone construction with cut limestone voussoirs to segmental arches and V-cutwaters. Upright and concrete block coping stones. A substantial bridge of seven arches, which demonstrates the high quality of late eighteenth century design and craftsmanship.

Map ID 3, 20909302 Farmhouse at Moneyreague

Detached three-bay two-storey house, built 1932, with recent lean-to extension to rear (west). Pitched slate roof with rendered chimneystacks and cast-iron rainwater goods. Painted rendered walls. Square-headed openings with two-over-two timber sliding sash windows and concrete sills. Square-headed opening with timber battened door, overlight and concrete step. Outbuildings to side (north) and rear (west). Enclosed by rubble stone and rendered walls. This house is typical in both design and detail of the rural houses

built in the early twentieth century, but it is unusual in that it retains much of its historic character. It is strategically located on the hillside with expansive views of the valley to the east. The irregularly placing of the windows which flank the door is a charming vernacular feature.

Map ID 4, 20908108 Shop at Inchigeelagh

Attached gable-fronted two-bay single-storey commercial outlet with attic accommodation, built c.1920. Rests on rubble stone piers, spanning a stream. Barrel corrugated-iron roof and rendered chimneystack (north). Corrugated-iron walls. Square-headed openings with shaped metal moulding, fixed windows, one-over-one timber sliding sash windows and three-over-three timber fixed windows with shaped metal sills. Shopfront comprising square-headed openings with fixed windows and square-headed opening with timber battened half door. This structure is unique within Inchigeelagh as it is the only building built completely of iron and it spans a stream which runs through the village. Its central location within the village allowing for convenient commercial trade makes it an interesting focal point. The use of corrugated-iron as wall cladding and roofing adds texture and interest to a building of practical design.

Map ID 5, 20908109 House at Carrigleagh

Terraced five-bay two-storey house, built c.1880. Pitched artificial slate roof with rendered chimneystacks and cast-iron and uPVC rainwater goods. Painted lined-and-ruled rendered walls. Square-headed openings with one-over-one timber sliding sash windows, sill guards to ground floor, pronounced decorative keystones, and concrete sills. Square-headed door opening with timber and glass panelled door and overhead. This substantial and well composed building retains much of its original character and makes an important contribution to the appearance of the village and its streetscape.

Map ID 6, 20908113 Roman Catholic Church at inchigeelagh

Freestanding single-cell gable-fronted three-bay Roman Catholic church, built 1842, with five-bay nave and recent lean-to extension to rear (south). Advanced central-bay with bellcote added to entrance (north). Pitched slate roof with pediment, belfry and cross finials to gable. Cast-iron rainwater goods. Rubble red sandstone, limestone and slate walls with stringcourse, eaves course, plinth and quoins. Pointed arch openings with fixed stained glass windows and storm glazing with stone sills. Pointed arch openings with timber panelled single and double-leaf doors. Interior retaining carved timber gallery to north and marble altar furniture to south. Set within graveyard and enclosed by rubble limestone walls. A fine church, built by the Reverend Jeremiah Holland, which is of a scale and form in keeping with churches built in the decades immediately following Catholic Emancipation and before the Great Famine. Though the interior was altered following Vatican II, it retains a finely carved timber gallery. It is centrally located, confirming its importance and high status for the people of the locality.

Map ID 7, 20908110 Surgery at Inchigeelagh

Detached four-bay single-storey health centre, built c.1950. Hipped tile roof with cast-iron rainwater goods. Roughcast rendered walls with timber eaves course. Square-headed openings with single and tripartite one-over-one timber sliding sash windows having concrete sills. Square-headed openings with timber glazed doors and concrete steps. A modest and functional building which is representative of the architectural style employed by the Office of Public Works for public buildings such as schools, health centres and Garda Stations in the mid twentieth century. This building is unusual in that it is intact, retaining its original fabric and character.

Map ID 8, 20908114 Church of Ireland Church, Inchigeelagh

Freestanding Board of First Fruits style Church of Ireland church, built 1814, now in ruins. Comprising two-bay nave, with two-stage entrance tower to west, single-bay chancel to east, with vestry attached to north-east. Roof no longer in situ. Remains of corner pinnacles to tower. Rubble limestone walls with eaves course and quoins. String courses to tower. Pointed arch openings with ashlar limestone surrounds and remains of cast-iron quarry glazing, set in paired arrangement to chancel. Round-headed openings with louvred timber fittings to upper stage of tower. Round-headed door opening to tower and pointed

arch door opening to porch. Set in graveyard and enclosed by rubble limestone walls and cast-iron gates. Though now in ruins, this church retains much of forms and fabric, including cast-iron window fittings and limestone dressings. The form of nave and west entrance tower is typical of the designed employed by the Board of First Fruits in the early nineteenth century.

Map ID 9, 20908115 Sign Post at Inchigeelagh

Freestanding cast-iron road sign, erected c.1940, comprising rectangular sign having rounded edges mounted on circular-profile pole with raised text and harp motif. A notable example of early twentieth-century road furniture, this road sign has a simplicity and clarity of design typical of its time. Its functional nature is enhanced and emphasised by casting using capital letters in a clear simple font without serifs. The harp motif indicates a date of production after the foundation of the State.

12.3.3.2.3 **Visibility of the Proposed Turbines from Built Heritage Structures**

The Zone of Theoretical visibility map used in the LVIA Chapter 13 (Figure 13-1) suggests that the three proposed turbines may be seen from structures (Map ID 2, 4-9 NIAHs) in Inchigeelagh Village. Since the model does not take other buildings, trees and boundaries into consideration, this visibility will not occur. Inchigeelagh is located to the north of the River Lee which runs in an East/West direction. The river bank on the north and south is densely planted with trees and vegetation and in effect screens the Proposed Development from view. Furthermore, views to the south of the proposed turbines from the NIAH structures within the village of Inchigeelagh will be blocked by buildings.

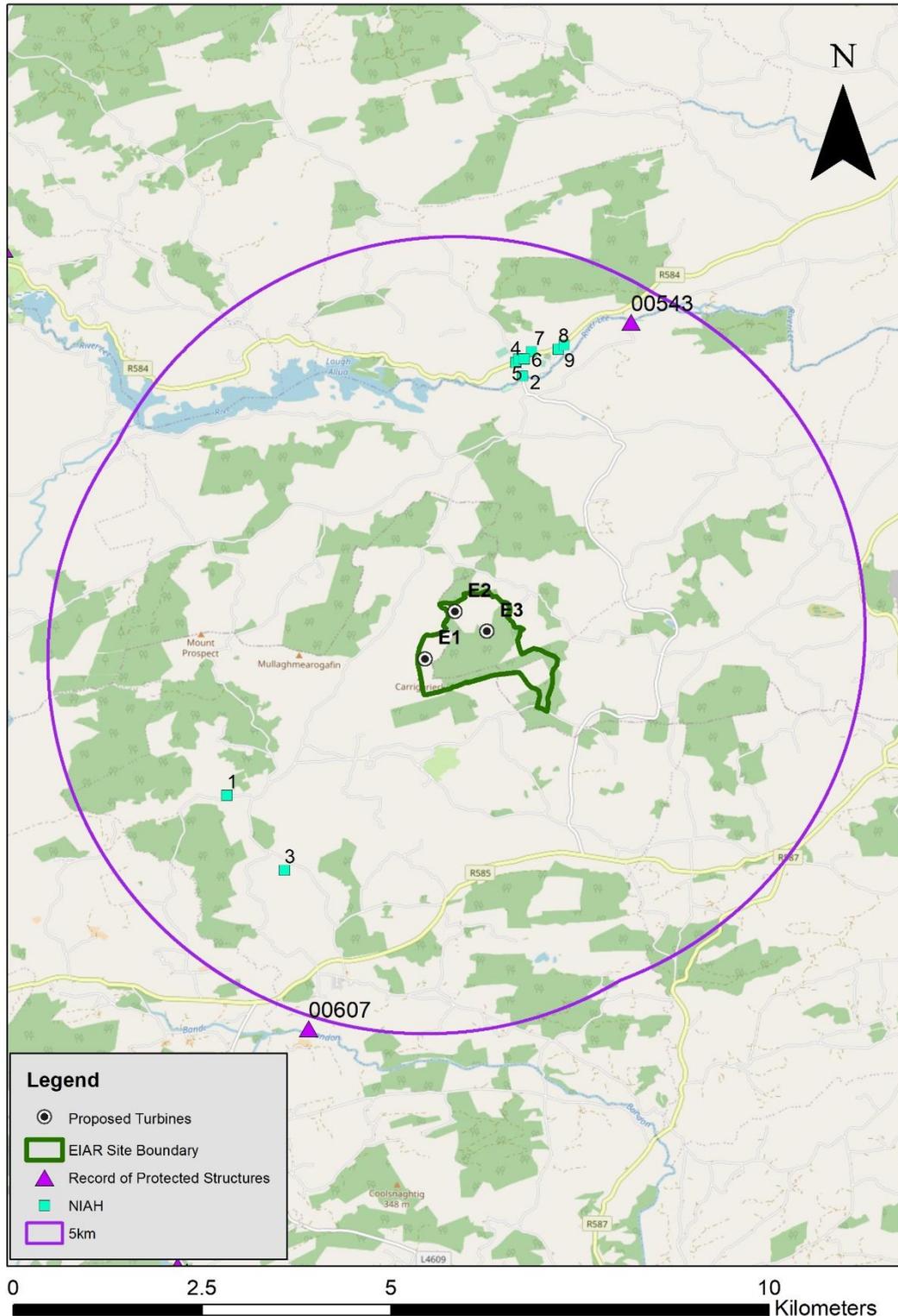


Figure 12-10 Record of Protected structures and NIAH structures within 5km of the nearest proposed turbine.

12.3.3.3 Other Cultural Heritage

A number of cultural heritage features were recorded both to the south-east of Turbine E2 and to the north of Turbine E3. The features consist of the remains of a series of farm tracks, field boundary walls and the remains of small building / huts and a derelict dwelling house. All of the structures are marked on the 6 inch Cassini OS map and are likely to be late 19th to early 20th century in date. A small building is marked on the 1st Edition OS map where the derelict dwelling house is located to the south-east of E2.

None of the features will be impacted by the Proposed Development. According to Griffiths Valuation Maps, the land and buildings were leased by Mary Burns and occupied by John O Callaghan.

The proposed road, hardstand and turbine base E2 was re-aligned in order to avoid impacting on the structures. Mitigation measures are required in order to protect the features from accidental damage during construction. The structures are detailed in

Table 12-7 below, described in Sections 12.3.1.1 and 12.3.1.2 and are annotated on **Error! Reference source not found.** below.

Table 12-7: New features of cultural heritage merit within the ELAR Site Boundary.

CH NO.	ITM E / N	DESCR.	TD.	WTG ID	DISTANCE (M)
1	E521608, N562665 (Centre Point)	19 th / 20 th Century dwelling house, walls and historic access track	Derryleigh	E2	150m to turbine, 30m to proposed road to west
2	E521946, N562683 (Centre point)	Three small structures (huts / outhouses) associated with 19 th / 20 th century farm.	Derryleigh	E3	1000

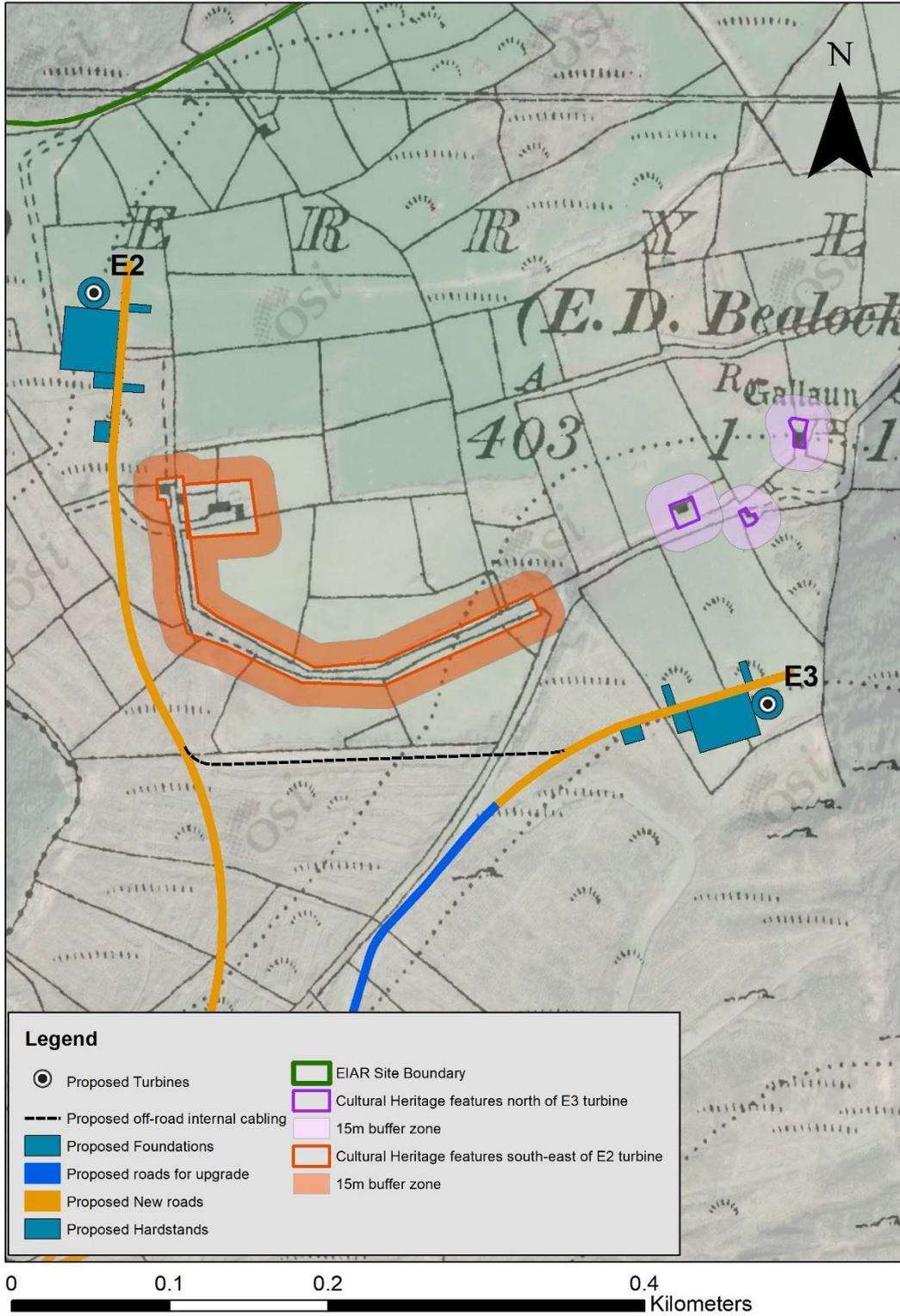


Figure 12-11 Detail of cultural heritage recorded in the vicinity of Turbines E2 and E3.

12.3.3.4 The Gaeltacht

The Proposed Development is not located within the Gaeltacht Area.

12.3.4 The Proposed Grid Connection

The Proposed Development will connect to the existing on-site substation which was constructed as part of the existing Carrigarierk Wind Farm (granted under PL. 17/431; ABP Ref. 301563-18). This substation is already connected via underground cabling to the Dunmanway ESB substation, located approximately 8.5km south of the site. The latter grid connection and substation was subject to an EIAR in 2017 and Tobar Archaeological Services undertook the Archaeology and Cultural Heritage chapter for same. Furthermore, as a condition of planning permission Tobar Archaeological Services also monitored under licence the excavation of the cable trench along the grid connection from the existing Carrigarierk substation as far as the ESB substation in Dunmanway.

No external grid connection route is required for this application.

The electricity generated by each turbine will be combined at turbine E1 via underground cabling following the route of the proposed access tracks. The combined power will connect from turbine E1 to the on-site substation continuing underground predominantly along the route of the existing wind farm access tracks, approximately 2.3km in length. All of these elements were examined and assessed during the walkover survey and are deemed to be included in Sections 12.3, 12.3.2 and 12.3.3 above since the internal cable routes predominantly follow the proposed roads within the EIAR Site Boundary.

12.3.5 The proposed Turbine Delivery Route

Only areas which may require groundworks or road widening were considered in terms of direct effects on Cultural Heritage. For the purposes of assessment, the turbine components and other abnormal loads will be transported from Ringaskiddy Port, west on the N22, before turning southwest along the R585 Regional Road via Crookstown. The turbines will travel along the R585 before turning north onto the L-4607-75 Local road. From here, the turbines will travel north before turning left onto the L-8535-0 Local Road towards the existing site entrance.

Existing junction upgrades at Inchincurka, along the L-4607-75 Local Road and at the site entrance were completed during the construction phase of the existing Carrigarierk Wind Farm. These junctions do not need any additional upgrades to facilitate the delivery of the turbines to the Proposed Development site. A berm is in place at the Inchincurka junction, as detailed in Chapter 4, and this will be temporarily removed to facilitate turbine delivery.

The route has undergone a detailed autotrack assessment which is detailed in Chapter 14, Section 14.1.8 of the EIAR. All cultural heritage assets adjacent to the route were assessed below.

12.3.5.1.1 Bellmount Mills

A Mill Complex which is both an RMP (Bellmount Mills CO083-033) and Protected Structure (RPS 00551) is located at Bellmount Lower townland just south of the T-junction at Crookstown as seen in **Error! Reference source not found.** and **Error! Reference source not found.**. The mill complex is located off road however. The entrance to the mill complex which is in private property is now modernised with modern stone used to form a high gated entrance. A number of other more modern buildings are located within the complex. The associated mill race begins approximately 1km further to the west along the R585 where it meets the River Bride. From there, where a sluice is shown on the 25inch OS map, it extends along the north side of the public road, crosses under the public road, extends along the south side of the public road and into the Mill complex. According to local information the mill race is no longer extant and may have been removed a number of decades ago. No road widening is required in this location and therefore no mitigation is necessary.



Plate 12-43: View of proposed transport route at Bellmount Mills entrance looking WSW. Clodagh Castle visible in background (arrow).

It is described in the Archaeological Inventory of County Cork as follows: '*Flour mill to SW of Crookstown. According to local tradition, Herricks originally built mill (no longer survives) 1km to SW, near weir shown on 1842 OS 6-inch map; due to insufficient head of water, mills moved to present location, shown on 1842 OS 6-inch map as 'Bellmount Mills'. Howards leased mill from Herricks in 1848; mill then powered by overshot water wheel (diam 26ft; L 7ft) (Kerins et al. 1985, 11). Rectangular mill (long axis E-W), 6-storey with attic, gable-ended; W gable plus addition to N weatherslated. Date stone of 1810 recently uncovered on lintel over door. Wheel pit along W gable with mill pond to W; in early 20th century a Gilbert, Gilkes and Gordon turbine (52HP) installed, powering machinery within mill via pulley and belt system. National Gas and Diesel engine installed in 1926 to supplement power; electricity provided full power after 1958; turbine and engine removed. Grain drying kiln on W end of S wall used as carpenter's work shop in early part of 20th century; another addition on W end of N wall. Later addition onto E end of S wall which now houses two pairs of French burr millstones, set on iron table, installed in 1920s; now electrically driven with modern spindles underneath. Numerous modern mill buildings/silos along N side. Pair of semi-detached early 19th-century 2-storey residential mill houses to N still occupied.*

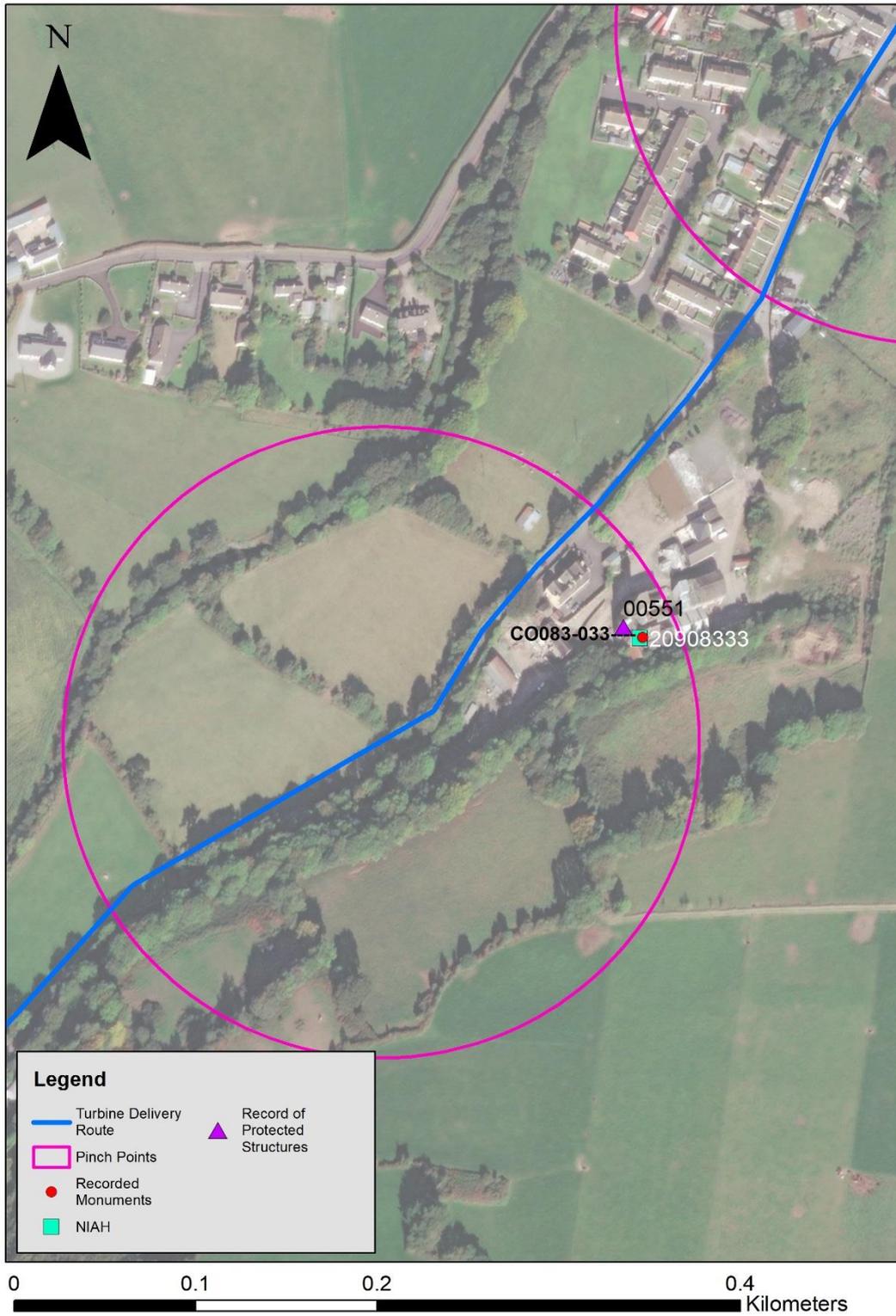


Figure 12-12: Bellmount Mills at Crookstown along delivery route.

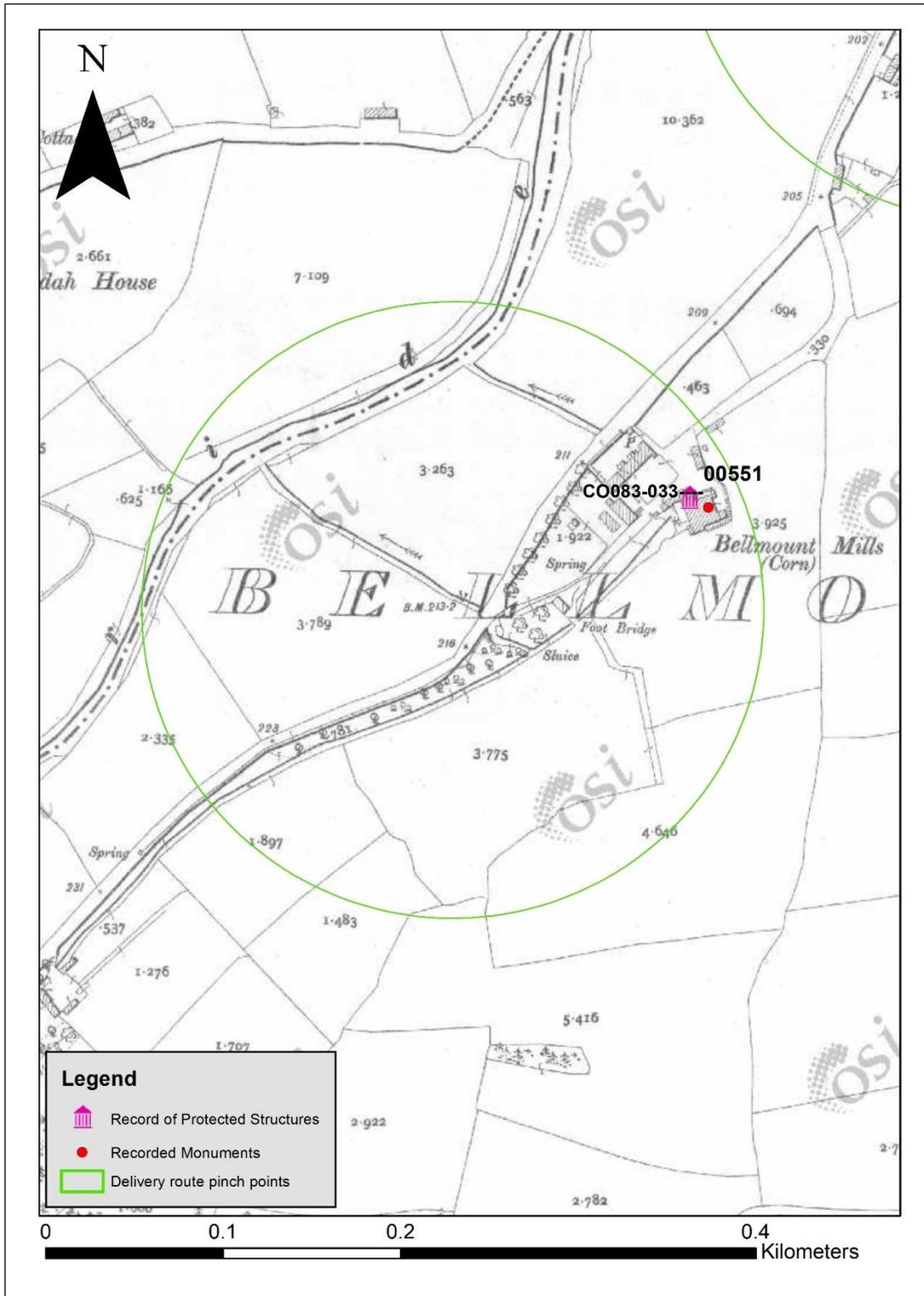


Figure 12-13: More detail of Mill complex on 25-inch OS map.

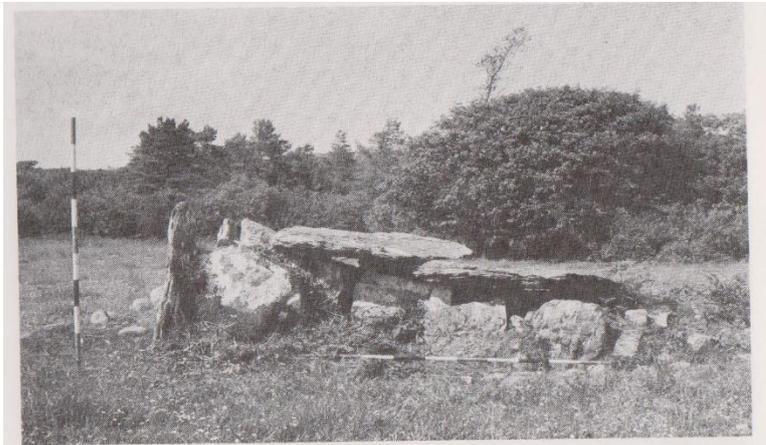
12.3.5.1.2 *Inchincurka Monuments*

Two monuments at Inchincurka, where the transport route turns north off the R585 to the L-4607-75 Local road, are worthy of mention due to their proximity to the transport route.

Two recorded monuments, CO093-052001 Fulacht Fiadh and CO093-052002 Megalithic tomb - wedge tomb, are located in pasture to the east of the proposed turbine transport route at Inchincurka Cross as shown in Figure 12-14. The monuments are described on the National Monuments database (www.webgis.archaeology.ie/historicenvironment) as follows.

CO093-052001 - Fulacht Fiadh: *'In marshy, rough grazing c.100m N of wedge tomb (CO093-05202), largely destroyed in 1960 due to road metalling in the past (UCC). Spread of burnt material, now grass covered, remains'*.

CO093-052002 - Megalithic tomb Wedge tomb: *'In level pasture, on N side of basin of Caha river. Narrow wedge-shaped gallery (L 2.8m; With 0.9m at W end, 0.25m at E) open to WNW. Covered by two roofstones; surrounded by closely-set outer-walling. At W end, outer walling and gallery sides linked by single slabs, forming a short facade. Incorporated in mound, 10.3m by 4m. (de Valera and O Nualláin 1982, 29-30, no.42).'*



4. Inchincurka (Co. 42), from South.

Plate 12-44: Photograph of wedge tomb at Inchincurka (de Valera and Ó Nualláin 1982, Plate 12).



Plate 12-45: Wedge tomb CO093-052/002 shown in northern part of field looking north-east.

An inspection of the monuments at Inchincurka Cross revealed that the wedge tomb CO093-052002 is located further to the east than shown on the Historic Environment Viewer (HEV) and 6 inch RMP maps. The tomb is located in the same pasture field but is situated c. 90m further to the northeast than that indicated by the red dot on the Historic Environment Viewer (ITM 523319, 559636). The wedge tomb is upstanding and in relatively good condition, however, no visible surface trace of the nearby fulacht fiadh CO093-052001 was apparent. It should be noted that the HEV description of the fulacht fiadh states that it was largely destroyed in 1960. The monuments are located in excess of 100m from the edge of the L-4607-75 Local road therefore no impacts arising from the proposed transport route will occur. However and as mentioned above, all works undertaken at the Inchincurka junction were completed during the construction phase of the existing Carrigarierk Wind Farm (Plate 12-46 below), with no additional upgrade works being required to facilitate the delivery of the turbines to the Proposed Development site.



Plate 12-46: New road constructed at Inchincurka Cross as part of the delivery route for the existing Carrigarierk Wind Farm looking northwest.

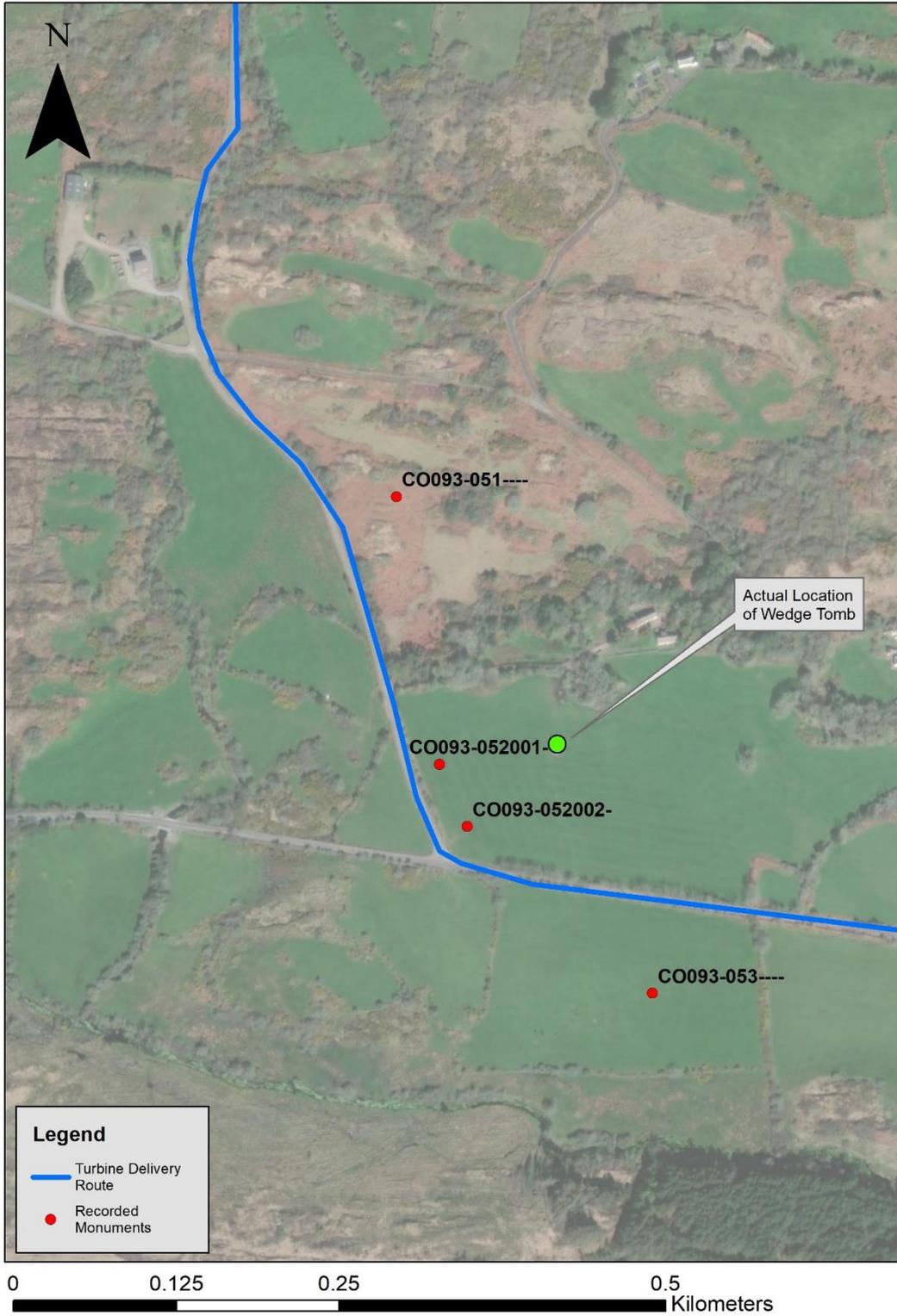


Figure 12-14: Monument to the east of Inchincurka Cross roads

12.4 Likely Significant Effects and Associated Mitigation Measures

12.4.1 Do Nothing Scenario

If the Proposed Development were not to proceed, no changes would be made to the current land-use practice. Forestry and small scale agriculture at the site would continue to be managed under the existing commercial forestry arrangements and farming practices. Additionally, the Proposed Development is an extension to the existing Carrigarierk Wind Farm and the opportunity to maximise the generating capacity of the wind farm at this location would be lost.

Indirect effects to Cultural Heritage, in particular, in the wider landscape setting would not occur.

12.4.2 Construction Phase Potential Impacts – Indirect

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from ‘the site’. This includes impacts on visual setting of any cultural heritage asset in the wider landscape. Since these effects are only possible once the proposed turbines are constructed, they are considered operational effects and are therefore discussed in Section 12.4.4 below. No indirect effects were identified which would occur at the construction stage.

12.4.3 Construction Phase Potential Impacts - Direct

Direct impact refers to a ‘physical impact’ on a monument or site. The construction phase of the development consists largely of earthmoving activities such as peat and topsoil removal. The potential impacts on the known and potential archaeological, architectural and cultural heritage of the area are outlined below with the suggested mitigation measures. The impacts are described according to each element of the Proposed Development, turbines, grid connection, delivery routes etc. Where any potential direct impacts do occur, they are negated through the use of suitable mitigation measures such as exclusions zones (buffer zones), and monitoring.

12.4.3.1 National Monuments in State Care including those with Preservation Order (Direct Effects)

No National Monuments in State Ownership/Guardianship are located within or adjacent to the EIAR Site Boundary and therefore no direct impacts on these aspects of the archaeological resource are identified. Indirect Operational effects are addressed in Section 12.4.5 below.

12.4.3.2 Recorded Monuments (Direct Effects)

Three recorded monuments subject to statutory protection as defined in the Record of Monuments and Places or Sites and Monument Record are located within the EIAR Site Boundary for the Proposed Development. The monuments are listed in Table 12-3 above.

12.4.3.2.1 CO093-020 Site of Standing Stone

Pre-Mitigation Impact

The location of this monument was inspected as part of the assessment. It is located 182m to Turbine E3. A large natural rock outcrop is located in the approximate area of where monument centre point is shown on the Historic Environment Viewer. No visible surface trace of any single standing stone was located. Impacts will not occur to the stone since there is no visible trace of the monument. Sub-surface features could be impacted by groundworks however.

Proposed Mitigation Measures

In order to preserve any potential sub-surface archaeological features associated with the standing stone a protective 20m buffer zone around the recorded monument will be established prior to construction as shown in Plate 12-15. This mitigation measure will be detailed in the Construction and Environmental Management Plan (CEMP).

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.

Significance of Impacts

The construction stage will not have any significant direct effects on the standing stone and the significance of effects is imperceptible.

12.4.3.2.2 CO093-091 Mass Rock

Pre-mitigation Impact

The Mass rock is located to the east of an existing site track that was constructed as part of the existing Carrigarierk Wind Farm. It is located 1km to the nearest proposed turbine E3. A 30m protective buffer zone was set up by Tobar archaeological services and the client on the 2nd August 2019 in compliance with the planning permission relating to the main Carrigarierk Wind Farm. This monument is now fenced off. In order to protect the monument during groundworks associated with the Proposed Extension to the Carrigarierk Wind Farm, the buffer zone will remain in place.

Proposed Mitigation Measures

The 30m buffer zone around the recorded monument will be re-inspected and re-established if necessary by the archaeologist prior to construction. This mitigation measure will be detailed in the Construction and Environmental Management Plan (CEMP).

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.

Significance of Impacts

The construction stage will not have any significant direct effects on the Mass Rock and the significance of effects is imperceptible.

12.4.3.2.3 CO093-092 Mass House

Pre Mitigation Impact

The Mass House is located to the west of an existing site track that was constructed as part of the existing Carrigarierk Wind Farm. A 30m protective buffer zone was set up by Tobar archaeological services and the client on the 2nd August 2019. This monument is now fenced off. In order to protect the monument during groundworks associated with the Proposed Extension to the Carrigarierk Wind Farm, the buffer zone will remain in place.

Proposed Mitigation Measures

The 30m buffer zone around the recorded monument will be re-inspected and re-established if necessary prior to construction. This mitigation measure will be detailed in the Construction and Environmental Management Plan (CEMP).

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.



Significance of Impacts

The construction stage will not have any significant direct effects on the Mass Rock and the significance of effects is imperceptible.

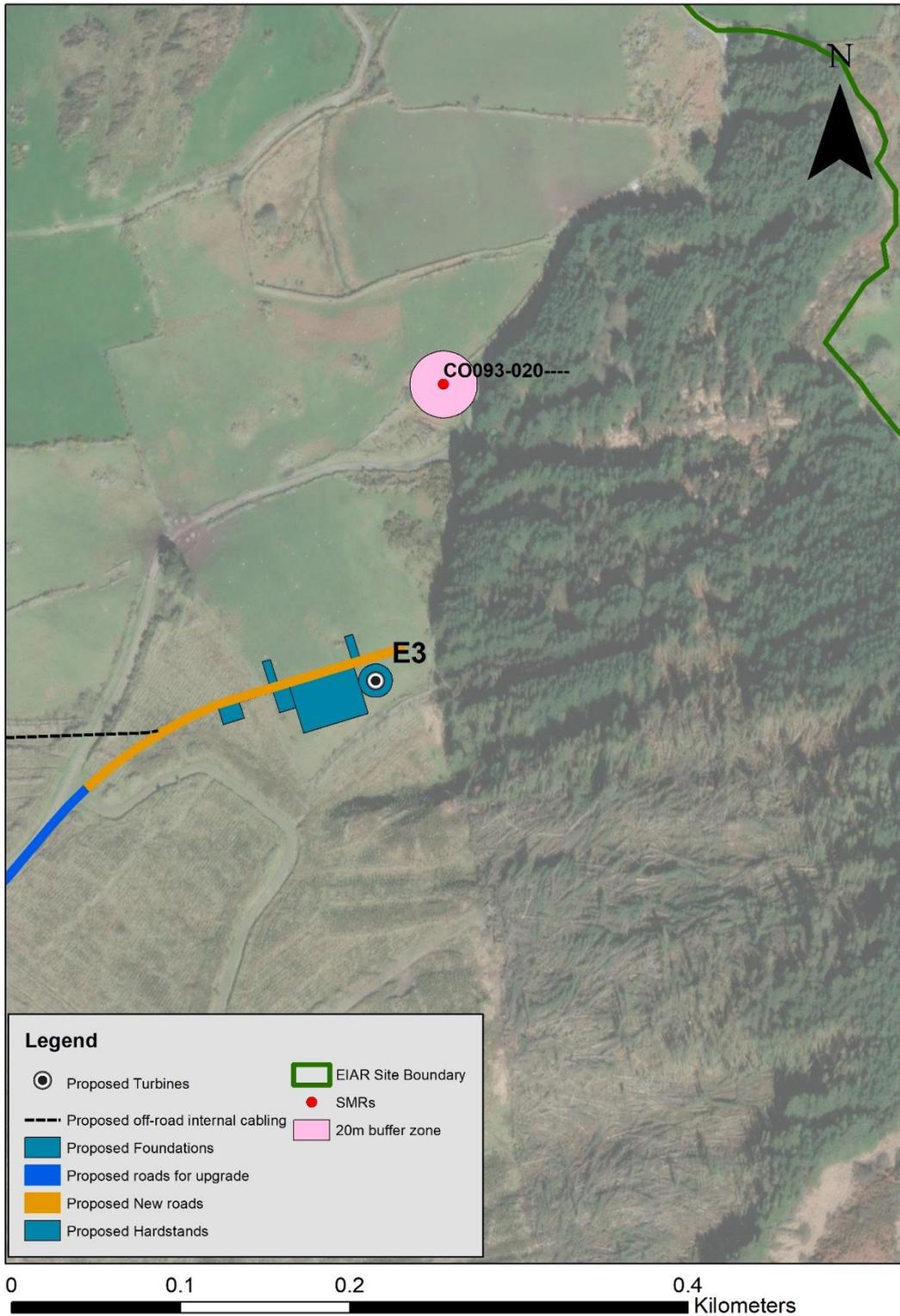


Figure 12-15: Protective 20m buffer zones around Derryleigh Standing Stone (site of) within the EIAR Site Boundary

12.4.3.3 Newly Recorded features within the EIAR Site Boundary (Direct Effects)

No new above ground archaeological features (i.e. pre 1700 AD) were noted within the EIAR boundary. A number of 19th century structures and associated walls and historic roads were recorded in the vicinity of turbines E2 and E3 and these are described in Sections 12.3.1.1 and 12.3.1.2 and 12.3.1.3. Impacts are discussed in Section 12.4.3.6 below.

12.4.3.4 Previously unrecorded sub-surface archaeological features

In general, the Proposed Development will utilise existing tracks where possible, with approximately 500 metres of existing roadway/tracks requiring upgrading and approximately 1.4 kilometres of new access road to be constructed. Furthermore, the Carrigierck Wind Farm site was subject to full-time archaeological monitoring at the construction stage in 2019/20 and was undertaken by Tobar Archaeological Services. No features were uncovered at the time of monitoring. The potential for the Proposed Development area to contain as yet unrecorded sub-surface sites and artefacts is medium with the new infrastructure and turbines being located in previously undisturbed ground, in particular the green field sections of the site. The excavation of topsoil /peat for the new turbine bases, hardstands, construction compound, borrow pits and internal cabling where they are located on undisturbed ground may impact on any new sub-surface sites, if present. Mitigation measures will include archaeological testing and monitoring of groundworks in undisturbed areas of the site.

Pre-Mitigation Impact

Should new sub-surface sites or features be present within the site (currently not visible on the surface) the impact is likely to be significant negative and permanent (i.e. the excavation by machinery would permanently remove the sites resulting in a significant negative impact).

Proposed Mitigation Measures

- Archaeological testing of the following green areas of the site: Proposed turbine bases and hardstands for Turbines E2 and E3
- Archaeological monitoring (under licence from the National Monuments Service) of any geotechnical / engineering trial pits or investigations and a report detailing the results of same.
- Archaeological monitoring of all ground works during construction.. If archaeological finds, features or deposits are uncovered during archaeological monitoring, the developer will be prepared to provide resources for the resolution of such features whether by preservation by record (excavation) or preservation in situ (avoidance). The National Monuments Service will be informed of such findings to discuss how best to proceed Once the project is completed, a report on the results of the monitoring will be compiled and submitted to the relevant authorities.

Residual Impact

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

Significance of Impacts

The construction stage will not have any significant effects on unrecorded potential sub-surface sites since they will be dealt with by way of mitigation measures.

12.4.3.5 Protected Structures/NIAH within the proposed EIAR Site Boundary (direct effects)

No built heritage structures which are subject to statutory protection or otherwise are located within the EIAR Site Boundary. No direct effects to the Built Heritage will arise at the Construction Stage.

12.4.3.6 Other Cultural Heritage within the proposed EIAR Site Boundary

Pre Mitigation Impact

A number of cultural heritage features were recorded both to the south-east of Turbine E2 and to the north of Turbine E3. The features consist of the remains of a series of farm tracks, field boundary walls and the remains of small building / huts and a derelict dwelling house. The proposed road, hardstand and turbine base associated with E2 was re-aligned in order to avoid impacting on the structures. The structures are detailed in Table 12-7 above, described in Sections 12.3.1.1 and 12.3.1.2 and are annotated on **Error! Reference source not found.** above. Groundworks could potentially negatively impact the features and therefore mitigation is required.

Proposed Mitigation Measures

- A 15m buffer zone around the features will be established prior to construction.
- Archaeological monitoring by an archaeologist will also seek to identify and ensure the adequate protection of the structures.
- This mitigation measure will be detailed in the Construction and Environmental Management Plan (CEMP).

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.

Significance of Impacts

The construction stage will not have any significant direct effects on the local built heritage and the significance of impacts is imperceptible.

12.4.3.7 Townland Boundaries

Pre Mitigation Impact

A direct impact to the line of the Clogher- Gortnahoughtee townland boundary may occur as the hardstand for Turbine E1 crosses the feature in this location. No remains of a boundary were noted during field survey, although given the overgrown nature of the site in this location, the boundary may survive beneath the dense overgrowth.

Proposed Mitigation Measures

- A walkover survey of clear-felled areas prior to construction would serve to record and photograph any surviving boundaries in this location.

Residual Impact

No residual impacts will occur if the mitigation measures are implemented.

Significance of Impacts

Any surviving boundaries would be photographed and recorded prior to construction (preservation by record) and therefore no significant impacts would occur.

12.4.3.8 Protected Structures/NIAH/RMP along the proposed delivery route (direct effects)

12.4.3.8.1 Bellmount Mills

Pre-Mitigation Impact

For the purposes of assessment, the turbine components and other abnormal loads will be transported, from Ringaskiddy Port, west on the N22, before turning southwest along the R585 Regional Road via Crookstown. The turbines will travel along the R585 before turning north onto the L-4607-75 Local road. From here, the turbines will travel north before turning left onto the L-8535-0 Local Road towards the existing site entrance. The route has undergone a detailed autotrack assessment which is detailed in Chapter 14, Section 14.1.8 of the EIAR. Although the turbine delivery route extends past Bellmount Mills, no impacts will occur.

Proposed Mitigation Measures

Since no groundworks are required in this location, no mitigation is necessary.

Residual Impact

No residual impacts will occur since no negative effects were identified.

Significance of Impacts

The construction stage will not have any significant direct effects on the local built heritage and the significance of impacts is imperceptible.

12.4.4 Operational Phase Potential Impacts (Direct)

In terms of archaeology, architecture and cultural heritage, since peat removal and groundworks would be complete, it is considered that no direct effects would occur at the operational stage.

12.4.5 Operational Phase Potential Impacts (Indirect)

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 or any cultural heritage asset. 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 Irish industry-wide approach in for assessing the degree of impact to the setting of a monument. The assessment is based on previous experience, Geographical Information Systems (in particular Viewshed Analysis) and the ‘*Guidance on Setting and the Historical Environment*’ (Historic Environment Division Northern Ireland) was utilised. The methodology through which indirect impact is assessed is presented in Section 12.2.5 above. According to the aforementioned document ‘*A range of tools may be employed in defining and assessing changes to setting, for example historic landscape analysis using Geographical Information Systems (GIS), which may include viewshed analysis*’.

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.

Potential operational impacts are discussed below according to each Cultural Heritage Asset. Those elements of the Proposed Development which are not capable of impacting on the visual setting of monuments (such as proposed roads, borrow pits, underground cables etc.) are scoped out of this section

of the assessment. Those elements which are deemed to be more likely to impact on visual setting such as turbines are discussed below.

12.4.5.1 **National Monuments in State Care including those with Preservation Order (Indirect Effects)**

12.4.5.1.1 **National Monument 233, CO094-060001 Cahervagliar Ringfort, Cappeen West**

Pre-Mitigation Impact

Viewshed analysis (shown above in Figure 12-3) results are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration. The results show that turbines E1 and E3 may be visible from mid shaft upwards and that the upper portion of E1 may be seen from the monument. There are good views in a westerly direction from Cahervagliar ringfort but numerous boundaries are also located in the vicinity as well as forestry plantations visible in all directions. The Zone of Theoretical Visibility used in the LVIA Chapter 13 (Figure 13-1) also shows that this monument is located within an area that shows visibility of potentially three turbines. This accords with the viewshed in that some level of potential visibility was demonstrated for all turbines. Existing screening and the intervening distance should minimise any potential impacts on setting. The distance together with natural screening such as field boundaries and forest plantations in the intervening area is such that impacts on setting will be Not Significant.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting there are no mitigation measures for this potential impact.

Residual Impact

The residual impacts will be Not Significant.

Significance of Effects

The turbines will not have any significant/adverse indirect effect on National Monument Cahervagliar ringfort and the significance of effects is Not Significant.

12.4.5.1.2 **National Monument 374, CO093-043 Farranahineeny Stone Row, Farranahineeny**

Pre-Mitigation Impact

The viewshed results (as shown above in Figure 12-4) show that Turbine (E2) may not be visible from the stone row. It shows that Turbine (E1) may be visible from mid shaft upwards and that only the upper portion of the other turbine (E3) may be visible. The viewshed results also show that the most extensive views from the stone row are to the west, south, east and north-east with limited views to the north. The Zone of Theoretical Visibility used in the LVIA Chapter 13 (Figure 13-1) also shows that this monument is located within an area that shows theoretical visibility of potentially two turbines. None of the proposed turbines will impact on any sun alignments associated with the stone row and this is assessed in Section 12.3.2.1.1. Photomontage 19 (Photomontage Booklet - Volume 2) shows that Turbine E1 will be visible from mid- tower and the blade from Turbine E3 will be visible from the monument. A change to the setting of the stone row will occur but given the varying degrees of visibility of two of the three proposed turbines from the monument, impacts on setting are likely to be slight. Cumulative effects to include other projects including the existing Carrigierck turbines are addressed in Section 12.5.2.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting there are no mitigation measures for this potential impact.

Residual Impact

The residual impacts will be Slight.

Significance of Effects

The significance of effects on National Monument Farranahineeny Stone Row as a result of the proposed 3 turbines will be Slight .

12.4.5.1.3 **National Monument 12/1971, CO107-008 Dromdrasdil Stone Row, Dromdrasdil**

Pre Mitigation Impact

The Viewshed results (shown above in Figure 12-5) show that Turbine E2 will not be visible from the monument. It also shows that Turbine E1 may be visible from mid tower upwards and that only the upper portion of Turbine E3 may be seen. The Zone of Theoretical Visibility map used in the LVIA Chapter 13 (Figure 13-1) also shows that this monument is located within an area that shows visibility of potentially two turbines. Both results are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration. The area of the monument is surrounded by fairly substantial field boundaries which in reality are likely to screen the turbine from views and together with the separation distance would result in an effect on setting considered to be Not Significant.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines in the wider landscape setting there are no mitigation measures for this potential impact.

Residual Impact

The residual impacts will be Not Significant.

Significance of Effects

The significance of effects on National Monument Dromdrasdil Stone Row will be Not Significant.

12.4.5.2 **Recorded Monument within the EIAR Site Boundary (indirect effects / effects on setting)**

The monument located within the EIAR Site Boundary is discussed in Section 12.3.2.2 above and consists of a standing stone. There is no visible surface trace of the stone having examined the site and consulted the published Inventory entry description of the monument. Potential impacts of turbines on setting will not occur since there are no surviving remains of the standing stone.

Pre-Mitigation Impact

There will be no impacts on the monument.

Proposed Mitigation Measures

No mitigation measures are being proposed since the monument does not survive.

Residual Impact

No residual impacts are being proposed since the monument does not survive.

Significance of Impacts

No impacts will occur to the setting of the monument since there are no visible remains.

12.4.5.3 Newly Recorded sites within the EIAR Site Boundary (Indirect Effects)

No new archaeological monuments or sites were detected during field survey. A number of 19th century field walls, tracks and derelict buildings were noted and potential impacts on the setting of these local built heritage features is addressed in Section 12.4.5.6 below.

12.4.5.4 Recorded Monuments within 5km of the proposed Turbines (Indirect Effects)

All monument types within 5km of the nearest proposed turbines are discussed in Section 12.3.2.3 above. Where a potential impact on setting has been identified through viewshed analysis or the Zone of Theoretical Visibility map used in the Landscape and Visual Chapter 13 (Figure 13-1), they are discussed here. One hundred and thirty-five (135) archaeological monuments are located within 5km of the nearest proposed turbine and these are detailed above in Table 12-4. A breakdown of the monuments by type is depicted on Figure 12-8.

12.4.5.4.1 *The Prehistoric Period*

The prehistoric period is represented by 40 archaeological monuments within the 5km study area containing the following monument types: Barrow - ring-barrow, Boulder-burial, Burnt spread, Fulachta fia, Megalithic tomb - wedge tomb, Standing stone, Standing stone - pair, Stone circle - multiple-stone and a Stone row.

Fulachta Fia

Fulachta fia account for a very small number (4) within the 5km study area. Again, this monument type may span from the Bronze Age (c. 2400-500 BC) to the early medieval period (5th - 12th century AD). All four examples are located to the south of the Proposed Development site mainly distributed within forestry plantations. Three are located where the ZTV map (LVIA Chapter 13, Figure 13-1) suggests two turbines may be visible and the fourth is located where one turbine may be visible. Potential effects on these low visibility sites will be imperceptible.

Wedge Tombs

Nine wedge tombs are located within 5km of the nearest proposed turbines. They are distributed to the northwest, south through to the northeast of the EIAR Site Boundary. The nearest wedge tomb is located within the EIAR Site Boundary, 600m to the west of the existing T5 turbine, 88m to the west of the constructed road and 346m to the south of the existing Turbine T4. It is located 780m to the southwest of proposed Turbine E1. The ZTV map (LVIA Chapter 13, Figure 13-1) shows that potentially only one turbine may be seen from this location. A photomontage taken from this location as part of the original wind farm proposal showed that the upper half of Turbine no. T4 turbine (now existing) could be seen from this location and views in all directions were largely blocked by forestry. A more recent photomontage (Photomontage Booklet - Volume 2 - Photomontage 20) was undertaken in order to ascertain what could potentially be seen of the proposed turbines and also to assess cumulative effects. It shows that none of the proposed turbines can be seen from the tomb. When forestry is clear-felled, the

ground is re-planted and therefore the views may change for a short time-frame before returning to the current view. In the wider landscape setting, the ZTV suggests that three turbines may be visible from the locations of six wedge tombs (not assuming natural screening) and in this regard impacts on setting will be slight. The remaining two are located in areas where 1-2 turbines may be seen resulting in a slight effect on setting.

Standing Stones

Seventeen single standing stones are located within the 5km study area with examples located in all directions from the EIAR Site Boundary. The 17 single standing stones includes the site of the standing stone to the north of E3 proposed turbine. The ZTV map (LVIA Chapter 13, Figure 13-1) suggests that the 3 turbines may be visible from the standing stones (7) to the north of the EIAR Site Boundary and that two proposed turbines may be visible from the standing stones to the south (6) of the EIAR boundary with either none or one turbine visible from the locations of the remaining standing stones. This model does not assume trees or natural screening that may in reality minimise or remove any potential impacts on setting altogether. Impacts on setting will be slight.

Stone Rows

Three stone rows are located within 5km of the proposed turbines one of which is discussed in Section 12.3.2.1.1 above owing to its National Monument status. The distances and location of the stone rows are shown in Table 12-4 and **Error! Reference source not found.** above. The ZTV (LVIA Chapter 13, Figure 13-1) shows that the three proposed turbines may potentially be seen from the remaining two stone row locations to the west and north. Impacts on setting will be slight.

Stone Circles

Two are located within 5km of the nearest proposed turbine and their distances and location are detailed in Table 12-4 and **Error! Reference source not found.** above. One example in Coolmountain (CO093-013) is located to the south-west of the EIAR Site Boundary where the ZTV (LVIA Chapter 13, Figure 13-1) shows that theoretically only one proposed turbine may be seen. The ZTV shows that the second monument, to the east of the EIAR Site Boundary at Gortroe (CO094-046) may have potential visibility of two to three proposed turbines from this location. Impacts on setting will be slight.

Standing Stone Pairs

Two standing stone pairs are located within the 5km study area and distances and location are detailed in Table 12-4 and **Error! Reference source not found.** above. The eastern example (CO093-014) is located in an area which the ZTV (LVIA Chapter 13, Figure 13-1) shows no visibility in the direction of the proposed turbines. The south eastern example CO094-045 is located on top of a low ridge in rolling pasture and is located in an area where potentially three turbines may be visible. Impacts on setting will be slight.

12.4.5.4.2 The Early Medieval Period

The majority of the remaining monuments are represented by ringforts (25), enclosures (6) and souterrains (12) within 5km of the proposed turbines.

The zone of theoretical visibility (ZTV) map used in the LVIA Chapter 13 (Figure 13-1) shows that any ringforts / enclosures or souterrains that are located to the north of the EIAR Site Boundary would have potential visibility of three proposed turbines. The locations of the monuments to the south vary between one to two turbines potentially being visible. Any potential visibility may be negated by existing screening however.

Photomontage 18 (Photomontage Booklet - Volume 2) was undertaken from the nearest enclosure/ringfort (MAP ID 13/14 in Table 12-4 and **Error! Reference source not found.** above) to the south in order to ascertain if there would be any potential effects on setting as a result of the three proposed turbines and also any potential cumulative effects (addressed separately in Section 12.5.2.2 below). The photomontage shows that none of the proposed turbines will be seen from this location. Overall, impacts on setting of other ringforts/enclosures will be slight in the wider landscape.

12.4.5.4.3 **Sites with religious or ritual association**

A number of monuments within 5km of the Proposed Development site have religious associations and include Mass-rocks (6), Burial grounds (8), Graveyards (2), and Holy wells (1) A Mass House is also included. The nearest example as well as the associated Mass House has been discussed in Section 12.3.2.2 above. The nearest burial ground (CO081-032, Map ID 15) (Table 12-4 and **Error! Reference source not found.** above) to the north-east is shown as a hachured subcircular area on 1842 OS and is largely levelled.

The ZTV (LVIA Chapter 13, Figure 13-1) shows that potentially any monument to the north and north-east of the ELAR Site Boundary may have visibility of three turbines. Impacts on setting will be slight.

Gouganebarra is outside the 5km study area (at 12km to E1) however owing to its high visitor presence and ritual association with pilgrimage a viewshed analysis was undertaken from the oratory. This was done to ascertain what views of the proposed turbines may be possible by an observer standing at the oratory and looking in the direction of the Proposed Development. The result shows that no turbines may be seen from the monument. Furthermore, the ZTV shows no visibility in the direction of the proposed turbines (from the location of the Oratory). No impacts on setting will occur.

12.4.5.5 **Built Heritage including RPS / NIAH within 5km of the proposed Turbines (Indirect Effects)**

The majority of the recorded built heritage structures are located in Inchigeelagh village. The Zone of Theoretical visibility map used in the LVIA Chapter 13 (Figure 13-1) suggests that the three proposed turbines may be seen from structures (Map ID 2, 4-9 NIAHs) in Inchigeelagh Village. Since the model does not take other buildings, trees and boundaries into consideration, this visibility will not occur. Inchigeelagh is located to the north of the River Lee which runs in an East/West direction. The river bank on the north and south is densely planted with trees and vegetation and in effect screens the Proposed Development from view. Furthermore views to the south of the proposed turbines from the NIAH structures within the village of Inchigeelagh will be blocked by buildings.

12.4.5.6 **Local Built Heritage (Indirect Effects / Effects on setting)**

Pre-Mitigation Impact

A number of cultural heritage features were recorded both to the south-east of Turbine E2 and to the north of Turbine E3. The features consist of the remains of a series of farm tracks, field boundary walls and the remains of small building / huts and a derelict dwelling house. All of the structures are marked on the 6 inch Cassini OS map and are likely to be late 19th to early 20th century in date. None of the features will be directly impacted by the Proposed Development. The features recorded are not subject to statutory protection by way of inclusion in the RPS. The features are, however, of local cultural heritage value. The proposed turbines will be visible in full from the features. The latter stone walls and derelict stone buildings are typical in terms of rural Ireland and are not unique in this regard. A change to the setting in which the features are located will occur in the same way as a modern dwelling or farm building would. Impacts on setting will be slight.

Proposed Mitigation Measures

As it is not possible to mitigate the indirect effects of the turbines on setting there are no mitigation measures for this potential impact.

Residual Impact

Residual impacts will be slight.

Significance of Impacts

The significance of impacts will be slight.

12.4.5.7 The Gaeltacht

The Proposed Development is not located within a designated Gaeltacht area and therefore no impacts will occur.

12.5 Cumulative Impacts

Cumulative impact is defined as ‘*The addition of many small impacts to create one larger, more significant, impact*’ (EPA 2017). 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 Construction and Operational Stages are considered.

12.5.1 Cumulative Impacts (Construction Stage)

Since all potential direct effects on cultural heritage have been assessed and mitigated, cumulative direct impacts will not occur at the construction stage of the Proposed Development.

12.5.2 Cumulative Impacts (Operational Impacts on Setting)

The potential to be able to see more turbines in the wider landscape setting from National Monuments is such that cumulative impacts could occur since it is not possible to mitigate the effects on setting arising from turbines at the operational stage. Each National Monument is considered separately below. Only National Monuments within 10km of the proposed turbines as described above are considered. The viewsheds will show if other turbines fall within the visible areas from the National Monuments. Viewsheds were taken over a 20km distance from the monument.

12.5.2.1 National Monuments in State Care including those with Preservation Order (Indirect Effects)

12.5.2.1.1 National Monument 233, CO094-060001 Cahervagliar Ringfort, Cappeen West

When the Proposed Development is considered in its own right, existing screening and the intervening distance to the Proposed Development should minimise any potential impacts on the setting of this monument. The distance together with natural screening such as field boundaries and forest plantations in the intervening area is such that impacts on setting will be Not Significant. When other projects are considered together with the Proposed Development, one existing Shehymore turbine, two permitted Dromleena turbines and four of the five existing Carrigarierk turbines fall within the theoretically visible areas calculated at 20km from the monument. Impacts on setting of the monument would therefore increase from Not Significant to a Slight cumulative effect on setting.

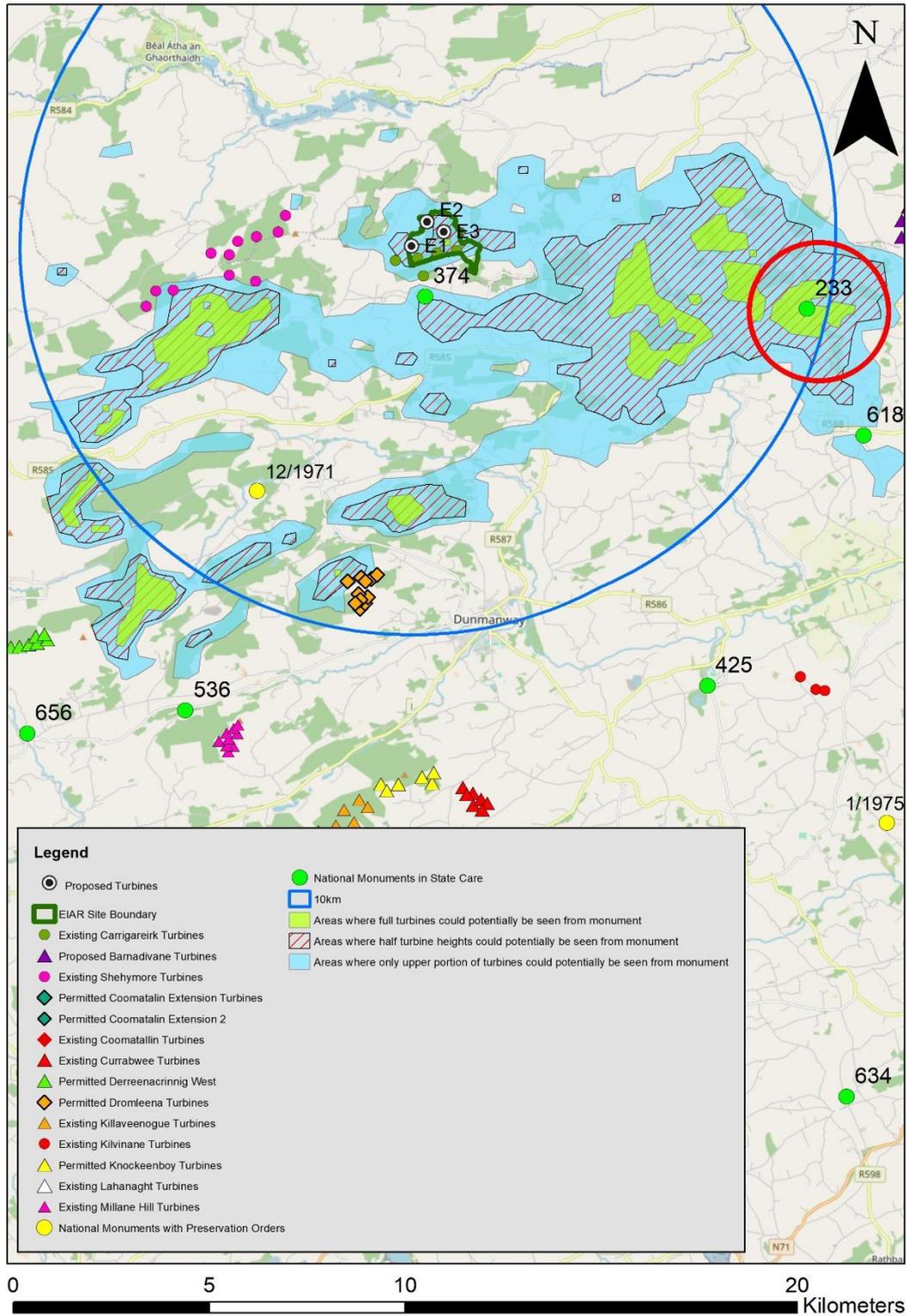


Figure 12-16: Other wind farm projects that fall within the 'visible areas' from National Monument 233, CO094-060001 Cahervaghiar Ringfort

12.5.2.1.2 National Monument 374, CO093-043 Farranhineeny Stone Row, Farranhineeny

The Zone of Theoretical Visibility used in the LVIA Chapter 13 as well as the viewshed analysis results show that this monument is located within an area that shows visibility of potentially two of the three proposed turbines. Photomontage 19 (Photomontage Booklet - Volume 2) shows that impacts on setting when considering the Proposed Carrigariork Development alone will be slight. When other projects are

added to this, the viewshed shows that four of the five existing Carrigierk turbines fall within the visible areas. Furthermore, nine of the Shehymore turbines to the northwest, eleven Dromleena turbines to the south, nine Milane Hill turbines to the south, seven Derreenacrinning turbines to the southeast, four of the Killaveenoge turbines, five of the Knockeenboy turbines, seven Currabwee turbines, seven Coomatalin turbines, three Kilvinane turbines, six Barnavidane and four Garranareagh turbines would theoretically be visible from the Stone Row.

Continuous clear weather conditions would be required to see all of the aforementioned turbines at these distances and would also require the observer to look in a different direction to the Proposed Development. The most likely cumulative effect will occur as a result of the existing Carrigierk turbines an effect which is considered to be slight/moderate to moderate; a moderate effect being 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.

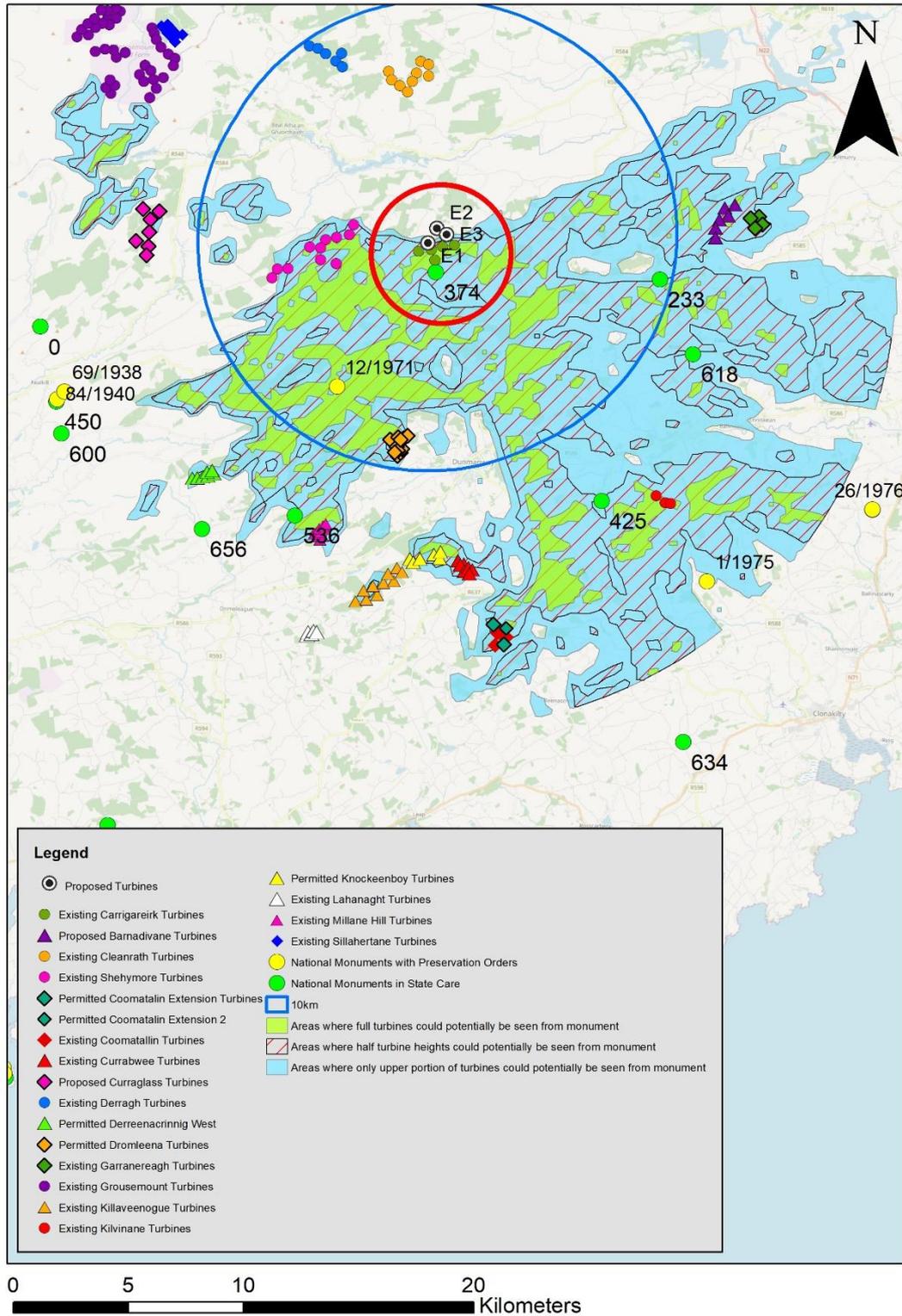


Figure 12-17: Other Wind Farm projects that fall within the 'visible areas' from National Monument 374, CO093-043 Farranahineeny Stone Row

12.5.2.1.3 National Monument 12/1971, CO107-008 Dromdrasdil Stone Row, Dromdrasdil

The Zone of Theoretical Visibility used in the LVIA Chapter 13 and the views hed analysis results show that this monument is located within an area that shows visibility of potentially two turbines. The area of the monument is surrounded by fairly substantial field boundaries which in reality are likely to screen the turbines from views and together with the separation distance would result in an effect on setting

considered to be Not Significant when considering the Proposed Carrigarierk Development alone. When other projects are added to this effect cumulative effects may occur. The viewshed shows that the following turbines fall within the visible areas from Dromdrasil Stone Row: five Carrigarierk Existing Turbines, four Shehymore turbines and four Dromleena turbines to the south. Effects on setting may increase from Not Significant to Slight.

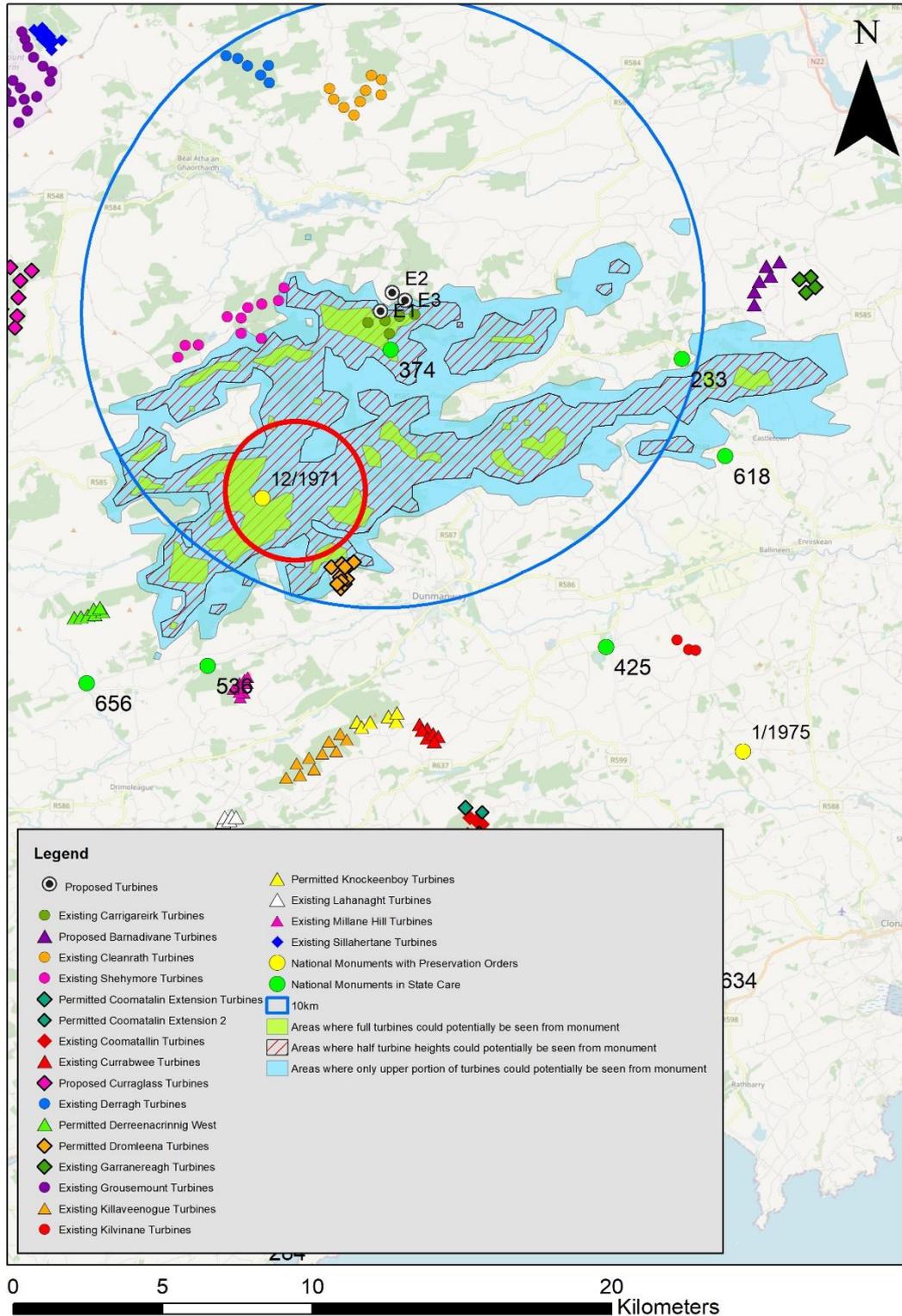


Figure 12-18: Other windfarm projects that fall within the 'visible areas' from National Monument 12/1971, CO107-008 Dromdrasil Stone Row.

12.5.2.2 Cumulative (Indirect) Impacts on Recorded Monuments

Impacts on setting of RMPs within 5km from the proposed turbines were largely considered to be slight when considering the Proposed Development alone. Viewshed results show that five of the existing Carrigarierk turbines and seven of the Shehymore turbines fall within the visible areas from those monuments within the 5km study area. When the aforementioned turbines are considered together with the other projects, cumulative effects on setting will occur. Effects on setting will increase from Slight to Slight/Moderate.

12.5.2.3 Cumulative (Indirect) Impacts on Built Heritage

Since no effects on setting on the known and recorded built heritage was identified arising from the Carrigarierk Proposed Development, no cumulative effect will occur.

12.6 Decommissioning Phase

The Proposed Development is being built as an extension to the existing Carrigarierk Wind Farm, with the design life of the Proposed Development being 25 years from the commercial operation date for the existing Carrigarierk Wind Farm (5 no. turbines). If the site is subject to decommissioning, it is likely that all 8 no. turbines will be disassembled during the 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 during the construction phase.

12.7 Conclusion

This chapter comprises an assessment of the potential impact of the Proposed Development on the Cultural Heritage resource. Cultural heritage includes archaeology, architectural heritage and any other tangible assets. The assessment was based on GIS based mapping, ZTV (LVIA Chapter 13, Figure 13-1) and Viewshed analysis to assist with the assessment of impacts on setting followed by a desktop analysis of all baseline data and a comprehensive programme of field inspection of the proposed infrastructure within the Proposed Development site boundary.

Recorded Archaeological monuments within the EIAR Site Boundary

A standing stone CO093-020 at Derryleigh is located 182m from the proposed Turbine E3 within the EIAR Site Boundary. The Standing Stone is no longer extant although the site of the monument will be fenced off with a buffer zone to protect any potential sub-surface features associated with the site. No direct impacts to the site of the monument will occur if mitigation measures are implemented. Furthermore, no indirect effect on setting of the monument will occur since the monument has no visible surface trace. A Mass house and Mass rock are also located within the EIAR Site Boundary and are located within the existing Carrigarierk Wind Farm. These monuments were fenced off with a 30m buffer zone prior to the construction of the Carrigarierk Wind Farm. These buffer zones will be re-inspected prior to the construction of the Proposed Carrigarierk Development.

Sub-surface Archaeological Potential

The sub-surface archaeological potential of the Proposed Development area is considered to be medium and this potential effect is mitigated by pre-development archaeological testing and on site archaeological monitoring during construction. The existing Carrigarierk Wind Farm was subject to full time archaeological monitoring.

Record of Protected Structures, NIAH buildings and other Cultural Heritage within the EIAR Site Boundary

No structures in the Record of Protected Structures or National Inventory of Architectural heritage are located within the EIAR Site Boundary. 19th century field walls, 19th century huts/houses and a derelict dwelling have been excluded from the Proposed Development area by re-design and these local cultural heritage features will be fenced off prior to construction to ensure their adequate protection.

Effects on setting of National Monuments in State Care

Indirect effects on the setting of National Monuments within 10km, RMPs within 5km and RPS/NIAH within 5km were assessed. Indirect effects on Dromdrasil Stone Row and Cahervagliar Ringfort are considered to be Not Significant given existing screening and intervening distance. This effect increases to Slight (cumulative) when considered together with other turbines.

Effects on setting on Farranahineeny Stone Row as a result of the Proposed Development when considered alone will be slight. This effect increases to Slight/Moderate to Moderate when considered together with other projects in particular the existing Carrigarierk Wind Farm.

Effects on setting of recorded monuments 5km from Turbines

RMPs within 5km of the nearest proposed turbine were assessed to ascertain any potential effects on their setting. Effects on setting arising from the proposed turbines will be Slight. This will increase to Slight/Moderate (Cumulative) when considered together with other projects.

Gougane Barra and its cultural heritage significance was also assessed, although it is located outside the 5km study area. The Archaeology and Cultural Heritage chapter addresses the monuments within Gougane Barra, more specifically the Oratory of St Finbarr which is a recorded monument. The assessment of Gougane Barra focused specifically on potential views from Finbarr's Oratory. This was undertaken using viewshed analysis software which aims to ascertain if views of the proposed turbines would be possible from particular observer locations (i.e. from the monuments). The results of both the Viewshed analysis and the ZTV used in the LVIA chapter demonstrate that views of turbines from the Oratory of St Finbarr are not possible. The ZTV shows that no turbines will be visible from this complex of monuments. No effects on setting will therefore occur.

Effects on setting of RPS and NIAH structures

RPS and NIAH structures within 5km of the proposed turbines were also assessed and potential effects were not identified since the majority are located within the village of Inchigeelagh with no views to the proposed turbines possible.

No cumulative effects will occur at the construction stage since any identified potential impacts have been mitigated effectively in order to reduce or remove the impact altogether.