

## 14. ARCHAEOLOGY AND CULTURAL HERITAGE

### 14.1 Introduction

This archaeological and cultural heritage chapter has been prepared by Tobar Archaeological Services. It presents the results of an archaeological and cultural heritage impact assessment for the proposed wind farm development at Lyrenacarriga and adjacent townlands, located in Counties Waterford and Cork. The development area comprises two parcels of land located in Counties Cork and Waterford and predominantly comprises forestry with both improved pasture and some arable land located within the EIAR site boundary.

The purpose of this chapter is to assess the potential impacts of the proposed wind farm on the surrounding archaeological, architectural and cultural heritage landscape. The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a comprehensive programme of field walking 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 by the proposed development. An assessment of potential impacts is presented, and a number of mitigation measures are recommended where appropriate. The visual impact of the proposed development on any newly discovered monuments/sites of significance as well as known recorded monuments is also assessed.

#### 14.1.1 Proposed Development

The Proposed Development is described in detail in Chapter 4 of this EIAR and in summary will comprise up to 17 No. turbines with a tip height of up to 150 metres and all associated foundations and hardstanding areas, access roads including upgrade of existing site roads and provision of new roads, excavation of 3 No. borrow pits, 1 No. onsite electrical substation, underground electrical and communications cabling connecting the turbines to the proposed onsite substation, 110kV loop-in connection to the existing 110kV network, 2 no. temporary construction compounds, 1 No. permanent anemometry mast, site drainage, felling and all associated works.

Of the proposed turbines, 6 No. turbines and associated infrastructure are located within the functional area of Cork County Council and 11 No. turbines and associated infrastructure are located in the functional area of Waterford County Council.

It is proposed to connect the two clusters of turbines via underground cabling located within existing agricultural land (approximately 2.68 km) and within the public road corridor (approximately 0.62 km). The cabling route measures approximately 3.3 km. It is proposed to construct a 110 kV substation within the site and to connect from here via a 110 kV loop-in loop-out connection to the existing 110 kV overhead line which runs through the site. The electrical substation will have 2 no. control buildings, battery containers, associated electrical plant and equipment, and wastewater holding tank. The haul route for the transportation of large turbine components was also assessed and focused on areas where junction accommodations works are proposed.

#### 14.1.2 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 Master's degree in Methods and Techniques in Irish Archaeology. Both are licensed by the Department of Culture, Heritage and the Gaeltacht to carry out excavations and are members of the Institute of Archaeologists of Ireland. Annette Quinn and Miriam Carroll have been working in the

field of archaeology since 1994 and have undertaken numerous projects for both the private and public sectors including excavations, site assessments (EIAR) and surveys. Miriam Carroll and Annette Quinn are directors of Tobar Archaeological Services which has been in operation for 17 years.

### 14.1.3 Legislation and Guidelines

The chapter has been prepared in compliance with all relevant EIA legislation and guidance (see Section 1.5 of Chapter 1 of this EIAR on Introduction to the Proposed Development for relevant guidance and legislation). See also Appendix 14-1 of the EIAR for legislation and guidance relating specifically to Archaeology, Architecture and Cultural Heritage.

#### 14.1.3.1 Statutory Consultations

An extensive scoping and consultation exercise was carried out by MKO in relation to the proposed development; please see Section 2.6 in Chapter 2 of this EIAR for a full list of consultees and responses.

The Department of Culture, Heritage and the Gaeltacht in their correspondence (Ref. G Pre00135/2018) noted the following in relation to underwater archaeology. *'It shall be noted that the Archaeological Impact Assessment should include an Underwater Archaeological Impact Assessment (UAIA) of any watercourses within the footprint of the proposed wind farms, including any areas for site compounds, haul roads, etc. and that might be impacted (either directly or indirectly) by the proposed works'.*

Watercourses are dealt with below in Sections 14.3.1.4 and 14.4.3.4.

### 14.1.4 Location and Topography

The Proposed Development site is located approximately 5 kilometres southeast of Tallow, Co. Waterford and approximately 9 kilometres northwest of Youghal Co. Cork. The Grid Reference co-ordinates for the approximate centre of the eastern cluster are E 603996, N 586326 and the western cluster is E 599702, N 587808. The site is accessed via local roads from the R634 Regional Road, which travels in a northwest-southeast direction between Tallow and Youghal and the R627 Regional Road. The site itself is served by a number of existing forestry roads.

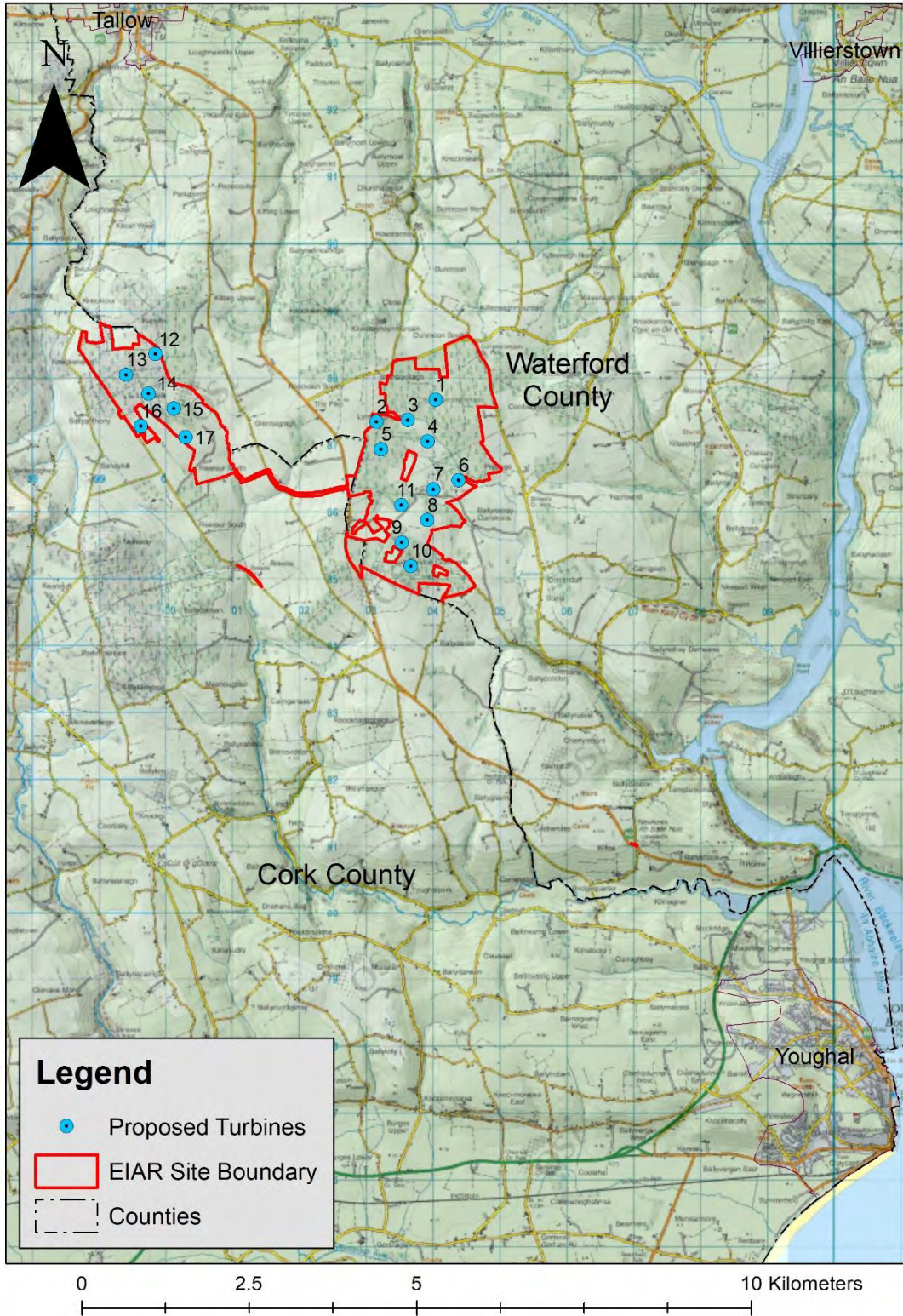


Figure 14.1: Site Location

## 14.2 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.

## 14.2.1 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.

### 14.2.1.1 Viewshed Analysis

ArcGIS online viewshed analysis was also used to assess effects of turbines on setting of archaeological monuments. The Viewshed tool uses the Esri Elevation Analysis service to determine which areas are visible from specified observer points (the observer points being the monuments). Visibility settings are used to set the height of the observer (1.75m standard), the height of the observed features (turbines), and the maximum viewing distance of the observer. This tool was utilised to ascertain the potential/theoretical visual effects of the proposed turbines 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 0.

## 14.2.2 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 and Waterford
- 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 and Waterford County Development Plan)
- Previous archaeological surveys and assessments carried out on or near to the Proposed Development site (various)
- Archaeological inventory of County Cork and Waterford

Each of these is discussed in detail in Appendix 14-2 of the EIAR.



### 14.2.3 Field Inspection

Field inspection was undertaken on the 12<sup>th</sup> and 27<sup>th</sup> September and 3<sup>rd</sup> October 2018 and again on the 19<sup>th</sup> May 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 14.3.1.

#### 14.2.3.1 Limitations Associated with Fieldwork

No significant limitations were encountered during field work. Although the site was forest covered, it was possible to access all the elements of the Proposed Development. Dense overgrowth in places however, meant that some Recorded Monuments were not accessible or visible when accessed.

### 14.2.4 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 of this EIAR. The following terminology is used when describing the likely effects of the Proposed Development from a Cultural Heritage perspective.

#### 14.2.4.1 Types of Impact

- Direct impacts arise where an archaeological heritage feature or site is physically located within the footprint of the Proposed Development whereby the removal of part, or all of the feature or site is thus required.
- Indirect impacts may arise as a result of subsurface works undertaken outside the footprint of the Proposed 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.

##### 14.2.4.1.1 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.

## 14.2.5 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. 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 12 of this EIAR, and also viewshed analysis from specific cultural heritage assets (viewshed analysis is described in Section 14.2.1 above). The viewshed analysis used in the assessment of potential impacts on the visual setting of cultural heritage assets in the wider landscape of 10km considers the effects of the proposed turbines only. Other lower visibility infrastructure such as roads, grid connection, sub-station etc. are not included in the viewshed analysis. All other infrastructure (proposed roads, grid connection, sub-station, 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 14-1: 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

## 14.3 Existing Environment

### 14.3.1 Description of the Proposed Development

#### 14.3.1.1 Eastern Parcel

This parcel of land is located at the eastern side of the Proposed Development area and constitutes the larger parcel of the two. It is located within the functional area of Waterford County Council. It is predominantly forested land with an extensive network of existing roads within the Proposed Development and also contains pockets of agricultural land.

##### 14.3.1.1.1 Northern Access Road



Plate 14.1: Existing access road due for upgrade into the eastern parcel looking S.



Plate 14.2: Continuation of existing access road looking E, in the direction of T1.



### 14.3.1.1.2 Turbine 1



*Plate 14.3: Turbine 1 looking East at Eucalyptus plantation*



*Plate 14.4: Proposed access road to T1 looking NE.*



*Plate 14.5: Existing road due for upgrade to the south of T1, looking NW.*

14.3.1.1.3 **Proposed Construction Compound (south of T1)**



*Plate 14.6: Proposed construction compound looking SE towards dense coniferous plantation.*





Plate 14.7: Existing road to the NW of proposed compound looking SW.

#### 14.3.1.1.4 Proposed Substation Compound (south of T1)



Plate 14.8: General view of area of proposed substation from existing road looking ESE.





*Plate 14.9: Western extent of proposed substation looking S.*



*Plate 14.10: Substation looking NE.*



*Plate 14.11: Existing road due for upgrade adjacent to proposed substation compound looking NNW.*



*Plate 14.12: Existing trail which joins two sections of existing road looking W to the SW of proposed substation compound.*



### 14.3.1.1.5 Turbine 2

This turbine is located at the western edge of the EIAR study area boundary in forestry. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.13: Turbine 8 in dense forestry looking north.*



*Plate 14.14: Existing road due for upgrade to the E of Turbine 2 looking east.*



### 14.3.1.1.6 Turbine 3

This proposed turbine is located in a pasture field which is surround by forestry to the north, west and south and bounded by an open field (in crop) to the east. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.15: Proposed access road to T3 looking N



Plate 14.16: Location of proposed Turbine 3 looking north.

#### 14.3.1.1.7 Turbine 4

This proposed turbine is located in an open arable field (crop harvested at the time of survey). No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.17: General view of hardstand for T4 looking ESE.



Plate 14.18: Location of proposed turbine (T4) looking E.



14.3.1.1.8 **Turbine 5**

This turbine is located in mature forestry at the western side of the proposed development site. Although located in mature forestry the area was accessible due to the height of the trees and the clear forest floor. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.19: Proposed access road to turbine (T5) looking ENE.*



*Plate 14.20: Location of proposed turbine 5 looking N.*



14.3.1.1.9 **Turbine 6**

This turbine and associated proposed road are located in green pastureland (grazed by cattle during survey). No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.21: Proposed access road to T6 looking NNW.*



*Plate 14.22: Continuation of access road looking north.*



Plate 14.23: General view of T6 looking north towards hardstand and turbine base.

#### 14.3.1.1.10 **Turbine 7**

This turbine is located in an open arable field. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.24: General view of proposed road, hardstand and turbine base looking NW.



Plate 14.25: General view of area of proposed turbine base looking NE.



Plate 14.26: Existing road south of T7, looking west.

14.3.1.1.11 **Turbine 8**

This turbine is located to the south of T7 in a plantation of dense coniferous forestry and is accessed from an existing forest road to the north-west which extends in a south-easterly direction towards the turbine.



14.3.1.1.12

**Turbine 9**

This turbine is located in forestry. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.27: Location of turbine (T9).*



*Plate 14.28: Proposed road to T9 looking NE.*





*Plate 14.29: Existing road between T9 and T10 looking NW.*

14.3.1.1.13

### **Borrow Pit south of T9**



*Plate 14.30: Existing road due for upgrade to the west of proposed borrow pit looking N.*



Plate 14.31: Proposed borrow pit looking north.

14.3.1.1.14 **Turbine 10**

This turbine is located in semi-mature forestry, which was densely overgrown under foot. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.32: Proposed road to T10 looking ENE.





Plate 14.33: Location of proposed turbine (T10) looking NNE.

#### 14.3.1.1.15 **Turbine 11**

This turbine and associated proposed road are located within coniferous forestry. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey



Plate 14.34: General context within which proposed road and turbine 11 are located.

#### 14.3.1.2 **Western Parcel**

This comprises the westernmost parcel of proposed turbines (within the functional area of Cork County Council) and is located in predominately forested ground, although greenfield agricultural land also forms part of this area. Results of field survey are presented below according to Turbine number and associated infrastructure.

### 14.3.1.2.1 **Turbine 12**

T12 is located in mature coniferous forestry, north-west of an existing forestry track, while the proposed road to same extends through a clear-felled and replanted area. No archaeological or cultural heritage features were noted at the turbine base or along the proposed access track on the day of survey.



*Plate 14.35: T12 looking N, within mature forestry.*

### 14.3.1.2.2 **Borrow Pit (West of T12)**

A proposed borrow pit is located in coniferous forestry immediately north of an existing forestry track and west of T12. It is located in a dense coniferous forest.



*Plate 14.36: General environment within which the proposed borrow pit will be located, looking east.*



## 14.3.1.2.3

**Construction Compound to East of T13**

This is located in a Eucalyptus forest plantation to the south of an existing forest road due for upgrade. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.37: General view of proposed compound looking south.*



*Plate 14.38: View of western extent of proposed compound - note dense vegetation, looking south.*

14.3.1.2.4

**Turbine 13**

This turbine is located in clear-felled forestry which has now been replanted. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.39: General vicinity of Turbine 13 in clear-felled/replanted land looking SE.*



*Plate 14.40: Proposed road into T13 looking SW.*



14.3.1.2.5

**Turbine 14**

T14 is located in open pastureland immediately south of a tract of coniferous forestry. The proposed access road extends through the same pasture field from an existing forestry track to the west. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



*Plate 14.41: General view of T14, looking NE.*



*Plate 14.42: Proposed access track to T14, looking NW.*



Plate 14.43: Site of structure indicated on 2<sup>nd</sup> edition OS map – no above-ground remains, looking south.

#### 14.3.1.2.6 **Borrow Pit to the South-West of T14**

A borrow pit is proposed to be located to the south-west of T14 in a clear-felled and replanted coniferous forest. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.44: General view of NE extent of proposed borrow pit looking SW.



#### 14.3.1.2.7 **Turbine 15**

T15 is located in mature coniferous forestry west of an existing forestry track. No archaeological or cultural heritage items were noted in this area on the day of survey.



*Plate 14.45: T15 in mature forestry, looking south.*

#### 14.3.1.2.8 **Turbine 16**

T16 is located in pasture towards the west side of this parcel. The associated proposed access track extends from an existing forestry road further to the north-west and initially extends through re-planted coniferous forestry and a track marked on the 2<sup>nd</sup> Edition OS map before emerging into a pasture field in which T16 is located. The track marked on the 2<sup>nd</sup> Edition OS map leads to a small settlement (now overgrown) to the south-east. The latter settlement (19<sup>th</sup> century house) will be avoided by the proposed road and the turbine base. The western portion of the line of the track will require removal as part of the road construction for approximately 150m before it reaches the settlement where it turns in a southerly direction towards the turbine base. Impacts relating to this settlement and associated track are addressed in Section 14.4.3.6.1.



Plate 14.46: General view of T16, looking N.



Plate 14.47: Proposed access road to T16, looking NW.





Plate 14.48: View of existing track marked on 2<sup>nd</sup> Edition OS map. Note stone wall defining eastern extent (red arrow) which will remain in situ. Western section of track boundary consists of trees and a low denuded bank. Picture taken looking east from proposed road.

#### 14.3.1.2.9 **Turbine 17**

T17 is located to the south-east of T15 in young coniferous forestry. The proposed road to T17 extends from an existing forestry track further to the north-west, initially passing between two tracts of mature forestry before traveling along a grassy break between the young forestry and mature forestry to the north-east. A number of field boundaries remain in this area and would have functioned as field divisions until recent years when the land was forested. No above-ground archaeological or cultural heritage features were noted in this area on the day of survey.



Plate 14.49: Route of proposed road to T17 through mature forestry, looking NW.





*Plate 14.50: Route of proposed road to T17 along break in forestry, looking NW.*



*Plate 14.51: General view of T17 in young forestry, looking NE.*



### 14.3.1.3 Proposed Met Mast Compound

The met mast is proposed to be located within a site already stripped of topsoil and containing a hardstand of hardcore and concrete.



Plate 14.52: Met mast compound looking NW.

### 14.3.1.4 Proposed Collector Network Cabling Route

It is proposed to connect the two turbine clusters via an underground cable located within existing agricultural land and within the public road corridor. The cabling route measures approximately 3.3 km. The cable route was examined and assessed. One watercourse (stream) was encountered where the cable route crosses the Rearour North and Breeda townland boundary. This stream was accessible, shallow and clear on the day of survey and no archaeological features were noted. A rushy field in pasture to the east of the river may be regarded as an area of archaeological potential. Fulachta fia and burnt mounds, low visibility monuments, are often found in such locations adjacent to a water source. 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 and often have no surface evidence of a trough or depression. Levelled examples can appear as a spread containing burnt stones. Impacts relating to sub-surface archaeology is addressed in Section 14.4.3.3.

#### 14.3.1.4.1 Bridge at Breeda townland

A single arched stone roadbridge was recorded along the proposed collector network cabling route at Breeda townland. This structure is not listed in either the Record of Protected Structures or the National Inventory of Architectural Heritage. It is however a good example of local architectural heritage. The proposed cable will be buried beneath the road surface over the bridge and no works are proposed to the bridge structure itself.



*Plate 14.53: Route of the proposed cable route looking NW after it leaves T17 to the NW.*



*Plate 14.54: Same as above looking NW.*





*Plate 14.55: Cable route, further east looking W (to the west of the Met Mast).*



*Plate 14.56: Continuation south of cable route looking S (SE corner of western parcel of land).*



*Plate 14.57: Continuation of cable route over stream located along Breeda and Rearour North townlands, County Cork, looking E.*



*Plate 14.58: Continuation of cable route in a southerly direction and to the east of the river, looking N.*





*Plate 14.59: Continuation of cable route in a southerly direction and to the east of the river, looking N. Note rushy field, waterlogged in places.*



*Plate 14.60: Continuation of cable route in an easterly direction looking W.*



*Plate 14.61: Proposed cable route where it extends along farm track to the west of the public road, looking west.*



*Plate 14.62: Proposed cable route along public road looking N (Breeda townland).*





*Plate 14.63: Road bridge located at Breeda townland along which cable route will pass.*



*Plate 14.64: Same as above showing single arch stone bridge.*



*Plate 14.65: Cable route, further SE along public road looking NW.*



*Plate 14.66: Cable route looking East after it leaves public road to west.*





Plate 14.67: Continuation East of cable route, looking East.



Plate 14.68: Cable route looking East where it emerges onto public road where it enters Eastern parcel of proposed wind farm.

### 14.3.1.5 Proposed Haul Route

Two areas along the proposed haul route will require groundworks. These were assessed as part of the EIAR and are described as follows:

- (i) Lombards crossroads on the R634 – temporary hardsurfacing to be installed on the southwest corner at road verge/edge of field, in area measuring approx. 70 square metres. This will be restored following delivery of turbines to the site
- (ii) Breeda bridge – new access road measuring approx 300 metres, with 5m width (same as wind farm site roads). Road will be laid on geogrid/geotextile and field will be reinstated post-construction period.



*Plate 14.69: Section of road widening at Killea townland looking S (Lombard's Cross Roads)*



*Plate 14.70: Area of proposed road widening at Killea townland looking W (Lombard's Cross Roads).*





*Plate 14.71: Route of proposed new road at Breeda townland looking NW.*



*Plate 14.72: Route of proposed road where it crosses a small stream. Stream bed and banks were examined and no sub-surface archaeology could be identified.*



*Plate 14.73: Proposed road looking NW.*



*Plate 14.74: Continuation of proposed road looking NW.*





Plate 14.75: Proposed route of new road over deep field boundary ditch looking NNW.

## 14.3.2 Archaeological Heritage – Proposed Development

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.

### 14.3.2.1 National Monuments

National Monuments (NM) are those recorded monuments which are in the ownership / guardianship of the Minister for Culture, Heritage and the Gaeltacht (DCHG). 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 14.2.5 for methodology of assessment).

Four such monuments are located within 10km of the nearest proposed turbine and are listed in Table 14-2 and shown on Figure 14.2.

Table 14-2: National Monuments and those subject to Preservation Orders within 10km of nearest proposed turbine.

RMPNo.	ITM E	ITM N	Name	Type	Townland	Turbine ID	Distance (km)
330 and 37/1934	610460	591390	Kiltera	Ogham Stones	Dromore	T1	7.4
240	593031	593630	Conna Castle	Castle	Conna	T13	8.4
286	609998	578383	North Abbey, Youghal	Friary (Dominican)	Youghal	T10	9.3
16/1933	605918	580061	Tower House	Castle - tower house	Kilnatoora	T10	5.6

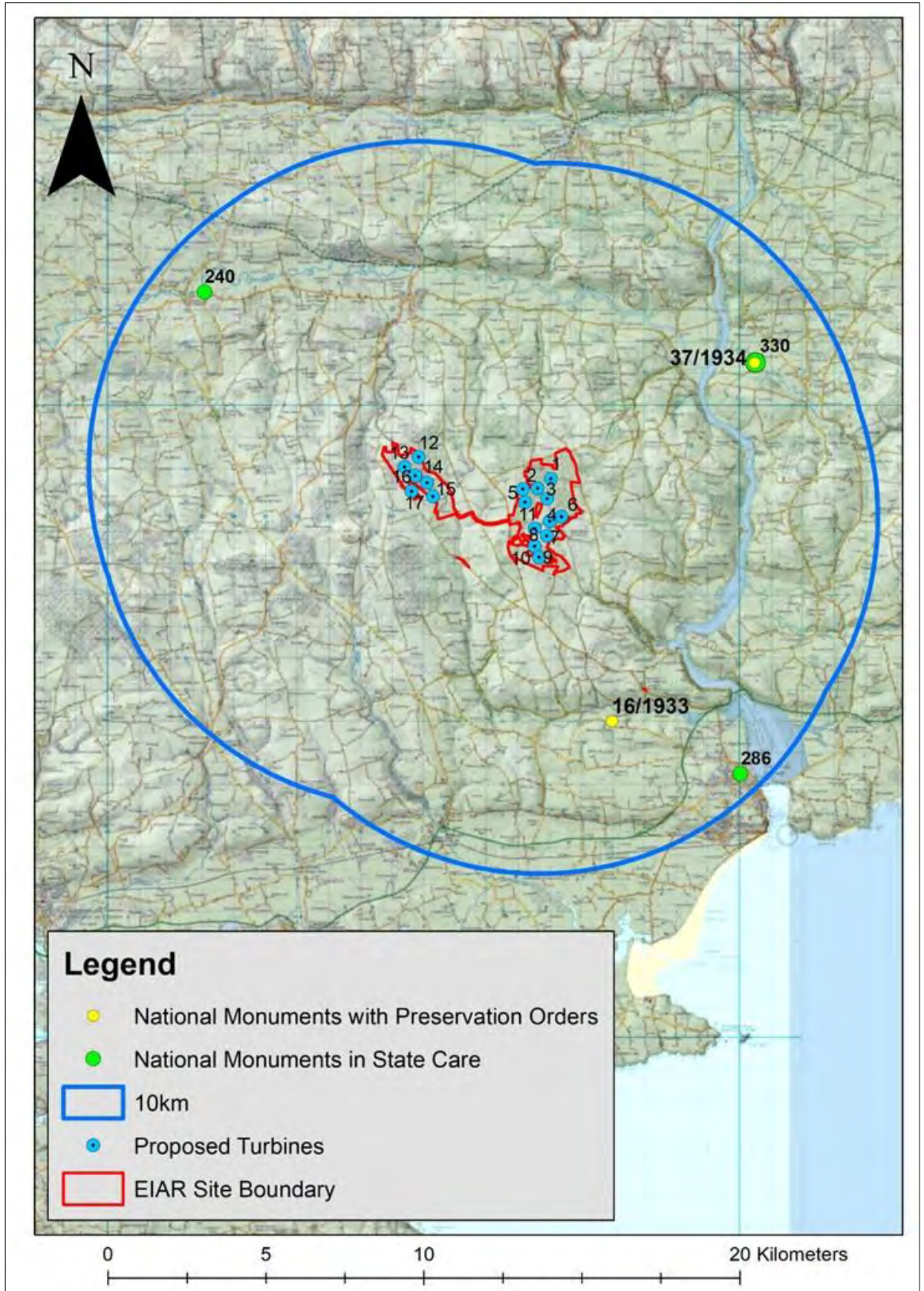


Figure 14.2: National Monuments within 10km of the nearest proposed turbine.



#### 14.3.2.1.1 Visibility from National Monuments

Viewshed analysis was utilised to ascertain what potential visibility in the direction of the turbines that may occur from various National Monuments. Viewshed analysis results are a worst-case scenario since the model does not take natural screening such as vegetation, boundaries or buildings into consideration.

##### National Monument No. 330 and Preservation Order 37/1934, Kiltera Ogham Stones at Dromore

Description of the Monument: Two ogham stones are built into a wall at the burial ground of Cill Tire at Dromore (WA029-042002-). This stone, recorded as 'slate, with conspicuous quartz veins' (1.32 x 0.51 x 0.13m converted from Macalister 1945), has been read as: COLLABOT MUCOI LUGA MAQI LOBACCONA by Macalister (1945, 262-3, no. 266). (Moore 1999, no. 1486). This stone has been studied as part of the 'Ogham in 3D' project undertaken by the School of Celtic Studies, Dublin Institute for Advanced Studies (<https://ogham.celt.dias.ie/search.php?ciic=266>). This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 37/1934).

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.3). The Zone of Theoretical Visibility used in the LVIA Chapter 12 of this EIAR also shows that this monument is located in an area where no turbines would be visible.

The potential impacts are addressed in Section 14.4.5.

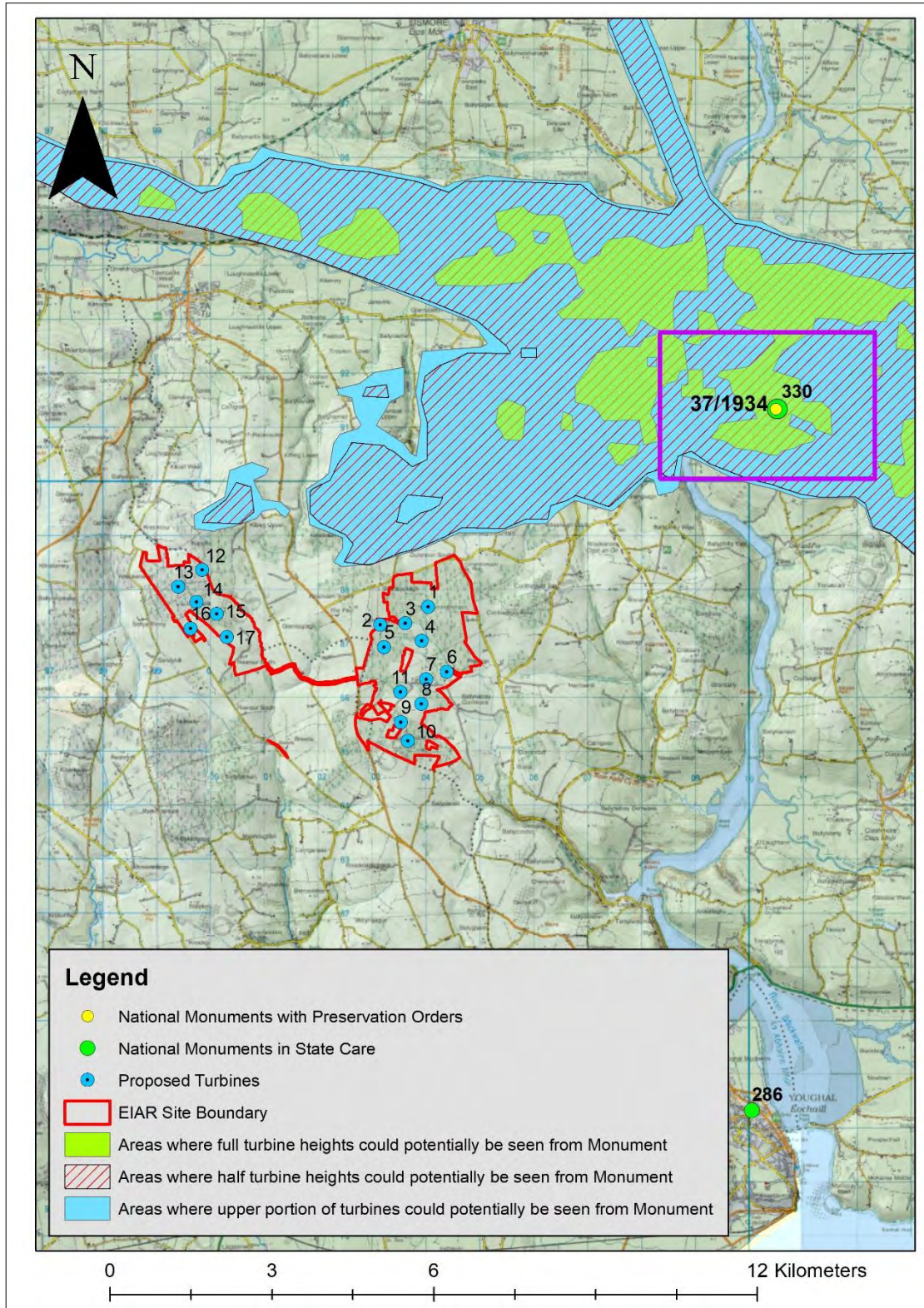


Figure 14.3: View shed results from National Monument 330.  
 Note, full extent of wind farm not located in the viewshed area (i.e. no turbines visible).

### National Monument No. 240, Conna Castle

Description of the Monument: On top of a steep-sided rock outcrop, overlooking river Bride to N. Five-storey tower (13.6m E-W; 9.6m N-S), surviving to full height; entered by door in E wall at ground level, door surround rebuilt but yett hole evident on S side. Short lobby gives access to main ground floor



chamber (8m E-W; 5.8m N-S), and to base of spiral stone staircase in SE corner, which rises to 4th floor level. Main ground floor chamber lit by windows in E, N and W walls and by pair in S wall, all of similar design with two-part embrasures: inner square-set embrasure covered by wicker-centred vault, outer part splayed and lintelled with square-headed light. Outer part of E window blocked. Window ope in N wall reused as fireplace, judging by square flue rising through roof of embrasure. Main 1st, 2nd, 3rd and 4th floor chambers entered from spiral stairs, as also are mural chambers (c. 3.8mN-S; c. 2m E-W) in E wall, at roughly same levels as main chambers. According to Flood (1915, 195) Conna Castle 'built by Sir Thomas Ruadh Fitzgerald about the year 1560'; he was eldest son of the 14th Earl of Desmond and died at the castle in 1595. Castle repaired by Richard Boyle about 1620 (*ibid.*, 196), unsuccessfully assaulted by James Fitz Morris of Macollop in 1642 before falling to Lord Castlehaven in 1645 (*ibid.*); it was accidentally burnt in 1653 (*ibid.*). Grose depicts it in the early 19th century (Stalley 1991, 122) with W gable intact, without merlons, and possibly roofed. Castle repaired by A.G.L. L'Estrange in latter part of 19th century; eventually passed to the state (National Monument No. 240).

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.4). The Zone of Theoretical Visibility used in the LVIA Chapter 12 also shows that this monument is located in an area where no turbines will potentially be visible.

The potential impacts are addressed in Section 14.4.5.

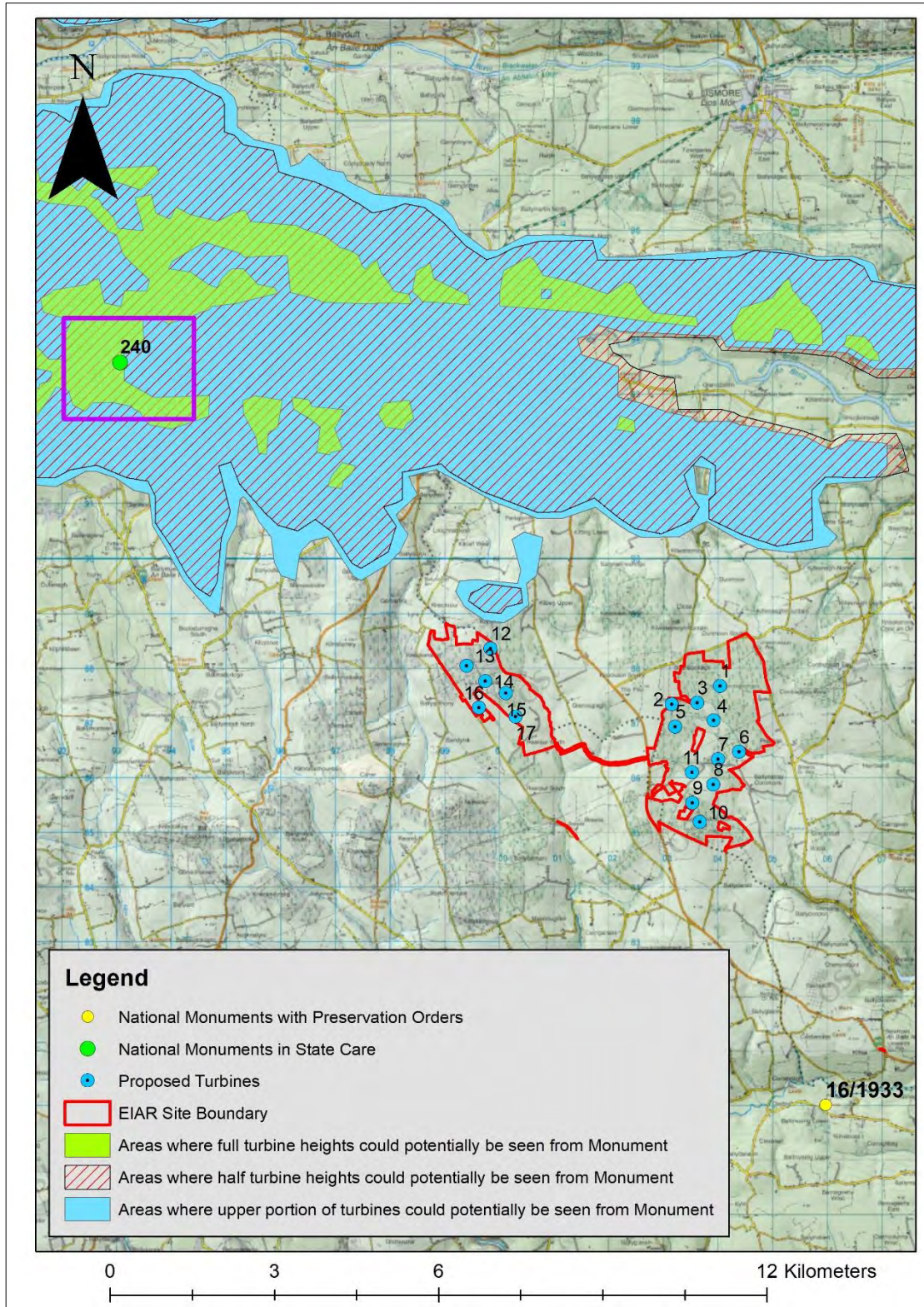


Figure 14.4: View shed results from NM 240. Note, wind farm area is not within viewshed from monument

### National Monument No. 286, North Abbey Dominican Friary, Youghal

Description of the Monument: On N side of Youghal, outside medieval walled town; remains of Dominican friary of Our Lady of Graces founded, according to Hayman (1855, 333), by Thomas Fitzmaurice Fitzgerald in 1268. Remains consist of 'west gable of the church with a three-light window' (Harbison 1977, 62; see photos O'Sullivan 1945, opp. 101; see drawing Hayman 1855, 335), also 'a



massive pier....its broken arches the junction of the nave and the continuation of the choir' (Hayman *ibid.*, 336); Harbison dates these features to 'shortly after the foundation' (*ibid.*). An ivory plaque with 'Madonna and Child' of c. 1300, now in Dominican Priory, Cork, belonged to this monastery (Flanagan and Hunt 1950, 1-14).

The viewshed results show that only four turbines T8-T11 may potentially be seen from approximately mid shaft to blade tip from this monument (Figure 14.5). The remainder of the turbines were not visible from this location in the viewshed results at the time.

The potential impacts are addressed in Section 14.4.5.

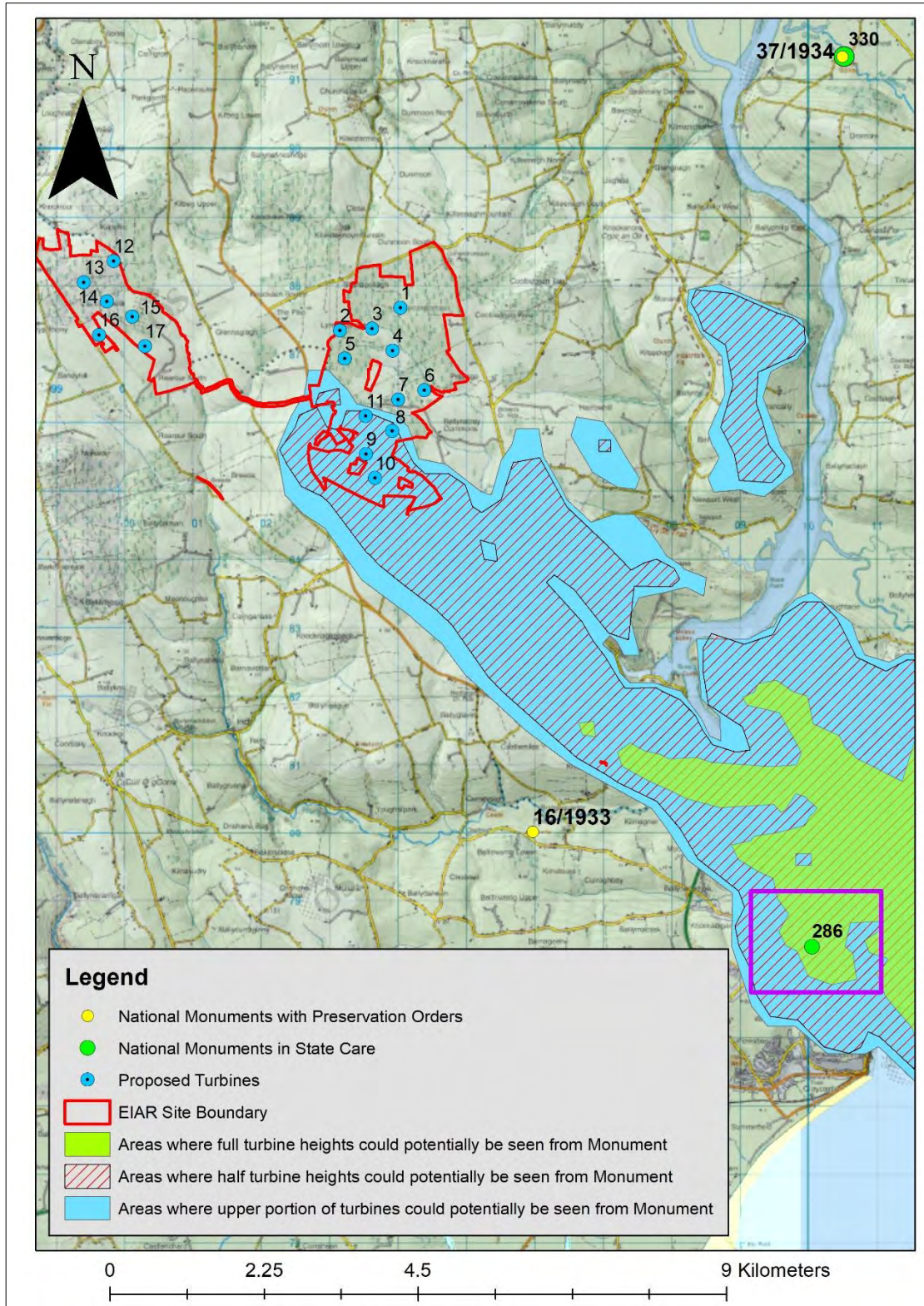


Figure 14.5: Viewshed results from NM 286.

### National Monument No. Preservation Order 16/1933, Tower House at Kilnatoora

Description of the Monument: Immediately S of sheer rock face (H c. 10m), at S edge of Tourig river valley; Cornaveigh Castle (CO067-005–) visible c. 800m to NW. Remains of 5-storey ivy-clad rectangular tower (14.5m N-S; 8.6m E-W); walls stand to wall-walk level except S wall, which has largely collapsed. Entered at ground level by door in S wall of which only lower jamb stones survive. This



gives access to lobby with vaulted roof, the outer part of which is collapsed; inner part covered by murder hole. The lobby gives access straight through to main chamber (8.13m N-S; 4.5m E-W), and E to small rectangular chamber with stair well at E end, in SE corner of tower, which rises as spiral stairs to top of tower, giving access to upper floors. In S wall of chamber at foot of stairwell is slit window with circular gun loop (diam. 0.2m) through sill. Main ground floor chamber lit by windows in E, N and W wall; square-set segmental-arched embrasures; single flat-headed lights in N and E windows; single ogee-headed light to W.

No door from stairwell to 1st floor level, this chamber probably entered by outer door in S wall, now fallen. Also largely fallen is smaller mural chamber in S wall at this level. Lintelled door survives in S wall of main chamber; this floor lit by central window in N wall; square-set embrasure covered by rounded arch, narrow flat-headed light. Rounded wicker-centred vault (axis N-S) covers main 1st floor chamber.

At 2nd floor level, small mural chamber in S wall entered from landing off spiral stairs; almost entirely fallen. Main 2nd floor chamber also entered from landing. Central square-set window embrasures, covered by segmental, wicker-centred vaults, in N and E wall; lights gone. Similar embrasure in centre of W wall with tall narrow flat-headed light; vault over embrasure collapsed but above it quarried flue visible, on S side of embrasure rough outline survives of circular opening resembling bread oven; it appears that light was blocked and embrasure used as fireplace. At S end of W wall lintelled door leads into base of straight mural stairway rising to N; stairs collapsed.

Main 3rd floor chamber entered via short mural passage from spiral stairs; mural passage lit by window with ogee-headed light. Central square-set window embrasure in N wall with flat-headed light. Central part of W wall collapsed revealing mural chamber entered from stairway at 2nd floor level; access to this chamber not gained but may contain garderobe (exit for garderobe chute near ground at N end of W wall). Again most of small mural chamber in S wall gone, as has similar chamber at 4th floor level. Rounded vault covers main 3rd floor chamber (axis N-S), small collapse at centre. Main 4th floor chamber probably entered from stairwell at SE corner but this area now very ruinous. Central square-set window embrasure in E and N wall: double ogee-headed light in E window, single ogee-headed light to N. Similar embrasure, with double ogee-headed light, near S end of W wall, missing mullion; N ingoing of embrasure much collapsed but straight mural stairs, now blocked, rise from here to L-shaped chamber in NW corner, now visible through broken opening in wall, probably containing a garderobe; Grose (Stalley 1991, 30) shows slit light for chamber at N end of W wall. Wall-walk not accessible but two chimney stacks atop W wall; part of battlements survive at E end of S wall. Coleman (1910, 181) and Healy (1988, 142) mention 'traces of bawn are still remaining...amongst them being one of the ruined angle turrets'; Grose (Stalley, *ibid.*), depicting site in early 19th century, shows a round corner tower to S of tower house, with short length of wall running N and longer length running W; not seen.

Built by branch of Fitzgeralds of Imokilly; in 1645 besieged by Lord Castlehaven who bombarded it and breached wall (Redmond 1918, 148), however it appears that much of the damage on S side of tower resulted from nearby quarrying for building stone in 19th century (Coleman 1910, 178-9). This monument is subject to a preservation order made under the National Monuments Acts 1930 to 2014 (PO no. 16/1933).

The viewshed analysis shows that theoretically there are no instances where the proposed turbines may be seen from the National Monument (Figure 14.6).

The potential impacts are addressed in Section 14.4.5.

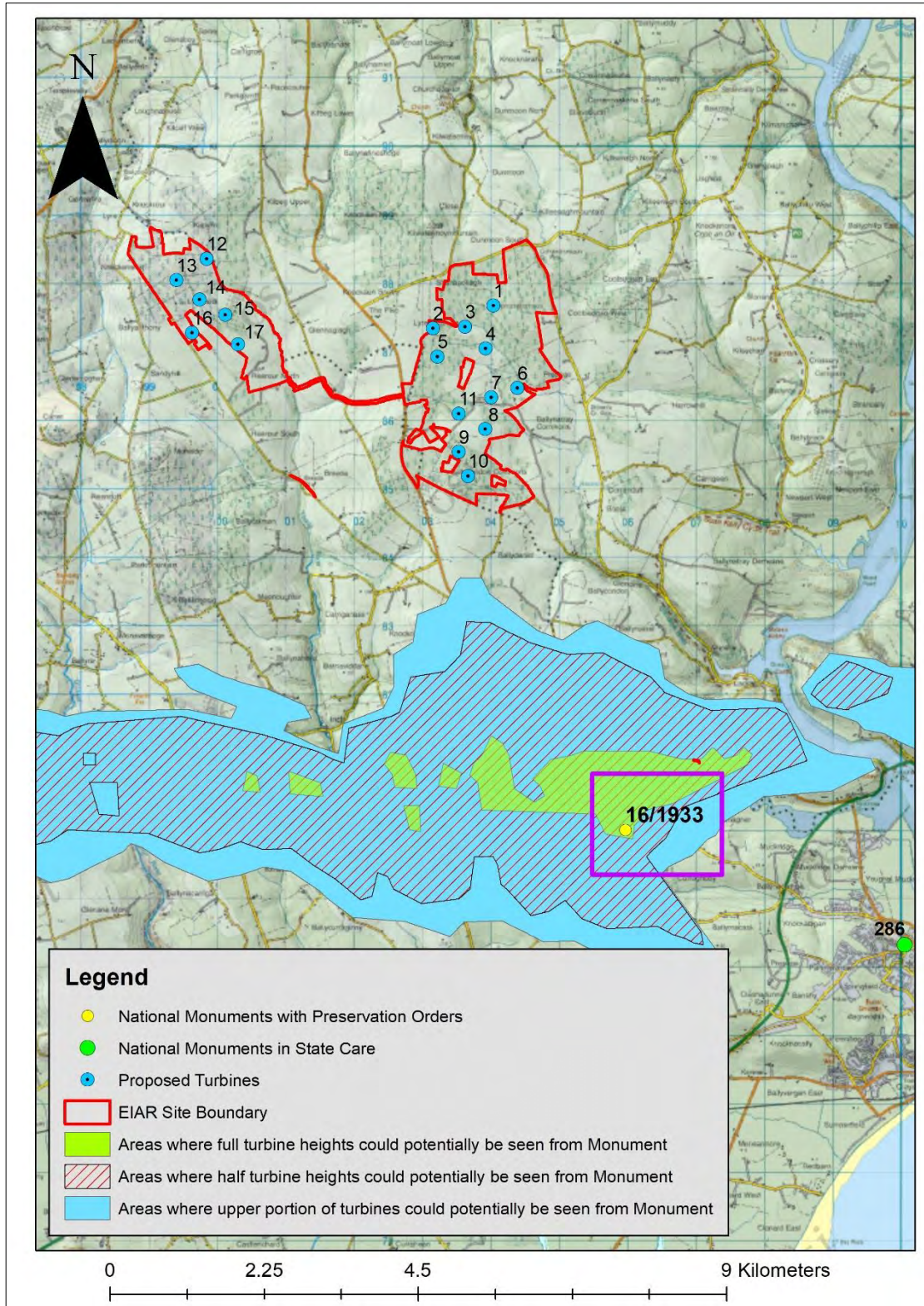


Figure 14.6: Viewshed analysis results from NM 16/1933.



### 14.3.2.2 Recorded Monuments within the EIAR Site Boundary

Three recorded monuments subject to statutory protection as defined in the Record of Monuments and Places or Sites and Monument Record are located within or on the EIAR site boundary for the Proposed Development. The monuments are listed in Table 14-3 below and described thereafter. Two of the monuments occur on the County bounds (Waterford/Cork) and therefore have both ‘Co’ and ‘WA’ RMP numbers. The sites were assessed as part of the EIAR and were subject to an on-site inspection. The potential impacts are addressed in Section 14.4.3.2.

Table 14-3: Recorded monuments within the Proposed Development site boundary.

MAP ID	RMP NO.	ITM E	ITM N	CLASS	TOWNLAND	TURBINE ID	DISTANCE (M)
45	CO055-012	600330	587409	Enclosure	Lyre Mountain	17	263
72 / 123	CO055-069 / WA033-016	600750	587446	Ford	Rearour North, Glennaglogh, Kilcalfmountain	17	569
83 /122	CO056-009 / WA033-014	602947	587130	Boundary stone	Breeda, Lyrenacarriga, Ballynatray Commons	5	277

#### 14.3.2.2.1 Descriptions of the Monuments within the Proposed Development Site Boundary

The descriptions in italics are extracts from the Sites and Monuments Record files on the National Monuments Service public Historic Environment viewer.

##### Map ID 45, RMP CO055-012

*‘In dense forestry. Shown on 1842 OS 6-inch map as circular enclosure (diam. c. 18m). Inaccessible’.*

The area of the enclosure is located in a clearance within a tract of coniferous forestry and was accessed as part of the field survey. The area, while accessible, was heavily overgrown and the monument was not readily visible.



Plate 14.76: View of clearance within which enclosure CO055-012 is located, looking WNW.

#### Map ID 72 / 123CO055-069 / WA033-016, Ford

‘Situated on the N-S Tourig stream, in a deep valley and at a point where a smaller stream joins it from the NNE. A ford is marked at this location on a Bateman map dated 1716. The area is extremely wet and overgrown, but there is no evidence of a fording point’.

This site is located at a remove from any proposed infrastructure and furthermore no visible surface trace survives.

#### Map ID 83 /122, RMP CO056-009 / WA033-014 Boundary stone

‘Marked ‘stone’ on Bateman map (1716-1717) at point where Cork-Waterford border changes direction. No visible surface trace’ (Archaeological Inventory of County Cork. Volume 2: East and South Cork). It is described as follows in the County Waterford Inventory: ‘Situating on a gentle E-facing slope of the relatively high ground around Kilwatermoy Mountain. It is also on the W-E county boundary with Cork at a point where the boundary changes direction to NNE-SSW. It is marked as a standing stone only on a 1716 Bateman map (NLI, MSS 6148-9). Nothing remarkable is visible at the location’.





*Plate 14.77: Recorded Monument WA033-014 boundary stone (site) located in overgrown inaccessible area on ELAR boundary looking West.*

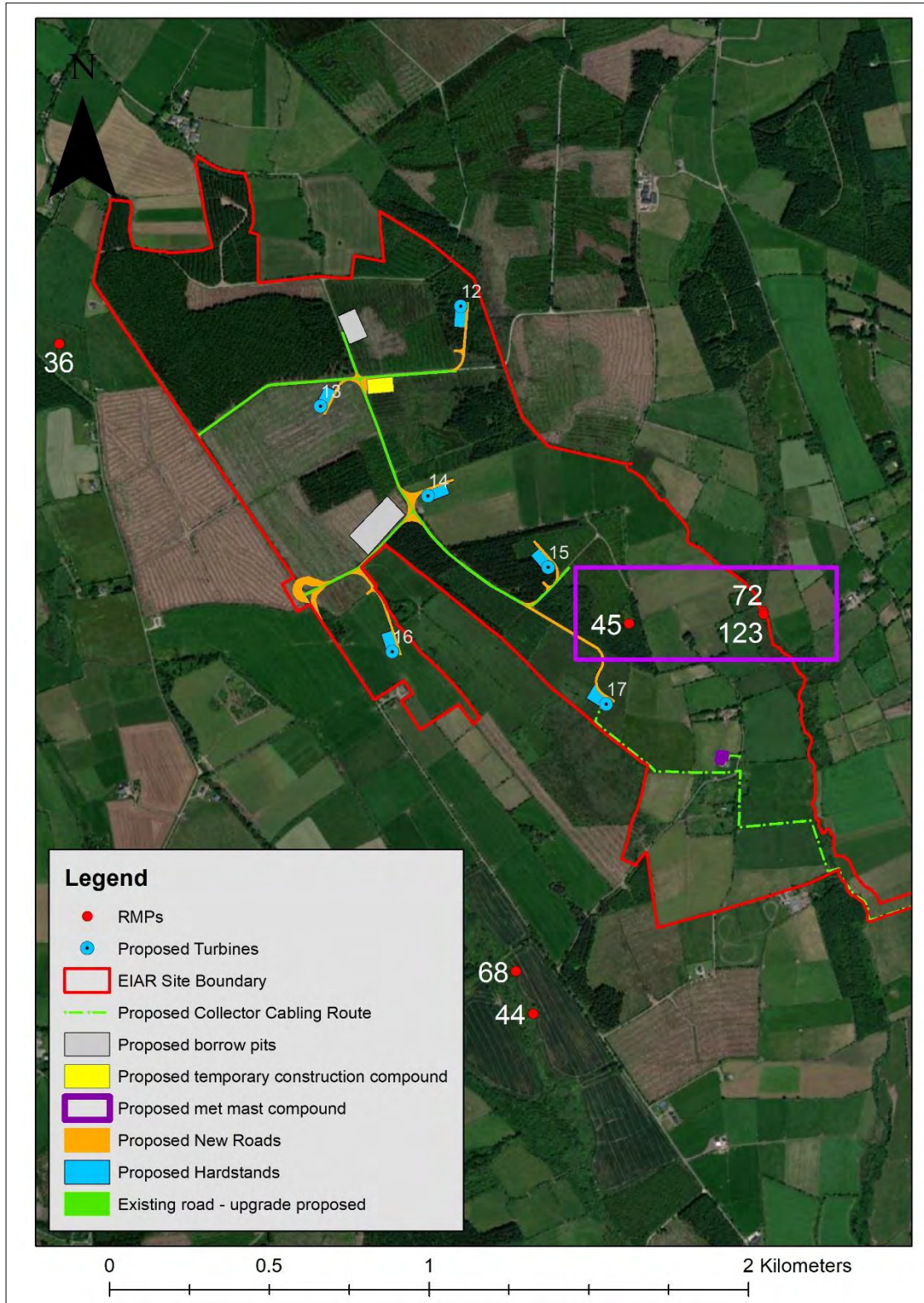


Figure 14.7: RMPs located at west side of site within the EIAR Site boundary.



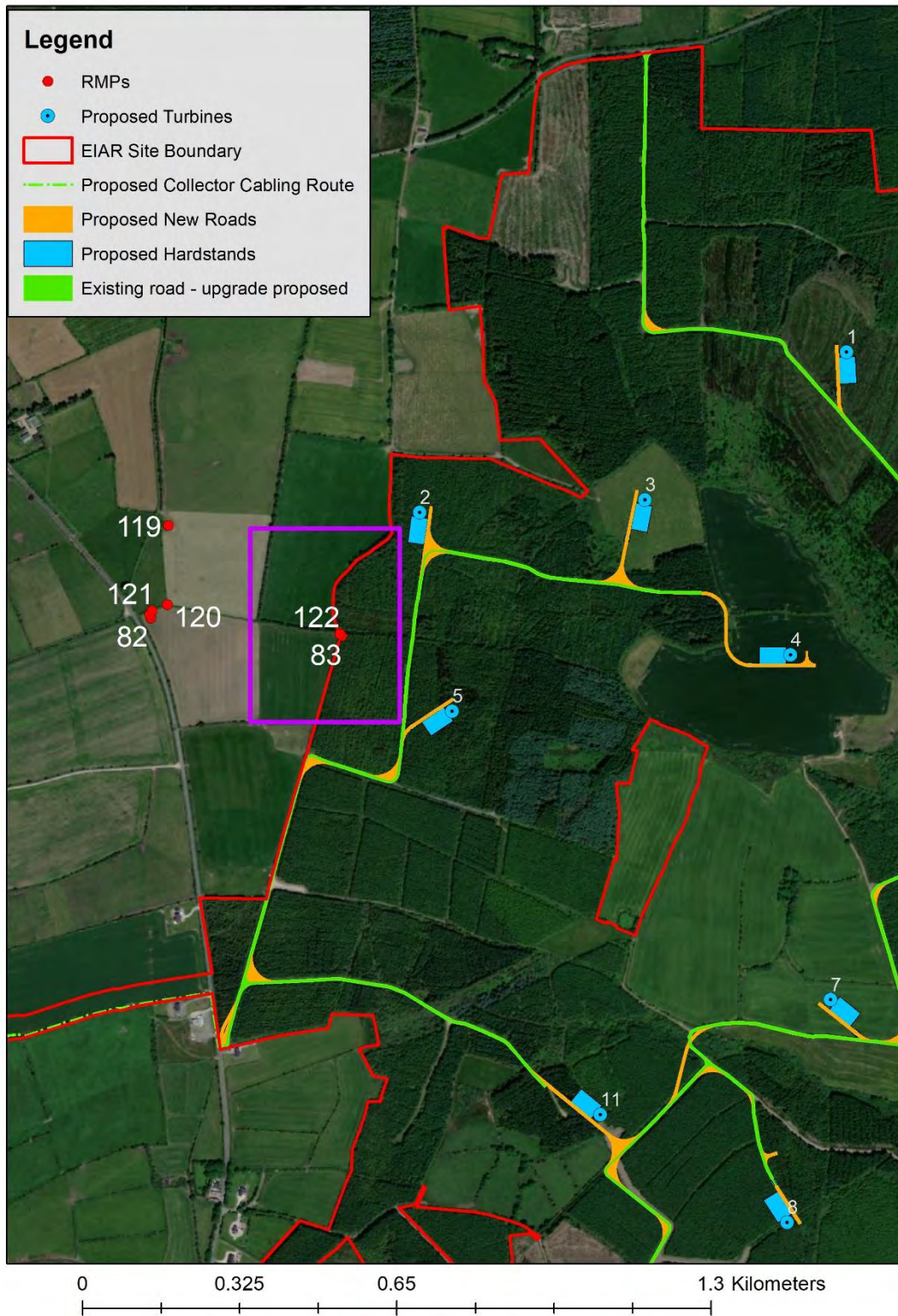


Figure 14.8: Location of RMP within eastern parcel of EIAR site boundary.

### 14.3.2.3 Recorded Monuments within 5km of the Proposed Turbines

One hundred and seventy (170) monuments are located within 5km of the nearest proposed turbines and these are detailed in Appendix 14-3. The methodology through which the distance of 5km was selected is described in Section 14.2.5. The monuments are labelled from 1-170 (Map ID) for ease of reference on



Figure 14.9. Monuments within 5 kilometres of the proposed turbines are included here for purposes of assessing potential visual impacts in the wider landscape setting. Direct and Indirect effects are addressed in Section 14.4 below.

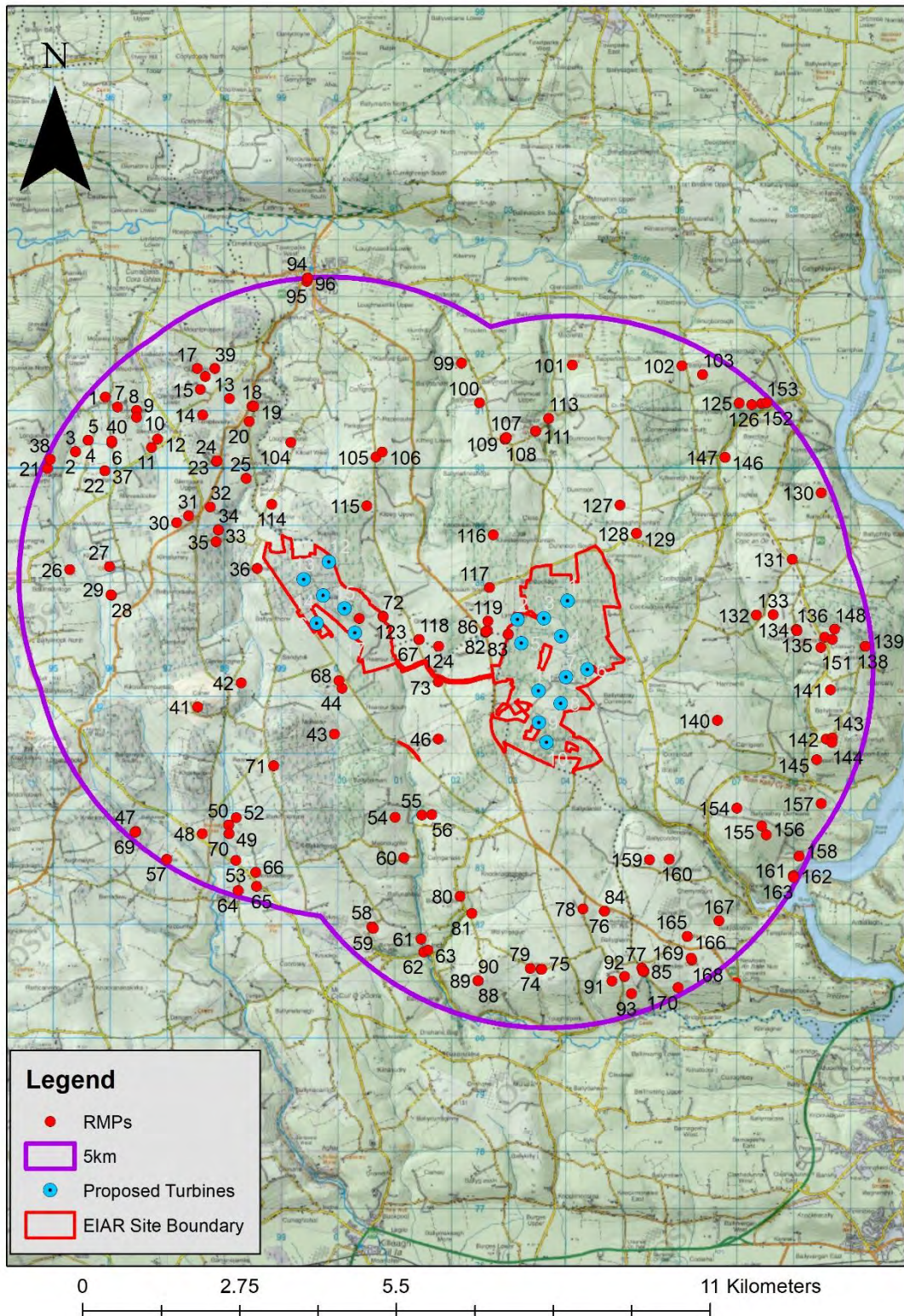


Figure 14.9: RMPs within 5km of the nearest proposed turbines.



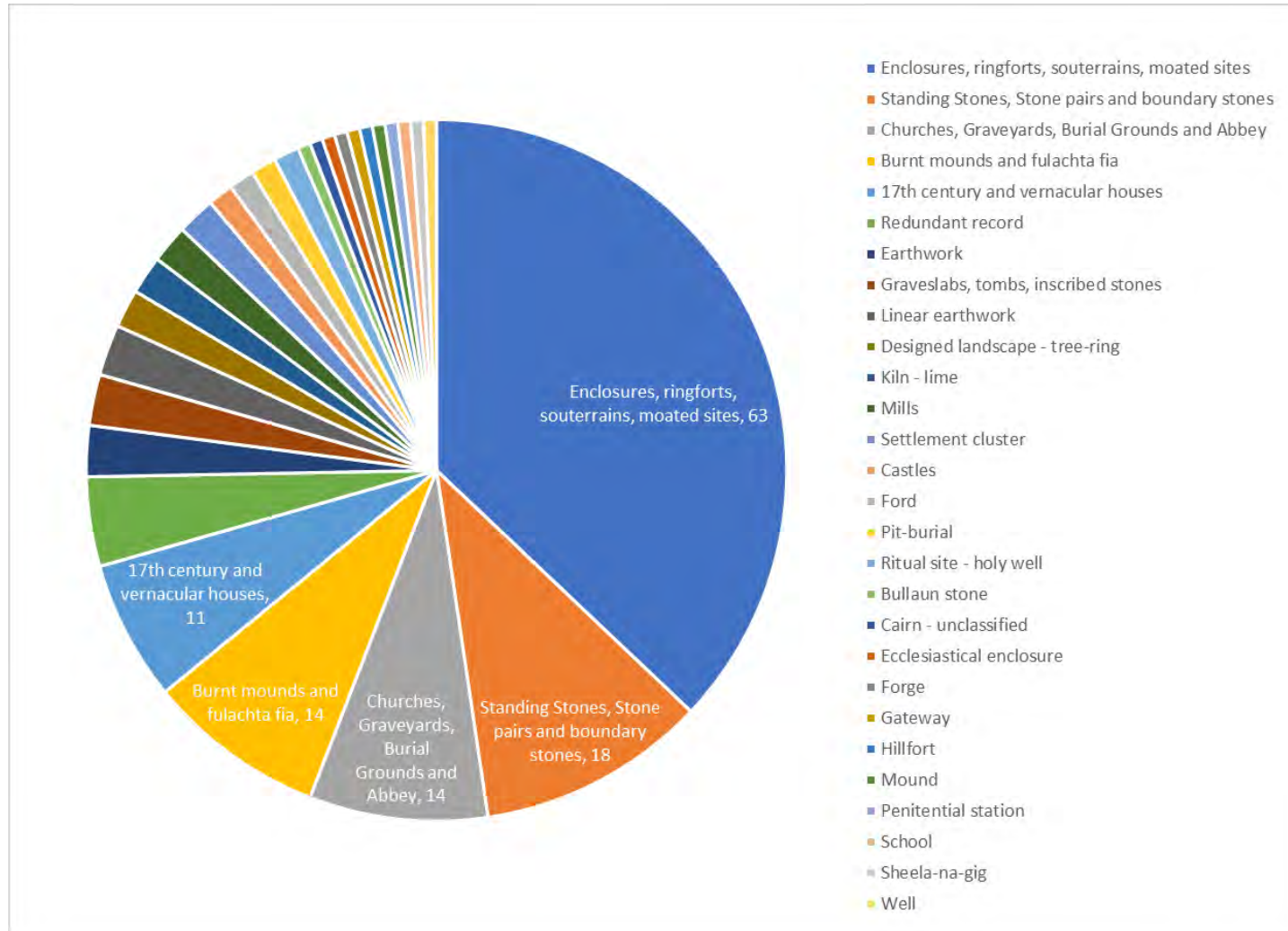


Figure 14.10: Monument types within 5km of the nearest proposed turbines.

#### 14.3.2.3.1 **The Prehistoric Period**

The prehistoric period is represented within the 5km study area which contains a number of standing stones, fulachta fia, standing stone pairs, and boundary stones. Fulachta fia and burnt mounds, low visibility monuments, account for 14 monuments within the 5km study area. 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.

Fourteen standing stones and pairs are distributed within the 5km study area. The Zone of Theoretical Visibility suggests that 13-17 turbines may be visible from the majority of locations where standing stones and pairs are located. 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 14.4 below.

#### 14.3.2.3.2 **The Early Medieval Period**

The majority of monuments (62) within 5km of the proposed turbines consist of those which may be definitively attributed to the Early Medieval period (ringforts, enclosures and souterrains) with one medieval moated site located within 5km. The majority of such monuments are located in areas where the ZTV shows would have some visibility in the direction of the turbines, again based on a model which does not include existing natural screening, vegetation or boundaries.

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.

Impacts are addressed in Section 14.4 below.

#### 14.3.2.3.3 **Sites with Religious or Ritual Association**

Twenty-one monuments within 5km of the Proposed Development site have religious associations and include Burial grounds, Graveyards, Churches, an Abbey, Ecclesiastical Enclosure, Holy wells as well



as structures such as tombs, graveslabs etc. Holy wells may have their origins in prehistory but are associated with devotions from the medieval period (5th-16th centuries AD) onwards.

Impacts are addressed in Section 14.4 below.

#### 14.3.2.4 **Topographical Museum Files**

A Looped Bronze Spearhead is registered in the Museum database (2010) for the townland of Kilwatermoymountain which is located between the parcels of land (Register number P.1948:170).

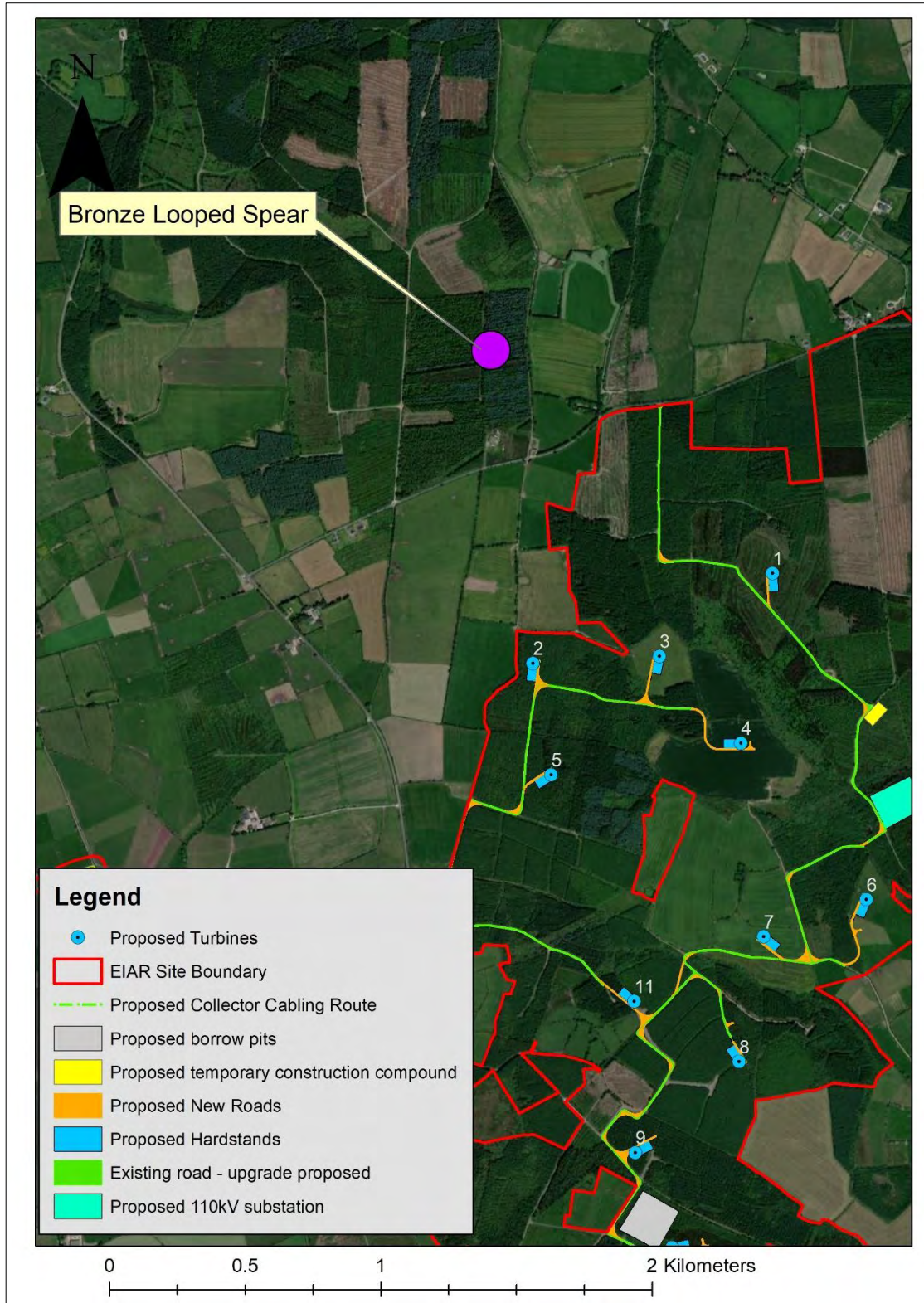


Figure 14.11: Museum find spot to the north-west of eastern parcel.

### 14.3.2.5 Potential Sub-surface Archaeology

No new sites were encountered within the area of the proposed turbines, roads and other infrastructure, however, it is possible that previously unknown sub-surface archaeological finds, features and deposits may be present not currently visible above ground. The likelihood within forested areas is regarded as low due to the planting process and drainage that has occurred. Sub-surface archaeological potential in



green areas is considered to be medium, however, where land has not been subject to ground disturbance. The potential for encountering sub-surface archaeology along the cable route is addressed in section 14.3.4.2. Potential impacts and mitigation measures are addressed below in section 14.4.3.3.

### 14.3.3 Architectural and Cultural Heritage – Wind Farm Site

#### 14.3.3.1 Protected Structures and NIAH

No built heritage structures which are subject to statutory protection or otherwise are located within the EIAR site boundary.

#### 14.3.3.2 Protected Structures and NIAH within 5km of the Nearest Proposed Turbines

The RPS for County Cork, as well as any additions was obtained as a dataset on ArcGIS online (from Cork County Council) and added to the project base mapping. Structures within 5km are included here (See Section 14.2.5 above for distance criteria). No digital datasets for the RPS are available for County Waterford and no locational information such as coordinates are included in the RPS document on Waterford County Council website. Since the RPS for County Waterford are largely based on the NIAH records, this source will be utilised for County Waterford.

RPS structures in County Cork within 5km of the nearest proposed turbine are detailed in Table 14-4 and are also represented on Figure 14.12. NIAH for both Waterford and Cork are detailed in Table 14-5 and represented on Figure 14.13. The distances to the relevant turbines are also detailed. The nearest architectural heritage structure is located 742m to Turbine 1 and consists of a thatched farmhouse (NIAH 22903408 at Coolbeggan West (Map ID1). It is located outside the EIAR boundary and therefore no direct impacts will occur.

Table 14-4: RPS structures County Cork within 5km of the nearest proposed turbines.

MAP ID	RPS ID	NAME	ITM E	ITM N	TURBINE ID	DISTANCE (M)
1	356	Mountprospect House	597234	592585	12	4910
2	358	Roman Catholic Church	597143	590659	13	3397
3	359	Templevalley House & Offices	597651	590304	13	2801
4	365	Inch Roman Catholic Church	601552	581559	10	4215
5	1111	Thatch House	600553	581993	10	4461
6	1112	Thatch House	598163	583174	16	4399
7	1160	Thatch House	598483	591129	12	3030
8	1251	Thatch House	598588	582694	16	4746
9	773	Thatch House	599994	583222	17	3943
10	713	Thatch Cottage	599764	583280	17	3908
11	1157	Thatch House	602078	582310	10	3303

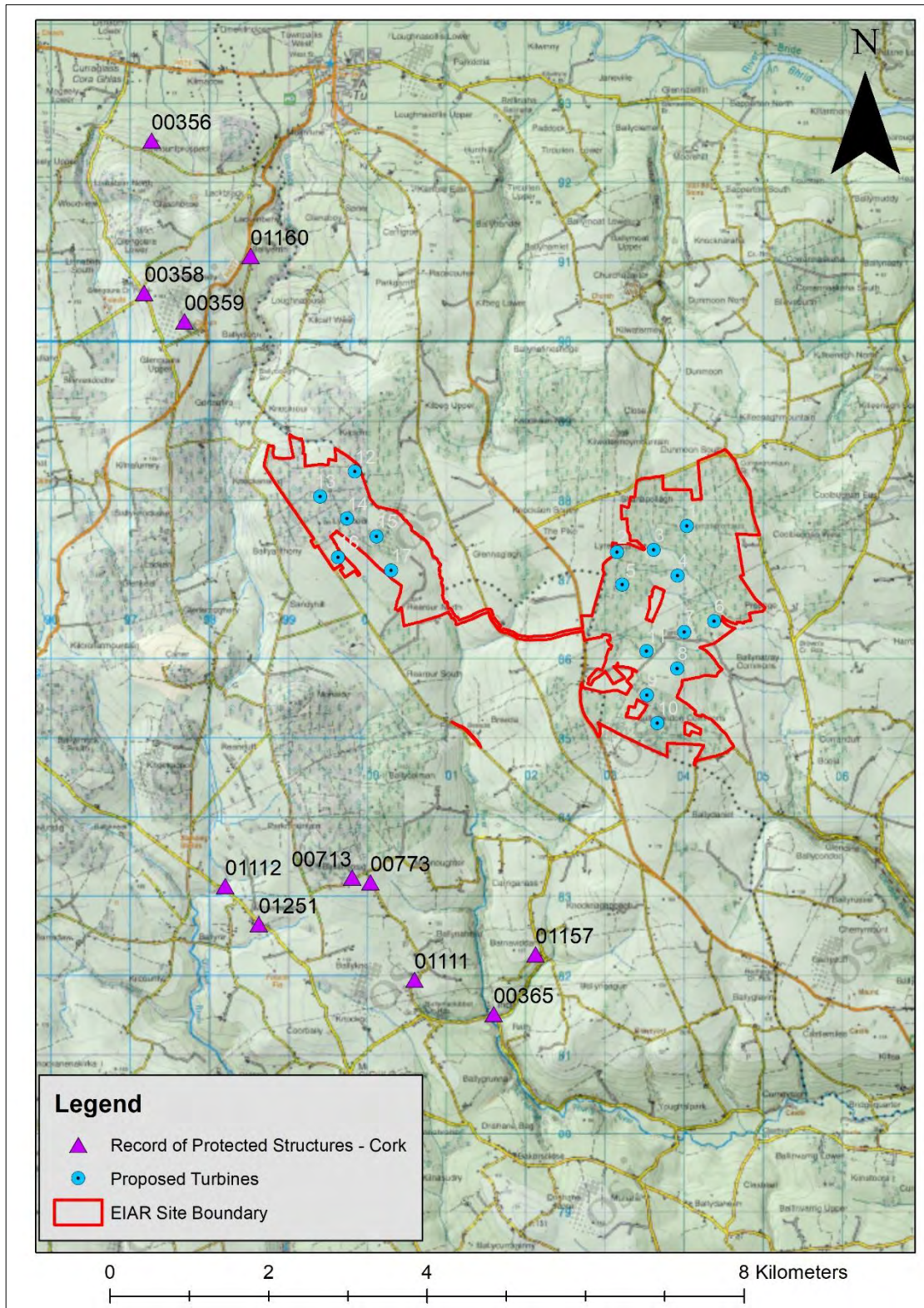


Figure 14.12: Record of Protected structures (Cork) within 5km of the nearest proposed turbine.



Table 14-5: NIAH structures within 5km of the nearest proposed turbines.

MAP ID	NIAH REG	TOWNLAND	TYPE	ITM E	ITM N	TURBINE ID	DISTANCE (M)
1	22903408	Coolbeggan West	Farm House	604699	587492	1	742
2	20905601	Ballydaniel		602968	584812	10	776
3	20905506	Sandyhill	Country House	599762	586226	17	1055
4	22903304	Kilcalfmountain	Gates / Railings / Walls	600595	589683	12	1506
5	20905508	Monaloo	House	599546	585748	17	1579
6	22903303	Knockaun South	Building Misc	601521	588250	15	1589
7	22903301	Kilbeg Upper	House	600685	589925	12	1759
8	20904618	Templevally	House	597720	590291	13	2748
9	20904618	Templevally	House	597656	590294	13	2790
10	20905603	Ballydaniel		604250	582359	10	2938
11	22903302	Churchquarter (Cos. By.)	Church/Chapel	603636	590809	1	3112
12	20905602	Barnaviddane	House	602084	582303	10	3306
13	22903407	Dunmoon North	House	604689	590968	1	3324
14	20904617	Glengoura Lower	Church/Chapel	597144	590660	13	3397
15	22903719	Garryduff (Cos. By.)	Milestone /Milepost	605149	582137	10	3450
16	22823002	Knockanore (Cos. By.) Kilcockan Par.	Church /Chapel	607458	589060	1	3717
17	20905527	Barnaviddane	House	601661	582034	10	3750
18	22902812	Kilmore East		600843	592023	12	3767
19	22823003	Knockanore (Cos. By.) Kilcockan Par.		607623	588830	1	3797

MAP ID	NIAH REG	TOWNLAND	TYPE	ITM E	ITM N	TURBINE ID	DISTANCE (M)
20	22902802	Kilmore East	House	600841	592081	12	3823
21	22823001	Glengoagh	Presbytery /Parochial/ Curate's House	607466	589472	1	3892
22	20905513	Ballinteosig	House	599764	583279	17	3908
23	22902813	Kilmore East	Gate Lodge	601001	592192	12	3975
24	20905604	Ballyneague	House	603341	581255	10	3985
25	20905528	Barnaviddane	Church/ Chapel	601550	581559	10	4216
26	22903714	Ballynatray Demesne		607660	583811	10	4280
27	22902803	Townparks East	House	599911	592762	12	4361
28	22902804	Townparks East	House	599883	592777	12	4375
29	20905512	Ballyre	House	598155	583175	16	4401
30	20905526	Ballinteosig		600580	581970	10	4459
31	20905524	Ballinteosig	House	600545	581984	10	4472
32	22818069	Townparks East	House	599602	592916	12	4518
33	22818068	Townparks East	House	599598	592922	12	4524
34	22818067	Townparks East	House	599592	592928	12	4531
35	22903718	Ballynatray Demesne	Gates/ Railings / Walls	607677	583204	10	4533
36	22818066	Townparks East	House	599587	592935	12	4538
37	22818065	Townparks East	House	599581	592941	12	4544
38	22818051	Townparks East	House	599577	592946	12	4550



MAP ID	NIAH REG	TOWNLAND	TYPE	ITM E	ITM N	TURBINE ID	DISTANCE (M)
39	20904619	Booldurraghera South	House	594869	589152	13	4620
40	22903406	Kilmanicholas	Farmyard Complex	607869	590328	1	4674
41	22818063	Tallow	Workshop	599503	593111	12	4718
42	22903715	Ballynatray Demesne		608436	584157	6	4727
43	22903711	Ballynatray Demesne	Farmyard Complex	607930	583262	10	4736
44	22818050	Tallow		599477	593129	12	4738
45	22818064	Tallow		599501	593159	12	4766
46	20905523	Monavarnoge	House	598565	582677	16	4767
47	22903712	Ballynatray Demesne	House	608051	583234	10	4858
48	22818049	Townparks East	House	599317	593281	12	4904
49	20904615	Mountprospect	House	597231	592587	12	4912
50	20905522	Monavarnoge		598207	582618	16	4915
51	22818048	Tallow, Townparks West (Cos. By.) Tallow Par.	Bridge	599359	593326	12	4944

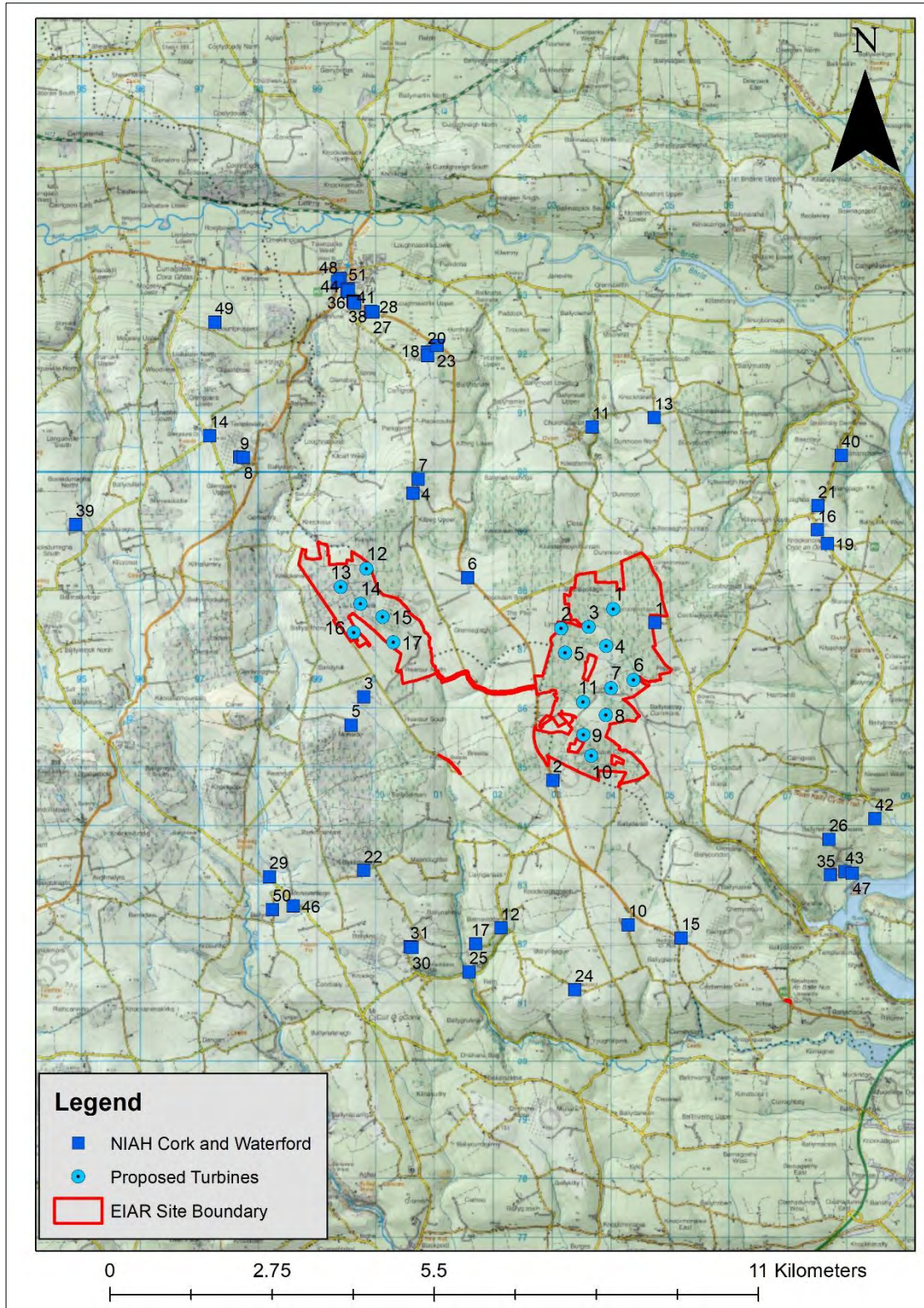


Figure 14.13: NIAHs within 5km of the proposed turbines.

### 14.3.3.3 The Gaeltacht

The nearest Gaeltacht is located over 16km to the east and therefore no impacts will occur in this regard.



### 14.3.3.4 Cartographic Evidence

#### 14.3.3.4.1 1<sup>st</sup> and 2<sup>nd</sup> Edition 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 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. Within the western parcel of land, Lyremountain townland is largely open mountainous terrain on both the 1<sup>st</sup> and 2<sup>nd</sup> Edition OS maps. The remainder of this parcel appeared to have been enclosed fields with a number of small settlements located therein. The eastern parcel of land appears to have been heavily enclosed with small fields and settlements on both OS editions with exception of Coolbeggan West which seems to have been open mountainous land.

A small overgrown settlement is located outside the EIAR boundary to the north of T16 (at ITM E599629, N587451). Its associated historic access road as shown on the 2<sup>nd</sup> Edition 25inch OS map is partly within the EIAR boundary. Part of the historic road will be utilised as the new access road to T16 and therefore direct impacts are anticipated. Impacts to the southwestern side of the access road will occur. The south-western portion of the access road comprises a largely denuded boundary of trees. The north-eastern section of the passageway (which is also a townland boundary) consists of a well-preserved stone wall. The latter will be preserved in situ during construction.

Impacts and mitigation measures are addressed in Section 14.4.3.6 below.

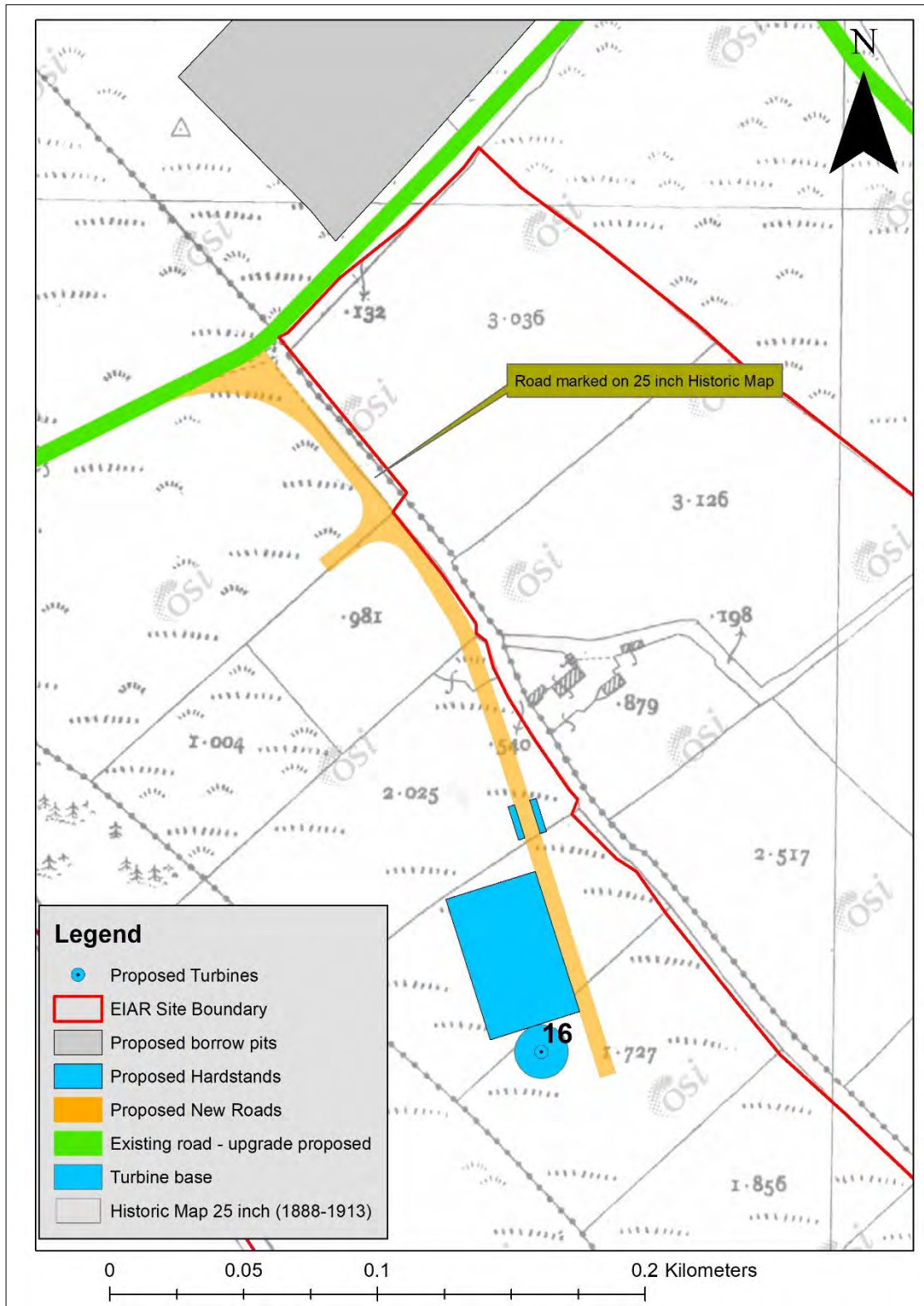


Figure 14.14: Historic passageway proposed to be utilised as part of the new access road to T16.

### 14.3.3.5 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.

There are a number of townland boundaries that are proposed to be crossed by proposed new roads and these include those detailed in Table 14-6. Townland boundaries are not subject to statutory protection but represent local cultural heritage merit.

Impacts and mitigation measures are addressed in Section 14.4.3.6.2.

Table 14-6: Townlands within the Proposed Development.

Townland Name	Meaning
Propoge – Prapóg <a href="https://www.logainm.ie/50685.aspx">https://www.logainm.ie/50685.aspx</a>	Meaning Unclear.
Ballynatray Commons - Coimín Bhaile Na Trá <a href="https://www.logainm.ie/50670.aspx">https://www.logainm.ie/50670.aspx</a>	Baile Townland, Town, Homestead Coimín Commonage, Common Land; Little Hollow, Glen Trá Strand, Beach
Ballycondon Commons - Coimín Bhaile An Chondúnaigh <a href="https://www.logainm.ie/50667.aspx">https://www.logainm.ie/50667.aspx</a>	Baile Townland, Town, Homestead Coimín Commonage, Common Land; Little Hollow, Glen
Breeda - Na Briada <a href="https://www.logainm.ie/13569.aspx">https://www.logainm.ie/13569.aspx</a>	The Breeds Or Bridget’s Ford Or Field

### 14.3.3.6 County Boundaries

The county boundary follows the western EIAR boundary within the eastern parcel of land. It also follows the eastern EIAR boundary of the Kilcalf parcel of the land at the west. An interesting feature is located between the two parcels of the land and is subject to statutory protection by inclusion in the Record of Monuments and Places (CO055-054) and consists of a large linear earthwork which follows the County bounds through agricultural land. It is not located within the EIAR Boundary although

stops short of the EIAR boundary to the east (Kilcalf western section) before the county bounds turn north.

It is described in the Archaeological Inventory of County Cork as follows: 'Section of Cork-Waterford border (L c. 1km), bounded on Waterford side by Glennaglogh townland, marked on Bateman map (1716-1717) as 'an auld ditch'. Shallow drain noted on Waterford side of field fence to W of Tallow-Youghal road'.

Although the earthwork will not be impacted by the Proposed Development, it demonstrates the importance of boundaries and their origins in pre-historic / medieval times.



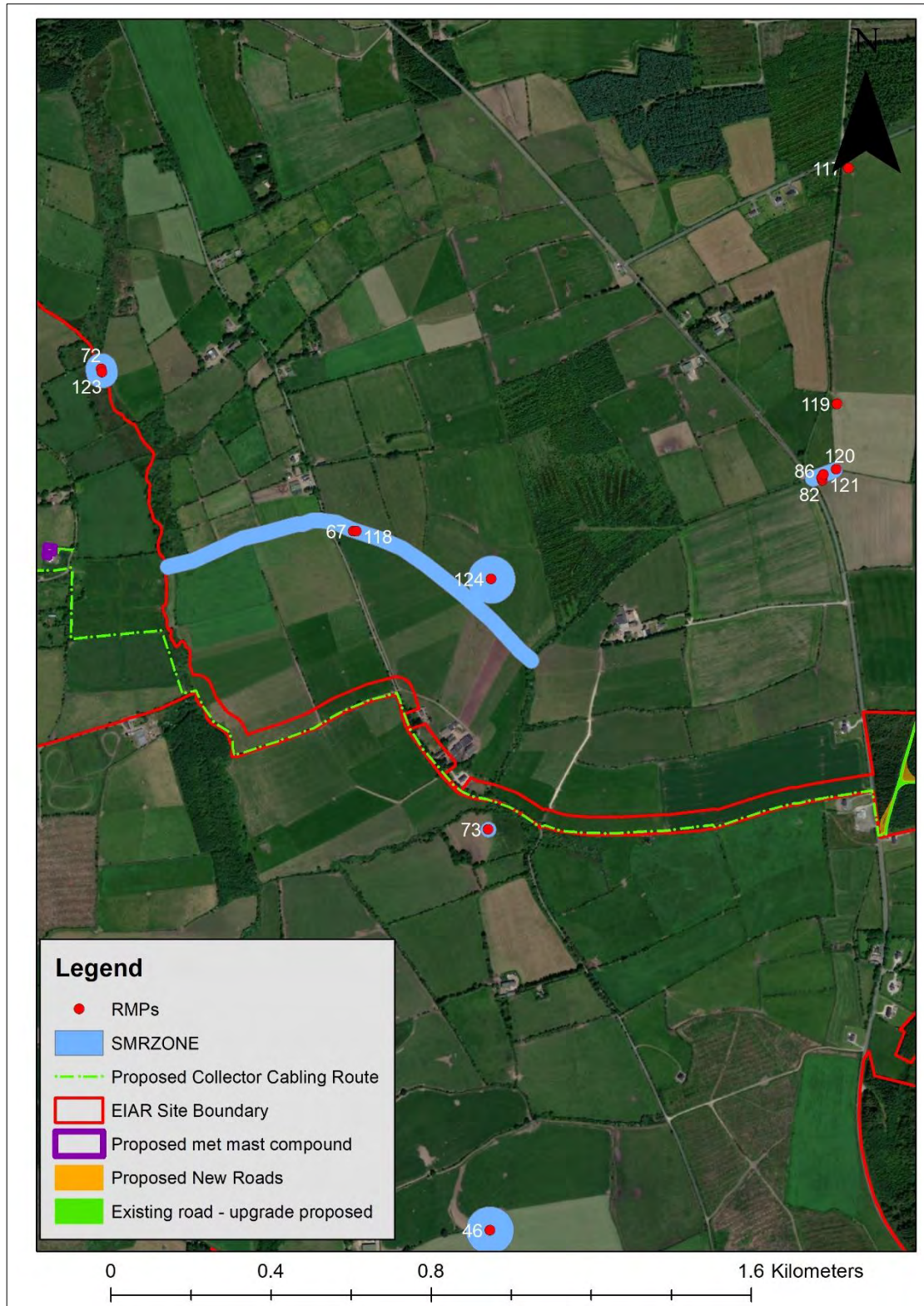


Figure 14.15: Monument (map ID 67 / 118) shown along County Bounds and Monument Standing Stone (map ID 73) shown to south of cable route.

### 14.3.4 Proposed Collector Network Cable Route

It is proposed to connect the two clusters via underground cabling located within existing agricultural land and within the public road corridor. The cabling route measures approximately 3.3 km.

It is proposed to construct a 110 kV substation within the site and to connect from here via a 110kV loop-in connection to the existing 110kV network which runs through the site. The electrical substation will have 2 no. control buildings, battery containers, associated electrical plant and equipment, and wastewater holding tank.

The grid connection cable route traverses the following townlands mainly through agricultural farmland: Lyremountain, Breeda And Rearour North. The route was subject to a full walkover survey. It is described in Section 14.3.1.4 above.

#### 14.3.4.1 Recorded Monuments

All recorded monuments within 100m either side of the proposed grid connection were considered in the assessment. Only one monument is located within this corridor however. No information pertaining to the monument at Breeda townland is available on the Historic Environment Viewer. The monument consists of a standing stone (CO055-070) in a field of pasture. The stone is not depicted on either the 6inch historic or the 25inch OS maps. The distance from the proposed grid connection route is such that no impacts are anticipated. Furthermore, the monument is located adjacent to a section of the cable route which is located on a public road and is located outside the EIAR site boundary (See Figure 14.15 above).



Plate 14.78: Standing Stone CO055-070 in pasture field looking south from public road.

Table 14-7: RMPs within 100m of the proposed grid connection cable route.

Map_ID	SMRS	ITM_E	ITM_N	CLASSDESC	TLAND_NAME	Distance
73	CO055-070	601717	586295	Standing stone	BREEDA	83m to grid route

#### 14.3.4.2 Sub-surface Archaeology

No new sites that were previously unrecorded were noted during field inspection along the cable route. An area of archaeological potential was identified along the cable route located adjacent to the river at the boundary of Rearour North and Breed townlands, County Cork. It is described in Section 14.3.1.4 above. Fulacht fia are often situated near to water sources and are often not visible on the surface of a pasture field. The potential for the area of the proposed cable route to contain as yet unrecorded sub-



surface sites and artefacts is medium within the green-field sections of the proposed development. Impacts and mitigation are address below in Section 14.4.3.3.

#### 14.3.4.3 **Built Heritage**

There are no built heritage structures subject to statutory protection or otherwise located along the proposed cable route.

#### 14.3.4.4 **Cultural Heritage**

The proposed cable route crosses a number of townland boundaries (Ballynatray Commons, Lyremountain, Breeda And Rearour North). Small sections of boundaries will be removed to facilitate the excavation of the grid connection cable route.

Impacts and mitigation measures are addressed in Section 14.4.3.6.

### 14.3.5 **Proposed Haul Route**

#### 14.3.5.1 **Proposed road widening at Lombards' Cross Roads**

A short section of road widening is required at Killea townland on the south side of the public road. This section measures approximately 80m in length East-West. No new sites were encountered within the area of the proposed road widening corridor, however, it is possible that previously unknown sub-surface archaeological finds, features and deposits may be present not currently visible above ground. Sub-surface archaeological potential in green areas is considered to be medium where land has not been subject to ground disturbance. Potential impacts and mitigation measures are addressed below in section 14.4.3.3.

#### 14.3.5.2 **Proposed new road at Breeda and Rearour South townland**

A new section of road will be constructed through pastureland in order to avoid a sharp bend in the public road to the east of Breeda Bridge. The new section of road measures approximately 300m. There are no known archaeological or architectural heritage constraints located along the route or adjacent to same.

No new sites were encountered within the area of the proposed road, however, it is possible that previously unknown sub-surface archaeological finds, features and deposits may be present not currently visible above ground. Sub-surface archaeological potential in green areas is considered to be medium where land has not been subject to ground disturbance. Potential impacts and mitigation measures are addressed below in section 14.4.3.3.

## 14.4 **Likely Significant Effects and Associated Mitigation Measures**

### 14.4.1 **Do Nothing Scenario**

The do-nothing scenario seeks to describe the consequences that are reasonably likely to occur without the proposed project. If the Proposed Development were not to proceed, the site would continue to be managed as an existing commercial forest, with some agricultural farmland. This land-use will also continue if the Proposed Development does proceed. The impact of this is considered neutral in the context of the EIAR.

## 14.4.2 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 14.4.4 below. No indirect effects were identified which would occur at the construction stage.

## 14.4.3 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 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), testing, monitoring, etc.

### 14.4.3.1 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 EIA site boundary and therefore no direct impacts on these aspects of the archaeological resource are identified. Indirect Operational effects are addressed in Section 14.4.4 below.

### 14.4.3.2 Recorded Monuments within the EIA site boundary (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 or on the EIA site boundary for the Proposed Development. They are situated away from the proposed infrastructure (including hardstands, turbine bases, construction compounds, borrow pits, new roads and the proposed substation). The monuments have been designed out of the proposed site layout and therefore they have been mitigated by avoidance. No construction effects will occur in this regard. Protective buffer zones around each monument is required as mitigation however and this has been incorporated into the Construction and Environmental Management Plan (CEMP) – see Appendix 4-4 of this EIA. (The statutory SMR zones surrounding the monuments will act as buffer zones).

#### Pre-Mitigation Impact

There will be no direct effects to the known cultural heritage resource as a result of the construction activities. Three recorded monuments are located within the EIA site boundary and in order to protect these monuments or sites of the monuments from accidental damage, the following is required:

#### Proposed Mitigation Measures

Establish a protective buffer zone around the recorded monuments (listed in Table 14-3 above) and as depicted on Figure 14.16 and Figure 14.17 below.

#### Residual Impact

No residual Impacts will occur once the mitigation measures are implemented.



### Significance of Impacts

The construction stage will not have any significant direct effects on recorded monuments within the EIAR site boundary. The significance of effects is considered to be imperceptible.

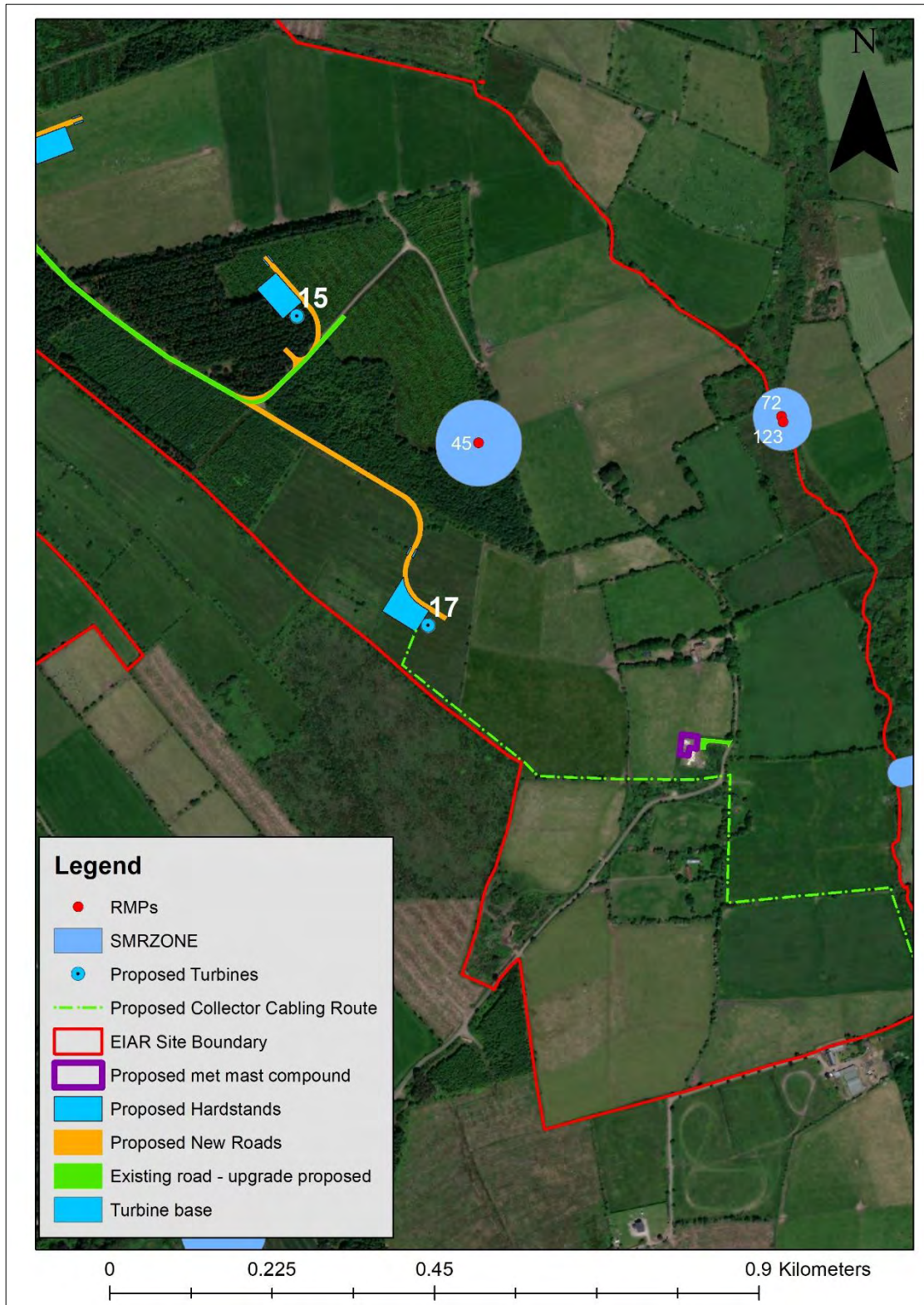


Figure 14.16: Protective buffer zones around RMPs within the EIAR site boundary.

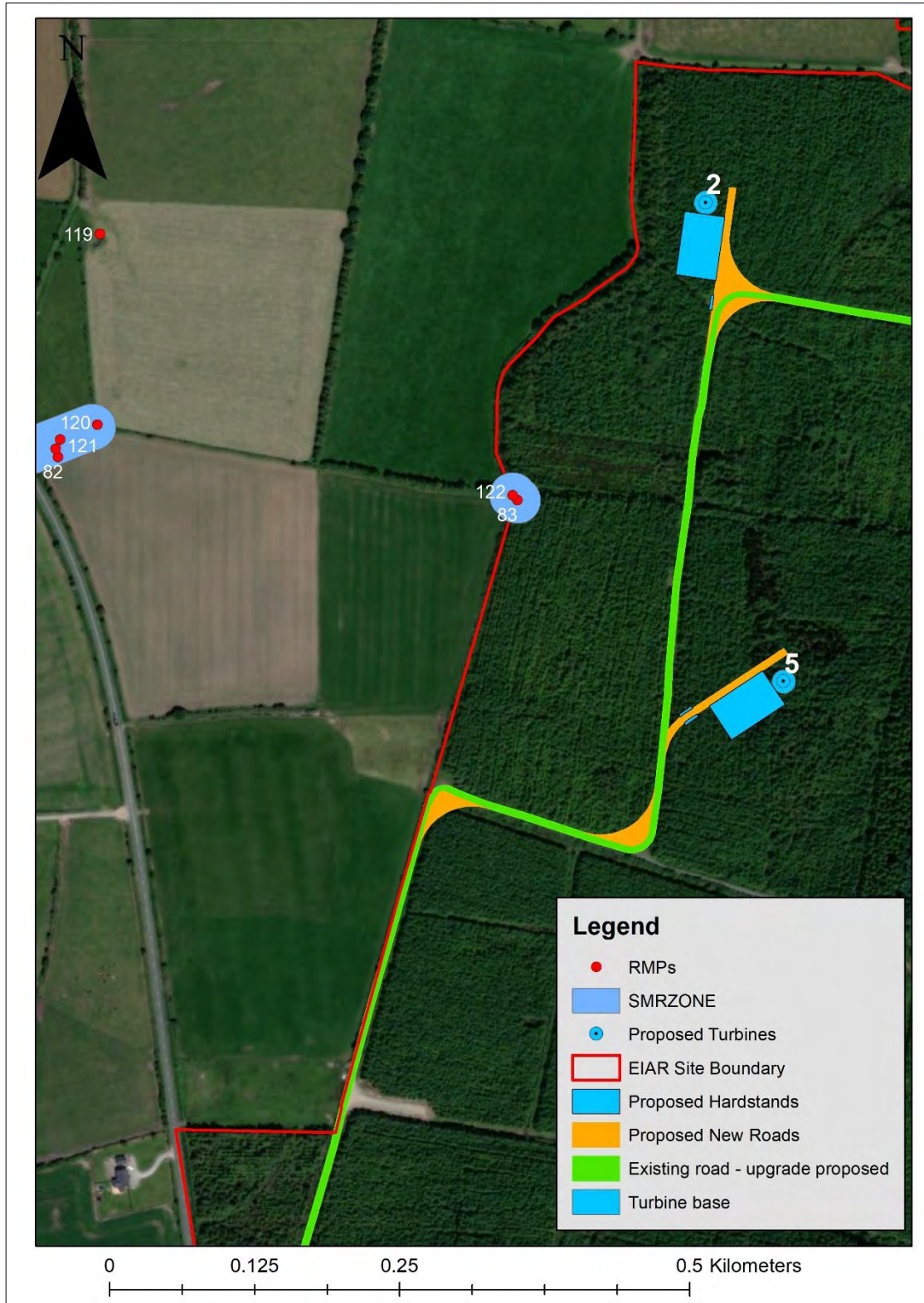


Figure 14.17: Protective buffer zones around RMPs within the EIAR site boundary (eastern parcel)

### 14.4.3.3 Previously unrecorded sub-surface archaeological features

The Proposed Development site is partially located within a commercial forest with numerous existing roads. The proposed grid connection cable route, however, is located within pasture and agricultural farmland as well as some sections on the public road. The junction accommodation areas along the



haul route are also in green field pastureland. The potential for the development area to contain as yet unrecorded sub-surface sites and artefacts is likely to be low within the forested section of land and medium within the green-field sections of the proposed development. Greenfield sections of land include Turbines 3, 4, 6, 7, 14, 16 and 17 as well as the proposed grid connection cable route (excluding sections on public roads). The excavation of topsoil for the new turbine bases, hardstands, and sections of roads and cable route where they are located on undisturbed ground and green fields may impact on any new sub-surface sites, if present. The section of cable route adjacent to the stream is also regarded as an area of archaeological potential given the preference for such locations for monuments such as fulachta fiadh.

### 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) in the absence of any mitigation.

### Proposed Mitigation Measures

- Pre-development licensed archaeological testing of the following:
  - Proposed cable route in greenfield areas
  - Turbines/Hardstands for T3, T4, T6, T7, T14, T16 and T17
  - New roads where they are proposed in green fields
  - Proposed new road along haul route
- Archaeological monitoring (under licence from the National Monuments Service) of any further geotechnical / engineering trial pits or investigations and a report detailing the results of same.
- Archaeological monitoring under licence of all ground works during construction. The National Monuments Service will be informed of such findings to discuss how best to proceed. 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). 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/or monitoring will be preserved by record (archaeologically excavated) or preserved in-situ (avoidance) and therefore a full record made of same. In this regard, the potential 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. The impacts, after the implementation of mitigation, is likely to be 'Not Significant'.

#### 14.4.3.4 Watercourses

As described in Section 14.3.1.4 above one watercourse (stream) was encountered where the cable route crosses the Rearour North and Breeda townland boundary. This stream was accessible, shallow and clear on the day of survey and no archaeological features were noted.

### Pre-Mitigation Impact

Should sub-surface sites or features be present within or adjacent to the watercourse (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) in the absence of any mitigation.

### Proposed Mitigation Measures

- A licensed metal detection survey of the watercourse prior to the cable route excavation in this location. This could be undertaken by the monitoring archaeologist on site in advance of the works as part of the overall monitoring programme.
- Archaeological monitoring under licence of the cable route excavation across the stream in this location. This will form part of the overall monitoring programme for the site.

### Residual Impact

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

#### 14.4.3.5 **Protected Structures/NIAH (direct effects)**

No built heritage structures which are subject to statutory protection or otherwise are located within the EIAR site boundary.

#### 14.4.3.6 **Non-Statutory Local Cultural Heritage Features (Direct Effects)**

##### 14.4.3.6.1 **Historic Settlement north of T16**

### Pre-Mitigation Impact

As described in Section 14.3.3.4.1 above, a small historic settlement is located outside the EIAR boundary to the north of T16. This will be preserved in situ resulting in no direct construction effects. Part of the associated historic road (southwestern section) will be utilised as the new access road to T16 and therefore direct impacts are anticipated.

### Proposed Mitigation Measures

- A photographic and descriptive record of the boundary removal that is proposed. This will be undertaken by the monitoring archaeologist in advance of groundworks associated with T16.



### Residual Impact

The residual impacts will be not significant since a full record will be made of the boundary prior to removal.

### Significance of Impacts

The significance of effects will be not significant.

## 14.4.3.6.2 **Townland Boundaries**

### Pre-Mitigation Impact

There are a number of townland boundaries that are proposed to be crossed by proposed new roads (Propoge, Ballynatray Commons, Ballycondon Commons, and Breeda) and by the cable route (Ballynatray Commons, Lyremountain, Breeda And Rearour North). Townland boundaries are not subject to statutory protection but represent local cultural heritage merit. There will be a direct impact to a small section of some townland boundaries where they will be crossed by the proposed roads and the proposed grid connection cable route. The pre-mitigation impact is considered to be slight/moderate.

### Proposed Mitigation Measures

- A photographic and descriptive record of any boundaries that are proposed to be removed during construction. This will be undertaken by the monitoring archaeologist. Such boundaries will include those listed above.

### Residual Impact

The residual impacts will be Not Significant since a full record will be made of all crossings.

### Significance of Impacts

The significance of effects will be Not Significant.

## 14.4.3.6.3 **Bridge at Breeda Townland along Proposed Collector Network Cable Route**

### Pre-Mitigation Impact

The proposed cable route will traverse the bridge at Breeda townland and will be placed within the road deck of the bridge. No other works are proposed to the bridge. In the interest of the protection of the architectural heritage, an archaeologist will monitor the excavation of the pipe trench along this section of the public road where it crosses the bridge.

### Proposed Mitigation Measures

- Archaeological Monitoring along the public road where it crosses this bridge at Breeda townland. A photographic and descriptive record of the bridge arches will be made (if exposed) and a report compiled on the findings.

## Residual Impact

The residual impacts will be Not Significant since a full record will be made of any elements of the bridge arches.

## Significance of Impacts

The significance of effects will be Not Significant.

### 14.4.4 Operational Phase Potential Impacts (Direct)

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

### 14.4.5 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 the 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 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 14.2.5 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 element of the Proposed Development. 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.

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

##### National Monument No. 330 and Preservation Order 37/1934, Kiltera Ogham Stones at Dromore

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.3). The Zone of Theoretical Visibility used in the LVIA Chapter 12 also shows that this monument is located in an area where no turbines would be visible.



### National Monument No. 240, Conna Castle

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.4). The Zone of Theoretical Visibility used in the LVIA Chapter 12 also shows that this monument is located in an area where no turbines would be visible.

### National Monument No. 286, North Abbey Dominican Friary, Youghal

The viewshed results show that only four turbines T8-T11 could potentially be seen from approximately mid shaft to blade tip from this monument (Figure 14.5). The remainder of the turbines are potentially not visible from this location. Given the distance of the monument from the nearest proposed turbine (9.3 km to T10) any potential impacts on setting are likely to be slight – Not Significant. Furthermore the setting of the monument within an urban setting is such that the setting may not extend beyond the urban limits of Youghal.

### National Monument No. Preservation Order 16/1933, Tower House at Kilnatoora

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.6). The Zone of Theoretical Visibility used in the LVIA Chapter 12 also shows that this monument is located in an area where no turbines would be visible.

### Pre-Mitigation Impact

The proposed turbines have the potential to impact on the setting of National Monuments in the wider landscape. In order to ascertain the degree of potential impact, both Viewshed Analysis and ZTV were utilised. Where an impact has been identified, it is considered to be slight/Not Significant mainly due to the intervening distance and the varying degrees of visibility (Slight impacts being described as ‘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’).

### 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, where an impact has been identified are considered to be slight.

### Significance of Impacts

The turbines will not have any significant/adverse indirect effects on National Monuments within 10km. Impacts will be slight / not significant.

#### 14.4.5.2 Recorded Monuments within the EIAR site boundary (indirect effects)

##### Pre-Mitigation Impact

These monuments are discussed in Section 14.3.2.2 above. The ZTV shows that the monuments are located in an area where potentially all of the proposed turbines may be seen. The monuments are located at a remove from the construction areas therefore their immediate setting will be preserved. Furthermore, their original setting is now much altered and obscured by dense overgrowth and forestry and the descriptions of the monuments in the Archaeological Inventory Series suggests that the monuments may no longer be extant. The site inspection of the monuments undertaken as part of the EIAR also failed to locate the monuments.

The impact is considered to be imperceptible given their inaccessible and overgrown nature as well as lack of surface trace.

##### Proposed Mitigation Measures

Since the impacts are imperceptible, mitigation is not required.

##### Residual Impact

The residual impacts, where an impact has been identified are considered to be imperceptible.

##### Significance of Impacts

The turbines will not have any significant/adverse indirect effects on RMPs within the EIAR site boundary and therefore impacts will be imperceptible.

#### 14.4.5.3 Recorded Monuments/RPS/NIAH within 5km of the proposed Turbines (Indirect Effects)

##### Pre-Mitigation Impact

The Zone of Theoretical Visibility suggests that 13-17 turbines may be visible from the majority of locations where RMPs/RPS and NIAH structures are located within 5km from the proposed Turbines. This impact is considered to be slight/moderate. No RPS or NIAH is located in the immediate vicinity of any of the proposed turbines. All built heritage structures are situated at a remove from the proposed turbine locations. In the wider landscape setting, the ZTV (used in the LVIA Chapter 12) shows that there may be varying levels of visibility from the locations of the built heritage structures and some where there is no visibility, in particular from the south.

##### 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 ZTV is based on the worst-case scenario as it does not take natural screening or vegetation into account. In reality, the latter is likely to minimise any potential effects on setting. The residual impacts, where an impact has been identified are considered to be slight.



## Significance of Impacts

The turbines will not have any significant/adverse indirect effects on heritage assets within 5km. Impacts will be slight taking natural screening into consideration.

### 14.4.5.4 Cultural Heritage Features (Indirect Effects)

Cultural heritage (including townland boundaries) have been addressed in Section 14.4.3.6 above under Direct effects. No indirect effects are anticipated at the operational stage of the development.

No impacts will occur and therefore the significance of effects will be imperceptible.

## 14.5 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.

There are 3 wind farms located within a 20-kilometre radius of the proposed development site and any cumulative effects arising are considered in this assessment. Furthermore there are no applications relating to significant commercial or infrastructural proposals, e.g. energy generation, transmission, industry etc., lodged within the immediate vicinity of the proposed wind farm within County Waterford or Cork. Planning applications in the vicinity predominantly relate to the provision of one-off housing and agricultural development.

### 14.5.1 Cumulative Impacts (Construction Stage)

All potential direct effects on cultural heritage have been assessed and mitigated. The mitigation measures when implemented will minimise, reduce or remove the impact altogether and therefore the addition of the Proposed Development to other surrounding projects (including other wind farms, one-off housing etc) will not result in cumulative effects at the construction stage.

### 14.5.2 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.

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

##### National Monument No. 330 and Preservation Order 37/1934, Kiltera Ogham Stones at Dromore

The viewshed results show that the permitted Knocknamona and the existing Woodhouse turbines may be visible from this monument (not assuming any vegetation or screening). The viewshed analysis also shows that there are no instances where the proposed turbines could potentially be seen from the same National Monument (Figure 14.3). The addition of the Proposed Development to other projects will not result in cumulative effects at the operational stage of the development, therefore.

### National Monument No. 240, Conna Castle

The viewshed results show that the existing Barmnafaddock turbines may be visible from this monument (not assuming any vegetation or screening). The viewshed analysis also shows that there are no instances where the proposed turbines could potentially be seen from the same National Monument (Figure 14.4). The addition of the Proposed Development to other projects will not result in cumulative effects at the operational stage of the development therefore.

### National Monument No. 286, North Abbey Dominican Friary, Youghal

The viewshed results show that four turbines T8-T11 could potentially be seen from approximately mid shaft to blade tip from this monument (Figure 14.5). The remainder of the proposed turbines may theoretically not be visible from this location. The viewshed also shows that no other turbines from other projects (permitted or existing) would be visible from this location and in this regard the potential indirect effects remain slight – imperceptible with no cumulative effects identified.

### National Monument No. Preservation Order 16/1933, Tower House at Kilnatoora

The viewshed analysis shows that there are no instances where the proposed turbines could potentially be seen from the National Monument (Figure 14.6) and that there are no other turbines from other permitted or existing projects visible from this location. In this regard no cumulative effects will occur at the operational stage.

## 14.5.2.2 Cumulative (Indirect) Impacts to Recorded Monuments, RPS and NIAH structures

No other wind farm projects are located within the 5km study area used to assess impacts on setting of recorded monuments/RPS/NIAH. In this regard no cumulative effects on the immediate setting of such monuments will occur.

In the wider landscape setting, the ability to view other turbines (permitted, proposed and existing) as well as the proposed turbines is such that cumulative effects on setting of cultural heritage assets may occur. These cumulative effects are likely to be mitigated by natural screening, vegetation and distance from the monuments.

## 14.6 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.

## 14.7 Summary

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 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 Monuments within the ELAR Boundary:**



Three recorded monuments are located within the EIAR site boundary and have no visible surface trace and are located within forestry away from the proposed infrastructure. Protected buffer zones will be established prior to construction. The wind farm layout has taken their location into consideration in that no RMPs are within the footprint of any proposed infrastructure. No direct impacts to any of the aforementioned sites will occur therefore.

**Sub-surface archaeological potential:**

The sub-surface archaeological potential of the Proposed Development area is considered to be low within the areas already forested and moderate where proposed turbines and associated infrastructure is located within green fields. Pre-development testing of all green field areas including the proposed grid connection cable route will be undertaken to ascertain the presence or otherwise of sub-surface archaeological features. Furthermore, archaeological monitoring will take place during construction of areas in undisturbed ground.

**Effects on Setting of Cultural Heritage Assets:**

Indirect effects on the setting of National Monuments within 10km, RMPs within 5km and RPS/NIAH within 5km were considered in the assessment in order to assess impacts on setting in the wider landscape.

The proposed turbines have the potential to impact on the setting of National Monuments in the wider landscape. In order to ascertain the degree of potential impact, both Viewshed Analysis and ZTV were utilised. Where an impact has been identified (only from one National Monument), they are considered to be slight, mainly due to the intervening distance and the varying degrees of visibility (slight impacts being described as ‘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’. 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.

All monument types within 5km of the nearest proposed turbines are discussed in Section 14.3.2.3 above. Potential impacts on setting were identified through viewshed analysis or the Zone of Theoretical Visibility. Impacts on setting are likely to be slight/moderate based on the viewshed and ZTV results. The ZTV, however, is based on the worst-case scenario as it does not take natural screening or vegetation into account. In reality, the latter is likely to minimise any potential effects on setting. The residual impacts, where an impact has been identified are considered to be slight.

**Cumulative Effects:**

An assessment of cumulative effects was also undertaken, taking into consideration projects (permitted, proposed and existing) within 20km of the Proposed Development. 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.

No cumulative effects on National Monuments at the operational stage of the Proposed Development will occur since there are no occasions where both the turbines and other project turbines are visible from the monuments. A slight cumulative effect on RMPs within 5km may occur due to the ability to potentially view both the proposed turbines and other turbines within the wider landscape setting. This cumulative effect will be slight.