



Cush Wind Farm

# Environmental Impact Assessment Report

## Chapter 10: Cultural Heritage

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## 10.1 Introduction

This chapter has been prepared to define and assess any likely significant impacts or effects which the construction, operation and decommissioning of the project may have on the archaeological, architectural and cultural heritage resource. The chapter also describes mitigation measures, based on current information, which may be used to avoid, reduce or offset any likely adverse effects identified.

### 10.1.1 Objectives

The objectives of this chapter are to:-

- identify all known features of archaeological, architectural and cultural heritage importance in the vicinity of the project;
- determine any likely impacts of the project on the archaeological, architectural and cultural heritage resource; and
- identify measures to mitigate any likely adverse effects of the project on the archaeological, architectural and cultural heritage resource.

The following key impacts are addressed:-

- Direct and indirect impacts of the construction of the project on the archaeological, architectural and cultural heritage resource;
- Direct and indirect impacts of the operation of the project on the archaeological, architectural and cultural heritage resource; and
- Cumulative impacts of the construction and operation of the project on the archaeological, architectural and cultural heritage resource with other existing, permitted or proposed developments or projects.

### 10.1.2 Description of the Project

In summary, the project comprises the following main components as described in **Chapter 3**:-

- 8 no. wind turbines with an overall tip height of 200m, and all associated ancillary infrastructure;
- All associated and ancillary site development, excavation, construction, landscaping and reinstatement works, including provision of site drainage infrastructure and forestry felling.
- Temporary alterations to the turbine component haul route; and,
- Construction of an electricity substation, Battery Electricity Storage System and installation of 5.6km of underground grid connection to facilitate connection of the proposed electricity substation to the existing 110kV substation at Clondallow, County Offaly;

The project site is located in rural County Offaly, approximately 4km north of the town of Birr and c. 28km south-west of Tullamore. Off-site and secondary developments; including the forestry replant lands in County Monaghan and candidate quarries which may supply construction materials; also form part of the project.

The turbine component haul route, and associated temporary alteration works as described at **Chapter 3**, are located within counties Galway, Roscommon, Westmeath, and Offaly. It is envisaged that the turbines will be transported from the Port of Galway, through the counties of Galway, Roscommon, Westmeath and Offaly, to the project site. However, as the route follows motorway and national roads

through these counties, it is assessed that there is no likelihood of cultural heritage effects and, therefore, these areas have been screened out from further assessment.

A full description of the project is presented in **Chapter 3**.

### 10.1.3 Statement of Authority

#### *Dermot Nelis BA ArchOxon AIFA MIAI*

Dermot Nelis graduated from Queen's University Belfast and after gaining extensive fieldwork experience undertook postgraduate studies at the University of Oxford in archaeological consultancy and project management.

Dermot has acted as Senior Archaeologist on several road schemes and has directed large-scale multi-period excavations associated with those developments. He has completed over 190 licensed fieldwork programmes and over 250 archaeological, architectural and cultural heritage desk-based reports, including assessments for Environmental Impact Statements and Environmental Impact Assessment Reports.

## 10.2 Methodology

### 10.2.1 Study Area

There is no professional standard for defining the extent of a study area when assessing the likelihood of effects on archaeological, architectural or cultural heritage remains. A 1km study area has been applied around the project (wind farm) site to assess the presence of statutorily protected archaeological remains (RMP sites). A 20km study area has been applied around the wind farm site to assess the presence of any World Heritage Sites or sites included in the Tentative List as consideration for nomination to the World Heritage List. In addition, a 5km study area has been applied around the wind farm site to assess the presence of any National Monuments in State Care, sites with Preservation Orders or Temporary Orders, Protected Structures, Conservation Areas or Proposed Conservation Areas.

A 1km study area has been applied around the wind farm site to record the presence of any structures recorded on the National Inventory of Architectural Heritage (NIAH). An assessment has also been made of any historic gardens or designed landscapes as recorded on the NIAH that may exist within the project site.

A 100m study area has been applied around the grid connection and the proposed temporary haul route works at the N52/N62 junction. The forestry replant lands have also been assessed.

### 10.2.2 Sources of Information

Research has been undertaken in two phases. The first phase comprised a desk review, namely a paper and digital survey of archaeological, historical and cartographic sources. The second phase involved field inspections of the project site. Each phase is outlined in the following sections.

The following sources were examined and a list of sites and areas of archaeological, architectural and cultural heritage potential was compiled:-

- Record of Monuments and Places of County Offaly;
- Topographical Files of the National Museum of Ireland;
- Cartographic and documentary sources relating to the study area;
- Aerial photographs of Ordnance Survey Ireland and Bing aerial photography;

- *Offaly County Development Plan 2021–2027 and the Tipperary County Development Plan 2022–2028*;
- National Inventory of Archaeological Heritage; and
- Environmental Protection Agency *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022)*.

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Service. Back-up files of the Sites and Monuments Record (SMR) provide details of documentary sources and field inspections where these have taken place.

Topographical Files of the National Museum of Ireland is the archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts, but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information in the discovery of sites of archaeological significance.

Cartographic sources are important in tracing land-use development within an area of land take, as well as providing important topographical information on sites and areas of archaeological potential. Cartographic analysis of relevant maps has been made to identify any topographical anomalies that may no longer remain within the landscape.

Documentary sources were consulted to gain background information on the historical and archaeological landscape of the wider development area.

Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its potential to contain previously unidentified archaeological remains.

Offaly County Development Plan 2021-2027 and the Tipperary County Development Plan 2022–2028 contain Objectives and Policies on the preservation and management of archaeological, architectural and cultural heritage features.

National Inventory of Architectural Heritage (NIAH) is a section within the Department of Housing, Local Government and Heritage. The work of NIAH involves identifying, recording and evaluating, on a non-statutory basis, the architectural heritage of Ireland from 1700 to the present day. The NIAH website also contains a non-statutory register of historic gardens and designed landscapes in County Offaly, and this was assessed to look for the presence of any such features within the project site.

Environment Protection Agency *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (2022)* provide definitions for potential effects on archaeological, architectural and cultural heritage remains.

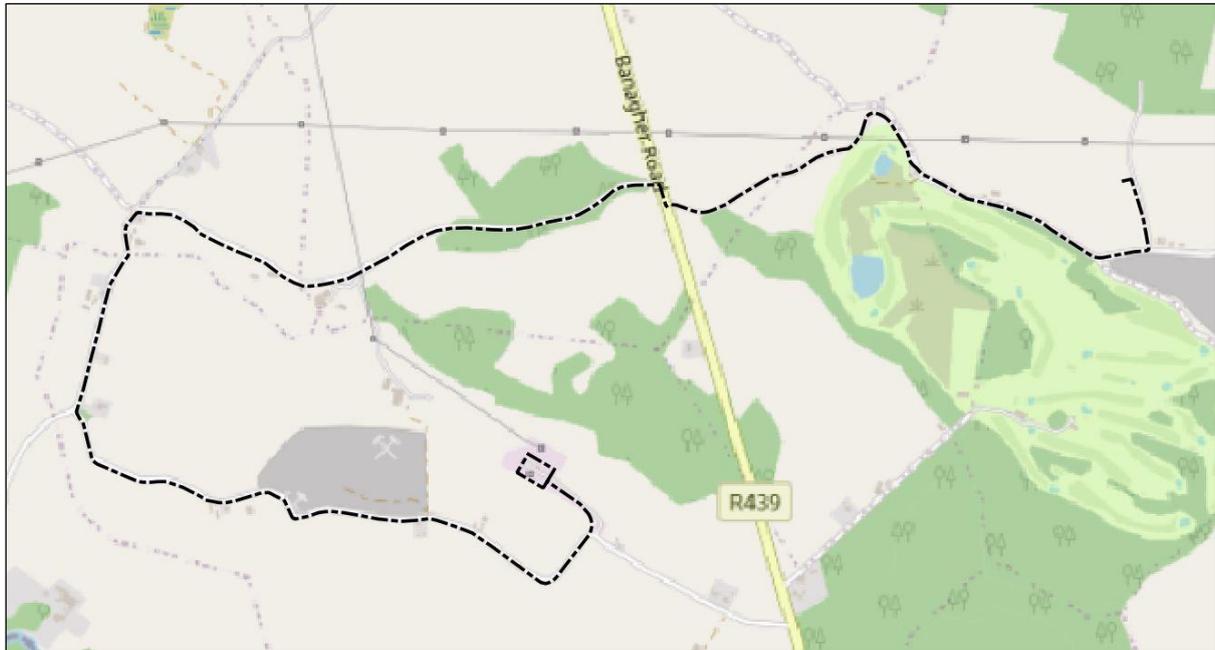
### 10.2.3 Field Inspection

Field inspection is necessary to determine the extent, character and condition of archaeological, architectural and cultural heritage features, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

Site visits were carried out on 19 October and 20 October 2022, when areas of land take at the project (wind farm) site were walked and visually assessed. The grid connection was assessed by means of a windshield survey.



Figure 10.1: Aerial Photograph Showing Location of Turbines 1–8 & Associated Infrastructure



**Figure 10.2: Grid Connection Route**

#### 10.2.4 Significance Criteria

The likelihood of significant effects can be identified from detailed information about a project, the nature of the area affected, and the range of resources potentially affected. The construction, operation and decommissioning of a wind farm and its associated activities can affect the archaeological, architectural and cultural heritage resource of a given landscape in a number of ways:-

- Permanent and temporary land-take, associated structures, landscape mounding and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape;
- Archaeological sites can be affected adversely in a number of ways including disturbance by excavation, topsoil stripping and the passage of heavy machinery, disturbance by vehicles working in unsuitable conditions, burial of sites thus limiting accessibility for future archaeological investigation;
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or long-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits;
- Visual and noise effects on the historic landscape can arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic structures and historic landscape elements as well as their visual amenity value;
- Landscape measures, such as tree planting, can damage sub-surface archaeological features due to topsoil stripping and through the root action of trees and shrubs as they grow;

- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluvium or peat deposits;
- Disruption due to construction also offers the potential for adversely affecting archaeological remains. This can include machinery, site offices, service trenches etc; and,
- Although not widely appreciated, positive effects can accrue from permitted developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of assessment and fieldwork.

There is no standard scale against which the significance of likely effects on the archaeological and historic landscape may be judged. The severity of a given level of land take or visual intrusion varies with the type of monument, site or landscape features and its environment. Significance of effect can be judged taking the following into account:-

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected; and
- Assessment of the levels of visual, noise and hydrological effects, either in general or site-specific terms, as may be provided by other specialists.

For this assessment, the significant effects criteria outlined in **Table 10.1** are used. This is as per the *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (Environmental Protection Agency (2022), Section 3:50).

Level of Effects	Significance Criteria
Imperceptible	An effect capable of measurement but without significant consequences.
Not Significant	An effect which causes noticeable changes in the character of the environment but without significant consequences.
Slight Effects	An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.
Moderate Effects	An effect that alters the character of the environment in a manner that is consistent with existing and emerging baseline trends.
Significant Effects	An effect which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Very Significant	An effect which, by its character, magnitude, duration or intensity significantly alters most of a sensitive aspect of the environment.
Profound Effects	An effect which obliterates sensitive characteristics.

**Table 10.1: Significance of Effects**

## 10.3 Policy & Legislation

### 10.3.1 Archaeological Resource

The National Monuments Act, 1930 to 2004 and relevant provisions of the National Cultural Institutions Act, 1997 are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all manmade structures of whatever form or date, except buildings habitually used for ecclesiastical purposes.

A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Record of Monuments and Places, the Register of Historic Monuments, the placing of Preservation Orders and Temporary Preservation Orders on endangered sites, and National Monuments in the Ownership or Guardianship of the Minister for Housing, Local Government and Heritage or a Local Authority.

The Minister may acquire National Monuments by agreement or by compulsory order. The State or the Local Authority may assume guardianship of any National Monument (other than dwellings). The owners of National Monuments (other than dwellings) may also appoint the Minister or the Local Authority as guardian of that monument if the State or Local Authority agrees. Once the site is in ownership or guardianship of the State, it may not be interfered with without the written consent of the Minister.

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic Monuments and archaeological areas present on the Register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the Register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a Registered Monument. The Register also includes sites under Preservation Orders and Temporary Preservation Orders. All Registered Monuments are included in the Record of Monuments and Places.

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

Section 12(1) of the 1994 Act requires the Minister to establish and maintain a Record of Monuments and Places where the Minister believes that such monuments exist. The Record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the State. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994.

Section 12(3) of the 1994 Act provides that:-

*“where the owner or occupier (other than the Minister for Arts, Heritage and the Gaeltacht) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage and the Gaeltacht to carry out work and shall not, except in the case of urgent necessity and with the consent of the Minister, commence the work until two months after the giving of notice”* ([www.archaeology.ie](http://www.archaeology.ie)).

### 10.3.2 Architectural & Built Heritage Resource

The main laws protecting the built heritage are the Architectural Heritage (National Inventory) and Historic Properties (Miscellaneous Provisions) Act, 1999 and the Planning and Development Act 2000 (as amended). The Architectural Heritage Act

requires the Minister to establish a survey to identify, record and assess the architectural heritage of the country. The National Inventory of Architectural Heritage records built heritage structures within all the counties of the State. As inclusion in the Inventory does not provide statutory protection, the document is used to advise Local Authorities on compilation of a Record of Protected Structures (RPS) as required by the Planning and Development Act 2000.

The Planning and Development Act 2000 (as amended) requires Local Authorities to establish a Record of Protected Structures to be included in the County Development Plan. This Plan includes objectives designed to protect the archaeological, architectural and cultural heritage resource during the planning process. Buildings recorded in the RPS can include Recorded Monuments, structures listed in the NIAH, or buildings deemed to be of architectural, archaeological or artistic importance by the Minister. Sites, areas or structures of archaeological, architectural or artistic interest listed in the RPS receive statutory protection from injury or demolition under the 2000 Act. Damage to or demolition of a site registered on the RPS is an offence. The RPS list is not always comprehensive in every county.

A Local Authority has the power to order conservation and restoration works to be undertaken by the owner of a Protected Structure if it considers the building in need of repair. An owner or developer must make a written request to the Local Authority to carry out any works on a Protected Structure and its environs, which will be reviewed within 12 weeks of application. Failure to do so may result in prosecution.

## 10.4 Description of the Existing Environment

### 10.4.1 General Archaeological & Historical Background

County Offaly shares boundaries with counties Galway, Kildare, Laois, Meath, Roscommon, Tipperary and Westmeath. It measures approximately 493,985 acres (199,981 hectares) and is primarily a flat and gently undulating county. Approximately one fifth of the county comprises peatlands, with the majority of the remainder of the land in agricultural/forestry use. The Slieve Bloom Mountains are an exception to Offaly's predominantly level topography, and are situated in the southwest of the county. A comprehensive system of eskers also exists in Offaly, mainly concentrated in the northwest and centre of the county.

Bogs or waterlogged areas frequently contain previously unrecorded remains and often form important archaeological landscapes. Waterlogged conditions provide an anaerobic environment which preserves organic remains and features such as wooden trackways or toghers. The practice of laying down trackways or causeways across wet areas and bogs to facilitate movement is known from as early as the 4<sup>th</sup> Millennium BC. Trackways vary in form from a localised use of brushwood to large-scale linear features substantial enough to carry wheeled vehicles. In addition, monuments such as crannogs, *fulachta fiadh* and sites of votive offering are frequently found in or near wet, waterlogged regions.

During the Mesolithic period (c. 7,000-4,000 BC) people existed as hunters/gatherers, living on the coastline, along rivers and lakesides. They used flint and other stones to manufacture sharp tools, and locating scatters of discarded stone tools and debris from their manufacture can sometimes identify settlements. The earliest evidence of settlement in County Offaly dates to this period and is represented by an Early Mesolithic summer shoreline camp at Lough Boora, which was supported by salmon and eel fishing and pig hunting. This site is located c. 10km north east of Turbine 5.

During the Neolithic period (c. 4,000-2,400 BC) the population became more settled with a subsistence economy based on crop growing and stock-raising. This period also saw changes in burial practices, and a tradition of burying the dead collectively and carrying out of cremations emerged. The burial tombs are generally divided into four distinct groups, identified on the basis of their architecture, distribution, date range and associated architecture: portal tombs, passage tombs, wedge tombs and court tombs, none of which have been recorded in County Offaly ([www.archaeology.ie](http://www.archaeology.ie)).

The Bronze Age (c. 2,400-600 BC) is characterised by the introduction of metalworking technology to Ireland and coincides with many changes in the archaeological record, both in terms of material culture as well as the nature of the sites and monuments themselves. Though this activity has markedly different characteristics to that of the preceding Neolithic period, including new structural forms and new artefacts, it also reflects a degree of continuity.

The Dowris Hoard, dating from the 9<sup>th</sup> to 7<sup>th</sup> century BC, was discovered in the 1820s in the townland of Whigsborough, County Offaly, which is located at its nearest point 800m north east of Turbine 5. It is the largest collection of bronze objects found in Ireland and may originally have contained over 200 pieces. The find was poorly recorded, though it may have been made while potato digging in reclaimed bogland. While no precise details of the original contents exist, 110 objects are preserved in the National Museum of Ireland with a further 67 in the British Museum. Of the surviving items, the most numerous are hollow-cast bronze pendants (48), spearheads (36), socketed axes (35), cast bronze trumpets or horns (26), knives (7), swords (5), socketed gouges (5), buckets (3), cauldrons of sheet bronze (3) and razors (3). A socketed hammer and a scabbard chape were also preserved. It is possible, given its unusual size, that the assemblage may not have been a single deposition but rather may have accumulated over a period of time as a result of a prolonged sequence of ritual activity.

Other important hoards from County Offaly include the Frankford Hoard, found 10m deep in a bog at Kilcormac in 1892, and a gold hoard (13<sup>th</sup> to 14<sup>th</sup> century BC) containing a gold necklet, two gold armlets and two gold rings found in Derrinboy Bog in 1959. Both of these hoards were found c. 10km east of the wind farm site. A hoard found at Meenwaun, near Banagher, contained an amber necklace of 125 beads along with a gold dress fastener, a bronze penannular bracelet and two bronze rings. This hoard was found c. 4.7km north west of the wind farm site.

During the Iron Age (c. 600 BC-400 AD) new influences came into Ireland which gradually introduced the knowledge and use of iron, although for several centuries bronze continued to be widely used. The Iron Age in Ireland however is problematic for archaeologists as few artefacts dating exclusively to this period have been found, and without extensive excavation it cannot be determined whether several monument types, such as ring-barrows or standing stones, date to the Bronze Age or Iron Age.

The Early Medieval period (c. 400-1169 AD) is depicted in the surviving sources as entirely rural, characterised by the basic territorial unit known as *túath*. Walsh (2000, 30) estimates that there were at least 100, and perhaps as many as 150, kings in Ireland at any given time during this period, each ruling over his own *túath*.

The Early Medieval period is also characterised by the foundation of a large number

of ecclesiastical sites throughout Ireland in the centuries following the introduction of Christianity in the 5<sup>th</sup> century AD. The early churches tended to be constructed of wood or post-and-wattle, although between the late 8<sup>th</sup> and 10<sup>th</sup> centuries mortared stone churches gradually replaced the earlier structures. Many of the sites, some of which were monastic foundations, were probably originally defined by an enclosing wall or bank similar to that found at coeval secular sites. This enclosing feature was possibly built more to define the sacred character of the area of the church than as a defence against aggression. An inner and outer enclosure can be seen at some of the more important sites; the inner enclosure surrounding the sacred area of church and burial ground and the outer enclosure providing a boundary around living quarters and craft areas. Where remains of an enclosure survive it is often the only evidence that the site was an early Christian foundation.

The commencement of Viking raids at the end of the 8<sup>th</sup> century and their subsequent settlement during the following two centuries marked the first ever foreign invasion of Ireland. Viking settlement evidence has been found in Cork, Dublin and Waterford, and excavations have revealed extensive remains of the Viking towns. Outside these towns, understanding of Viking settlement is largely drawn from documentary and place-name evidence. In addition to Cork, Dublin and Waterford, documentary sources provide evidence for the Viking foundation of the coastal towns of Limerick and Wexford (Edwards 2006, 179). Other indirect evidence which suggests Viking settlement, or at least a Norse influence in Ireland, is represented by upwards of 120 Viking-age coin hoards, possible votive offerings of Viking style objects, and the assimilation of Scandinavian art styles into Irish designs. While the initial Viking raids would have been traumatic, the wealth and urban expansion brought into the country as a result of Viking trading would have benefited the Gaelic Irish, and cultural assimilation in some parts would have been significant.

The arrival of Anglo-Normans in Ireland towards the end of the 12<sup>th</sup> century resulted in great changes during the following century. Large numbers of colonists arrived from England and Wales and established towns and villages. They brought with them new methods of agriculture which facilitated an intensification of production. Surplus foods were exported to markets all along Atlantic Europe which created great wealth and economic growth. Results of this wealth can be seen in the landscape in the form of stone castles, churches and monasteries.

The political structure of Anglo-Normans centred around the establishment of shires, manors, castles, villages and churches. In the initial decades after the Anglo-Norman invasion a distinctive type of earth and timber fortification was constructed- the motte and bailey. In certain areas of Ireland Anglo-Norman settlers constructed square or rectangular enclosures, now termed moated sites. Their main defensive feature was a wide, often water-filled, fosse with an internal bank. More substantial stone castles followed the motte and bailey and moated sites in the 13<sup>th</sup> and 14<sup>th</sup> centuries. Tower houses are regarded as a late type of castle and were erected from the 14<sup>th</sup> to early 17<sup>th</sup> centuries.

The 14<sup>th</sup> century throughout north west Europe is generally regarded as having been a time of crisis, and Ireland was no exception. Although the Irish economy had been growing in the late 13<sup>th</sup> century, it was not growing quickly enough to support the rapidly expanding population, especially when Edward I was using the trade of Irish goods to finance his campaigns in Scotland and Wales. When the Great European Famine of 1315-1317 arrived in Ireland, brought about by lengthy periods of severe

weather and climate change, its effects were exacerbated by the Bruce Invasion of 1315-1318. Manorial records which date to the early 14<sup>th</sup> century show that there was a noticeable decline in agricultural production. This economic instability and decline was further worsened with the onset of the Bubonic Plague in 1348.

Before the Tudors came to the throne, the kings of England were also the kings of western France and so, during the 14<sup>th</sup> and 15<sup>th</sup> centuries, the various lords who ruled in Ireland were largely left to themselves. The Tudors however took more of an interest in the affairs of Ireland, and they wanted to put a stop to the raids of the Gaelic Irish on areas under English rule. To do this, they ruthlessly put down any rebellions and even quashed inter-tribal feuds. English settlers were then brought in to settle their lands. The first of these plantations occurred in the mid-16<sup>th</sup> century in what is now Laois and Offaly. After the Desmond rising in Munster in 1585 came another plantation, and parts of south western Tipperary were planted at that time.

Expansion in the agricultural sector following a period of economic growth in Ireland from the mid-1730s led to rising prices and increase in trade. This increase in agricultural productivity led to growth in related industrial development throughout the country.

Turbines 1–8, their associated infrastructure and the proposed temporary works at the N52/N62 junction will all be located in the townlands of Ballindown, Boolinarig Big, Cush, Eglis and Galros West, which are all in the barony of Eglis and parish of Eglis.

Lewis (1837, Vol. 1, 596) records the parish of Eglis as:

*“containing 3290 inhabitants. This parish is six miles in length by four in breadth, and comprises 7722 statute acres there is a great deal of bog, and some limestone for building and burning.”*

#### 10.4.2 Site-Specific Archaeological Background

There are no Recorded Monuments within the wind farm site.

There are 4 no. Recorded Monuments within 1km of the wind farm site, each of which are described below (**Figure 10.3**).

##### 10.4.2.1 RMP OF030-017: Ritual Site-Holy Well

A slight depression beside a small stream probably indicates the location of the destroyed well.

##### 10.4.2.2 RMP OF030-023: Mass Rock

Mass-rock situated in a large natural hollow close to Tobernapearla Holy Well (RMP OF030-017). The rock lies near the top of the north west slope of a hollow. The stone (length 1.5m; width 2m; height 2.5m) is mostly buried.

##### 10.4.2.3 RMP OF030-081: Structure-Peatland

A roundwood (diameter 0.09m) located in a drain face with evidence of wood working. It was set within moderately humified Sphagnum peat with ericaceous remains immediately above the peat. This site is not scheduled for inclusion in the next revision of the RMP and the feature is no longer extant.

##### 10.4.2.4 RMP OF030-083: Structure-Peatland

A single piece of roundwood (diameter 0.06m) located 0.57m below the field surface in a drain face and set at a 35° angle. It was within moderately humified Sphagnum

peat which contained ericaceous remains and Eriophorum. This site is not scheduled for inclusion in the next revision of the RMP and feature is no longer extant.



**Figure 10.3: Recorded Monuments Within 1km of the Project (Wind Farm) Site**

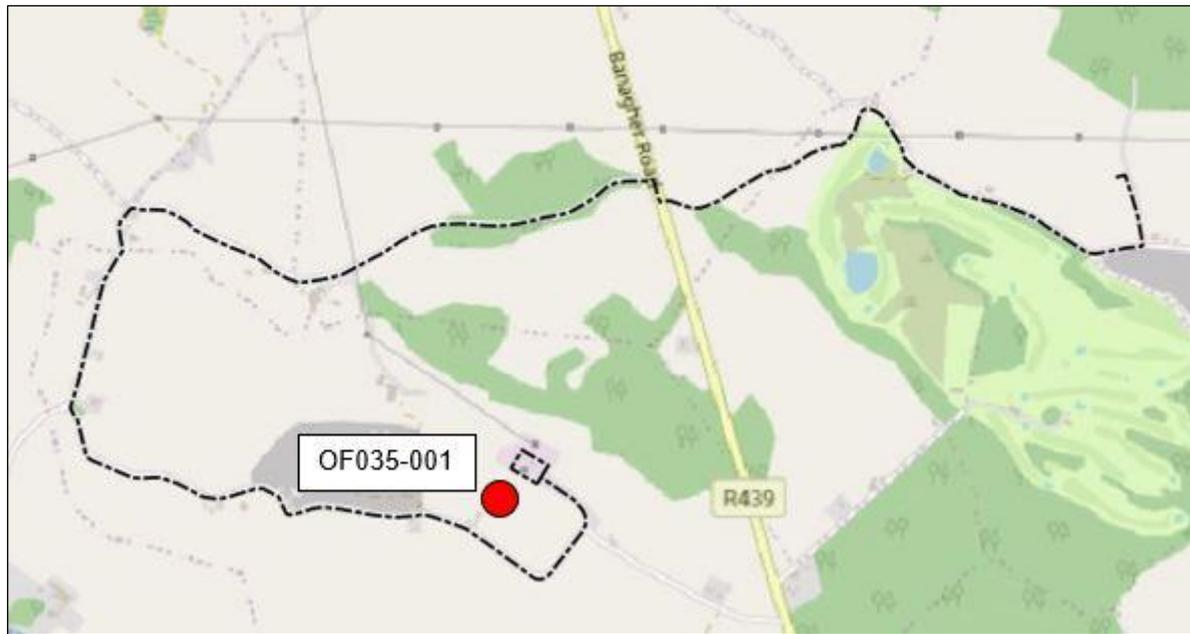
There are no additional Recorded Monuments within 1km of the wind farm site.

There are no Recorded Monuments within the grid connection.

There is 1 no. Recorded Monument within 100m of the grid connection, which is described below (**Figure 10.4**).

#### 10.4.2.5 RMP OF035-001: Ringfort

Natural hill with no archaeological features visible. The site is however known locally as the "Deans Fort" and is marked on the First Edition of the Ordnance survey 1:10,560 map (1840).



**Figure 10.4: Recorded Monument within 100m of the Grid Connection**

There are no additional Recorded Monuments within 100m of the grid connection.

There are no Recorded Monuments within the temporary haul route works at the N52/N62 junction or within 100m of the upgrade works at the N52/N62 junction.

Peatland structures are wood found in peat, which has been deliberately deposited or processed. They vary from single pieces to deposits without a clear form or orientation but which are indicative of an archaeological structure. They may be of any date from the Neolithic to the Medieval period.

Ringforts are generally circular defensive enclosures which were constructed to protect farmsteads. They were enclosed by an earthen bank and exterior ditch, and ranged from approximately 25m to 50m in diameter. The smaller sized and single banked type (univallate) was more than likely home to lower ranks of society, while larger examples with more than one bank (bivallate/trivallate) housed the more powerful kings and lords. They are regarded as defended family homesteads, and the extant dating evidence suggests they were primarily built between the 7<sup>th</sup> and 9<sup>th</sup> centuries AD (Stout 1997, 22-31). The most recent detailed study (*ibid.*, 53) has suggested that there is an approximate total of 45,119 potential ringforts or enclosure sites throughout Ireland.

Holy wells are a well or spring, though in some unusual cases a natural rock basin, which usually bear a saint's name and are often reputed to possess miraculous healing properties. They may have their origins in prehistory, but are associated with devotions from the Medieval period onwards.

Mass rocks are rocks or earthfast boulders used as an altar or a stone-built altar when Mass was being celebrated during Penal times (1690s to 1750s AD), though there are some examples which appear to have been used during the Cromwellian Period (1650s AD). Some of these rocks/boulders may bear an inscribed cross.

### 10.4.3 Cartographic Analysis

#### 10.4.3.1 Ordnance Survey Maps: First Edition 1:10,560 (1840) (Figure 10.5); First Edition 1:2,500 (1910) (Figure 10.6) & Third Edition 1:10,560 (1912) (Figure 10.7)

The grid connection will cross two parish and barony boundaries and three townland boundaries. The access track from Turbine 2 to Turbine 4 will cross a townland boundary. The access track leading north from Turbine 4 to Turbine 1 and Turbine 3 will cross a townland boundary, while the access track leading east from Turbine 4 to Turbine 6 will also cross a townland boundary. Turbine 6 will be located immediately east of a townland boundary, while Turbines 1, 3 and 5 will be located close to townland boundaries. Recent research suggests that:-

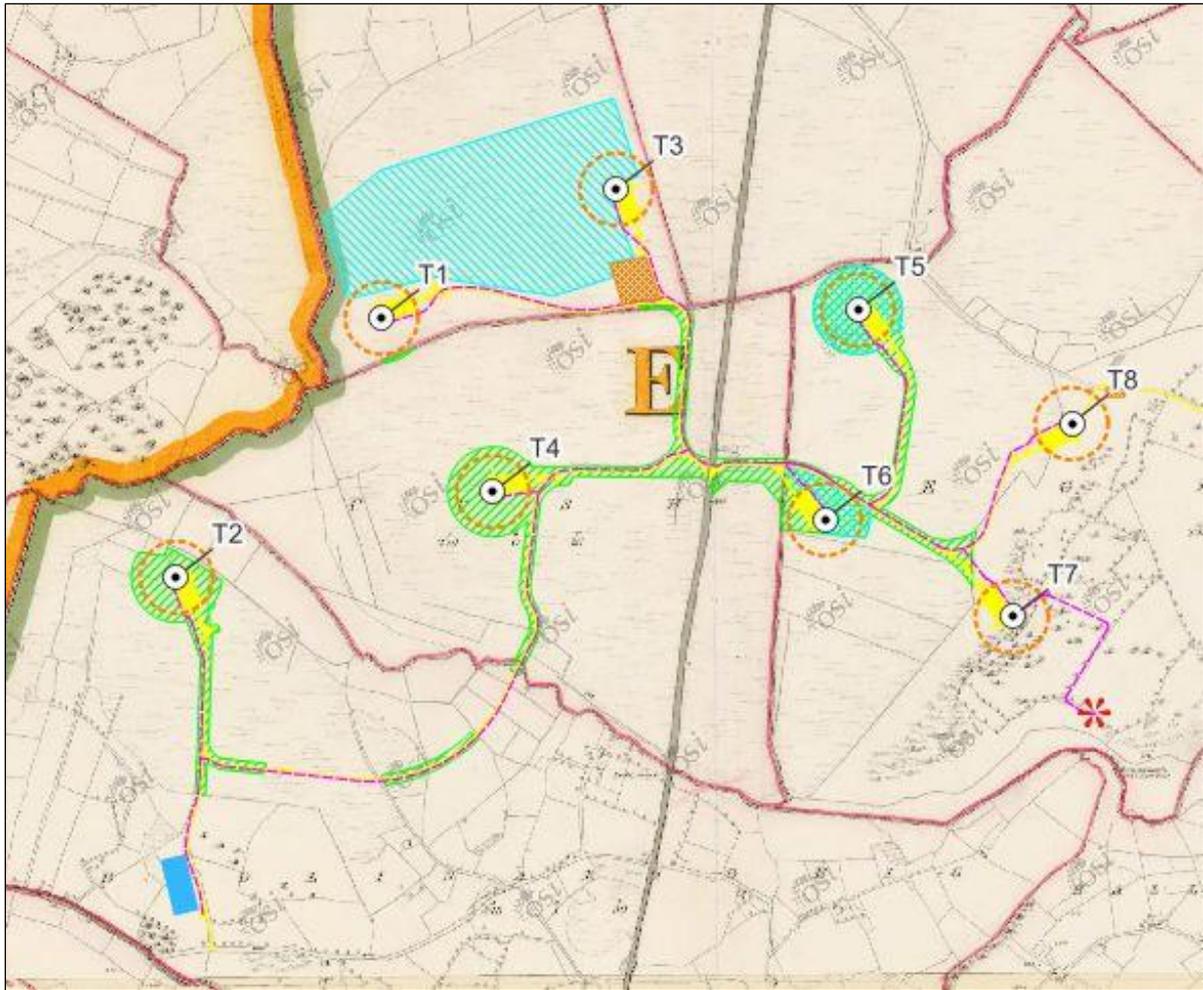
*“hoards and single finds of Bronze Age weapons, shields, horns, cauldrons and gold personal objects can all be shown to occur on boundaries.”* (Kelly 2006, 28).

The turbines and associated access tracks will generally be located in unenclosed rough pasture or small fields as recorded on the First Edition 1:10,560 map. A small structure is recorded on the line of the access track between Turbine 4 and Turbine 6, while a small structure is recorded north of the access track and one also to the south. These structures are recorded on later editions of the Ordnance Survey maps but no longer survive above-ground.

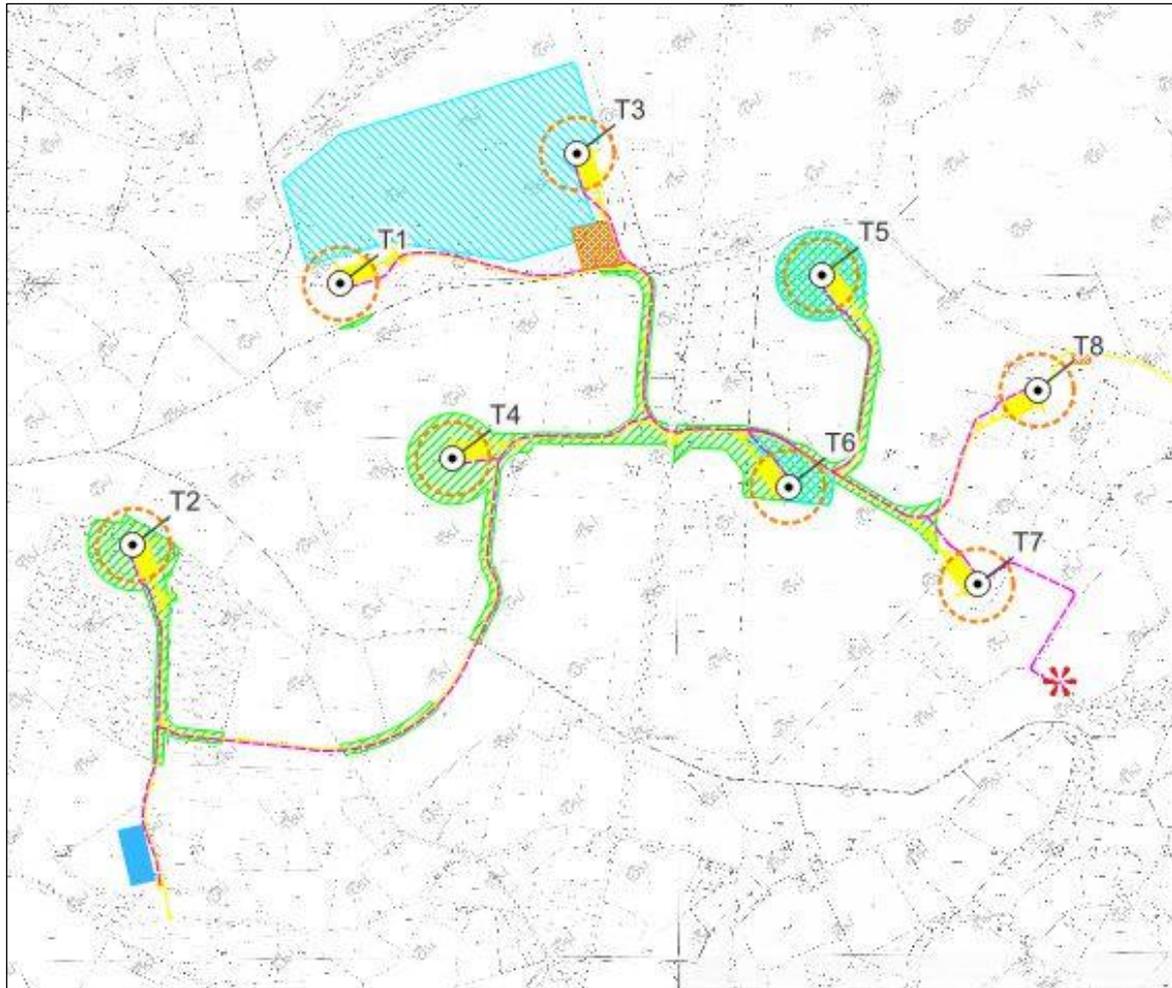
There are no archaeological or additional architectural features recorded within the land take/footprint of the proposed wind farm on historic cartographic sources.

All three Editions of the Ordnance Survey maps record the presence of vernacular structures, Ordnance Survey bench marks, etc. in the general vicinity of the grid connection.

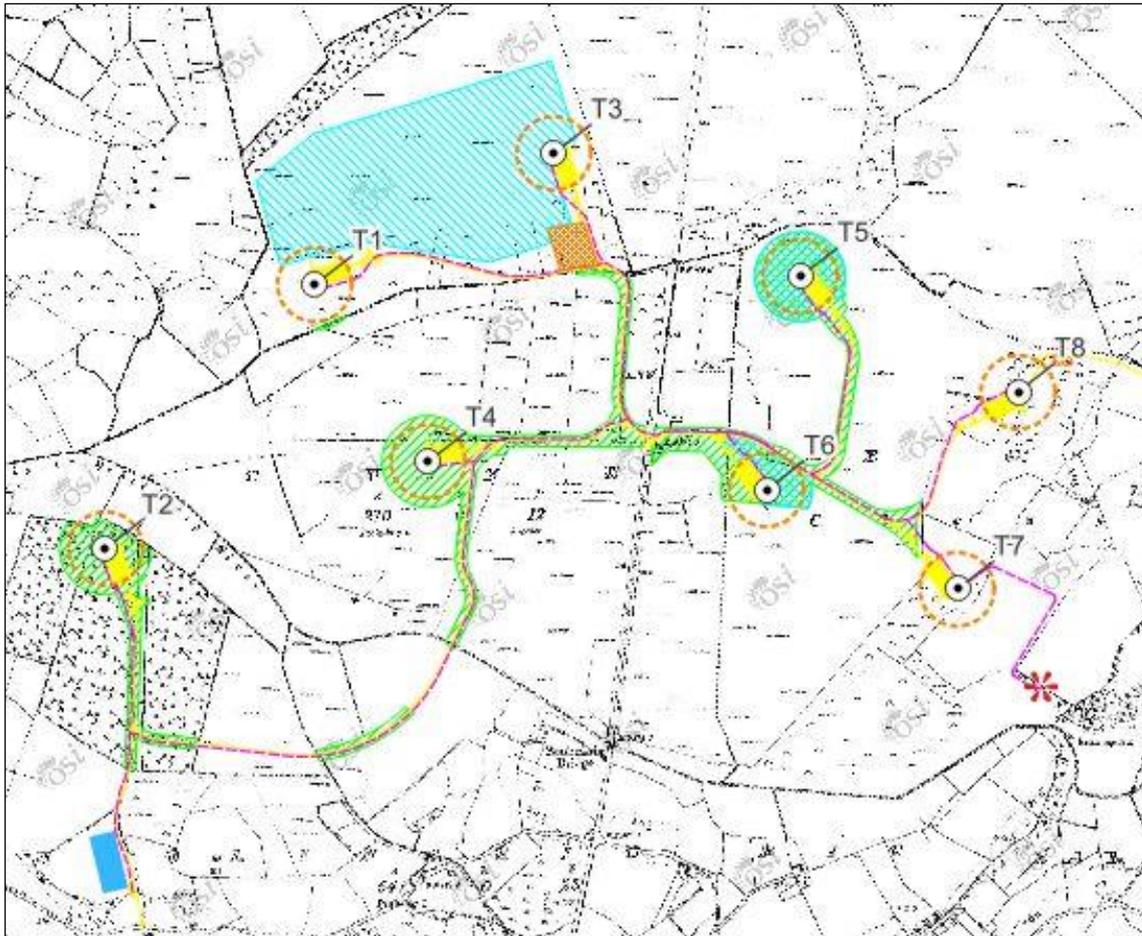
There are no archaeological, architectural or cultural features recorded on historic cartographic sources in the location of the temporary haul route works at the N52/N62 junction.



**Figure 10.5: Extract from First Edition 1:10,560 Ordnance Survey Map (1840), Showing Location of Turbines 1–8 & Associated Infrastructure**



**Figure 10.6 Extract from First Edition 1:2,500 Ordnance Survey map (1910), Showing Location of Turbines 1–8 & Associated Infrastructure**



**Figure 10.7: Extract from Third Edition 1:10,560 Ordnance Survey map (1912), Showing Location of Turbines 1-8 & Associated Infrastructure**

#### 10.4.4 Aerial Photographs

Aerial photographs held by Ordnance Survey Ireland ([map.geohive.ie](http://map.geohive.ie)) and Bing aerial photography ([www.bing.com/maps](http://www.bing.com/maps)) were consulted to examine for the presence of archaeological and architectural remains within the land take of the project.

Aerial photography records a similar landscape to that which was noted during the walkover survey, with the proposed turbines and associated access tracks located in forestry, medium to large fields enclosed by mature field boundaries and bog.

There was no evidence of any archaeological or architectural features recorded on aerial photography within the wind farm site.

There was no evidence of any archaeological or architectural features recorded on aerial photography within the grid connection or the location of the temporary works at the N52/N62 junction.

#### 10.4.5 Topographical Files of the National Museum of Ireland

Information on artefact finds and excavations from County Offaly is recorded by the National Museum of Ireland. Location information relating to such finds is important in

establishing prehistoric and historic activity in the study area.

Bog butter (National Museum of Ireland reference 1986:125) was recovered in Ballindown townland in 1986. No further information is provided in the Topographical Files.

There are no additional entries recorded in the Topographical Files of the National Museum of Ireland within the wind farm site.

#### 10.4.6 Previous Archaeological Fieldwork

Reference to Summary Accounts of Archaeological Excavations in Ireland ([www.excavations.ie](http://www.excavations.ie), [www.heritagemaps.ie](http://www.heritagemaps.ie)) confirmed that no fieldwork programmes have been carried out within the land take of the project.

Galros Bog was surveyed in 1997 by the Irish Archaeological Wetland Unit (Licence Number not recorded) as part of the Archaeological Survey of Ireland Peatland Survey. At that time 4 no. brushwood sites were identified within the bog. The sites were widely dispersed across the northern half of the bog and were all recorded in drain faces. Three no. of the sites were single isolated pieces of wood (RMP OF030-081, RMP OF030-082 and RMP OF030-083) while the fourth, a road-Class 3 Togher, (RMP OF030-080), consisted of closely placed east-west oriented brushwood flanked on either side by roundwood. A re-assessment survey (Licence Number 09E0415) was carried out by Archaeological Development Services Ltd. in 2009 on behalf of Bord na Móna. The objective of the reassessment survey was to reidentify any surviving previously recorded sites, identify new sites, and subsequently record all archaeological sites identified during the course of the survey. A handheld GPS unit was used to find the location of the above-mentioned 4 no. widely dispersed, previously identified sites but they were no longer extant. However, 2 no. new brushwood sites, including a platform and a deposit of archaeological wood, were identified in Whigsborough and Ballycollin townlands in the north eastern and eastern parts of the bog respectively. These 2 no. new sites have not been added to the Record of Monuments and Places but are known to be outside the land take of the project.

Clongawney Bog, which includes Galros West townland, was surveyed in 1994 by the Irish Archaeological Wetland Unit (Licence Number not recorded) as part of the Archaeological Survey of Ireland Peatland Survey. A total of 10 no. archaeological sites, which were located within a cluster in the south west corner of the bog, were recorded at that time. A re-assessment survey (Licence Number 09E0411) carried out by Archaeological Development Services Ltd. in 2009 on behalf of Bord na Móna noted that the location of the previously recorded sites was overgrown, and as a result the sites were no longer visible. The area immediately west remained in production and 2 no. previously unrecorded sites, including a possible platform and a deposit of archaeological wood, were noted.

Monitoring (Licence Number 04E0178) was carried out during topsoil-stripping at a sand and gravel pit at Boolinarig Big townland in 2004. Across the 4ha site topsoil sealed natural deposits of grey sands and gravels, except on the line of the access road, where buff coloured marl lay beneath peaty soil. Nothing of archaeological significance was recorded.

Monitoring (Licence Number 21E0291) of a 9 no. turbine wind farm was carried out in 2021 and 2022. Minor groundworks were located in Ballindown townland, but no

archaeological features or artefacts were revealed as a result of monitoring.

#### 10.4.7 Toponyms

Townland names are an important source in understanding the archaeology, geology, land-use, ownership and cultural heritage of an area. The wind farm and temporary haul route works at the N52/N62 junction are located within the following townlands:-

Name	Irish	Translation
Ballindown	<i>Baile an Dúnaidh</i>	Town of the encampment or fort.
Boolarig Big	<i>Buaille na nArg Mhór</i>	Big cattle-fold or summer pasture.
Cush	<i>An Chois</i>	Possibly comes from foot ( <i>i.e.</i> lands at the foot of a hill).
Eglis	<i>An Eaglais</i>	The church.
Galros West	<i>Gallros Thiar</i>	Gall Ros possibly translates as Wood of the Foreigners.

**Table 10.2: Toponyms**

#### 10.4.8 National Monuments

The Department of Housing, Local Government and Heritage maintains a database on a county basis of National Monuments in State Care: Ownership and Guardianship. The term National Monument is defined in Section 2 of the National Monuments Act (1930) as:-

*"a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto."*  
[www.archaeology.ie](http://www.archaeology.ie)).

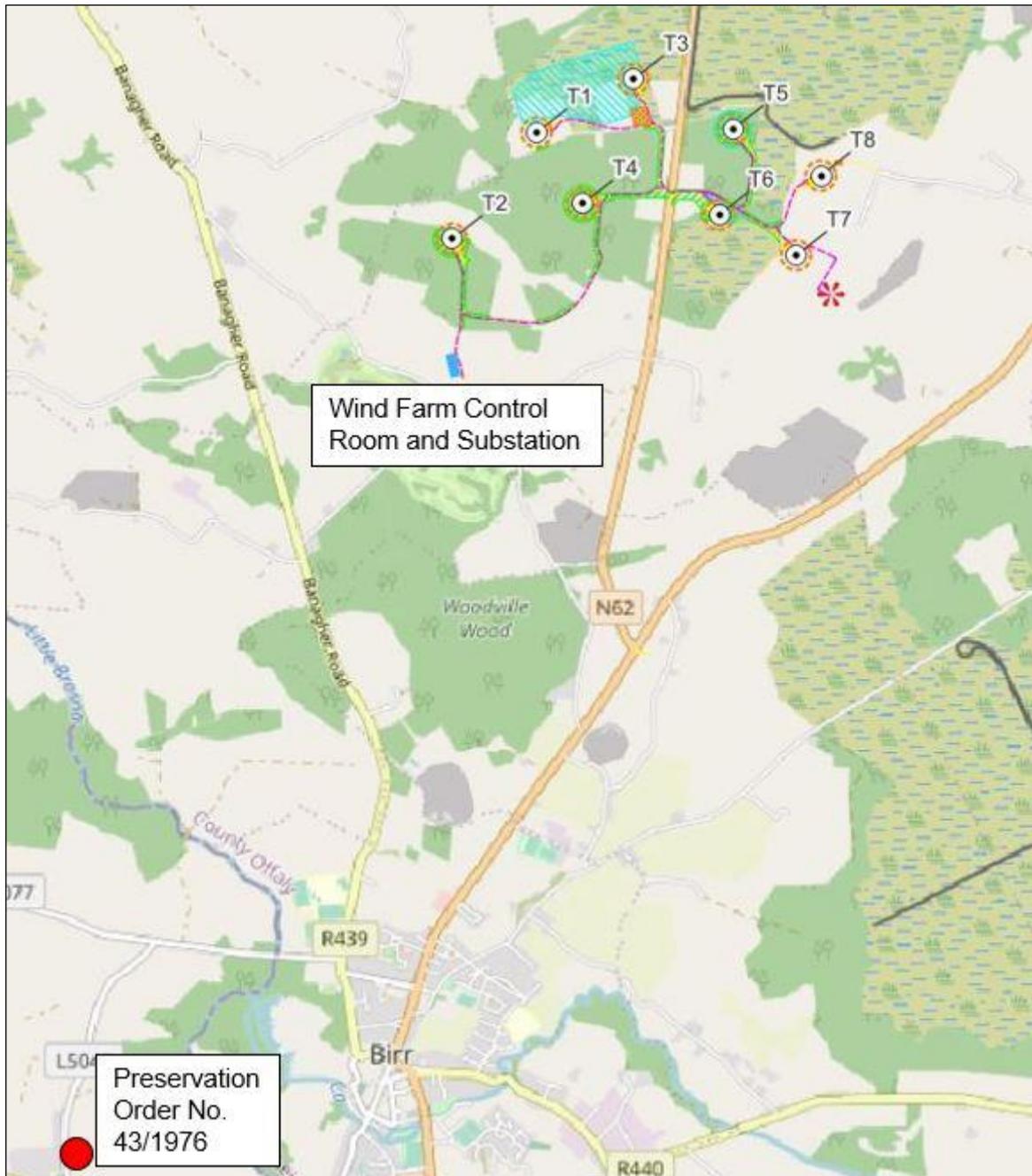
There are no National Monuments in State Care within the wind farm site or within 5km of the wind farm site.

There are no National Monuments in State Care within the grid connection or within 100m of the grid connection.

There are no National Monuments in State Care within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

The Department of Housing, Local Government and Heritage also maintains a database on a county basis of National Monuments with Preservation Orders or Temporary Preservation Orders.

There are no National Monuments with Preservation Orders or Temporary Preservation Orders within the wind farm site or within 1km of the wind farm site. There is 1 no. National Monument with a Preservation Order within 5km of the wind farm site (**Figure 10.8**). Preservation Order no. 43/1976. Motte and bailey castle. Located c. 5km south-west of the wind farm control room and substation and c. 5.7km south west of the nearest turbine (Turbine 2) in Killeen townland, County Tipperary.



**Figure 10.8: Preservation Order no. 43/1976 (Motte and Bailey castle), Located c. 5km South-west of the Wind Farm Control Room & Substation & c. 5.7km South-west of Turbine 2**

There are no National Monuments with Preservation Orders or Temporary Preservation Orders within the grid connection or within 100m of the grid connection.

There are no National Monuments with Preservation Orders or Temporary Preservation Orders within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

There are no World Heritage Sites or sites included in the Tentative List as being under

consideration for nomination to the World Heritage List within the wind farm site or within 20km of the wind farm site.

There are no World Heritage Sites or sites included in the Tentative List as being under consideration for nomination to the World Heritage List within the grid connection or within 100m of the grid connection.

There are no World Heritage Sites or sites included in the Tentative List as being under consideration for nomination to the World Heritage List within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

#### 10.4.9 County Development Plans

##### 10.4.9.1 Archaeological Heritage

###### Offaly County Development Plan 2021-2027

It is the Policy (BHP-33) of Offaly County Council (Offaly County Council 2021, 334) to:-

*“support and promote the protection and appropriate management and sympathetic enhancement of the county’s archaeological heritage within the Plan area, in particular by implementing the Planning and Development Act 2000 (as amended) and the National Monuments Act 1930 (as amended).”*  
(Offaly County Council 2021, 334).”

It is an Objective (BHO-05) of Offaly County Council (*ibid.*, 337) to:-

*“protect archaeological sites and monuments, and archaeological objects, which are listed in the Record of Monuments and Places, and to seek their preservation in situ (or at a minimum, preservation by record) through the planning process.”*

Table 10.1 of the Offaly County Development Plan (*ibid.*, 325) contains a list of *National Monuments in State Ownership in County Offaly*. There are no National Monuments in State Ownership recorded in the Offaly County Development Plan within the wind farm site or within 5km of the wind farm site.

There are no National Monuments in State Ownership recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no National Monuments in State Ownership recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

Table 10.2 of the Offaly County Development Plan (*ibid.*, 325 - 326) contains a list of *National Monuments in Guardianship of the State in County Offaly*. There are no National Monuments in Guardianship of the State recorded in the Offaly County Development Plan within the wind farm site or within 5km of the wind farm site.

There are no National Monuments in Guardianship of the State recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no National Monuments in Guardianship of the State recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

Table 10.3 of the Offaly County Development Plan (*ibid.*, 326) contains a list of *Monuments Protected by Preservation Order in County Offaly*. There are no

Monuments Protected by Preservation Order recorded in the Offaly County Development Plan within the wind farm site or within 5km of the wind farm site.

There are no Monuments Protected by Preservation Order recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no Monuments Protected by Preservation Order recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

The Offaly County Development Plan (*ibid.*, 327) contains a list of *Zones of Archaeological Potential* within the county. There are no Zones of Archaeological Potential recorded in the Offaly County Development Plan within the wind farm site or within 1km of the wind farm site. There is one Zone of Archaeological Potential recorded in the Offaly County Development Plan within 5km of the wind farm site. Birr Zone of Archaeological Potential is located c. 3.8km south of the proposed wind farm control room and substation and c. 4.6km south of the nearest turbine (Turbine 2). The extent of the Zone of Archaeological Potential is not recorded in map form in the County Development Plan, but the Archaeological Zone of Notification as recorded by National Monuments Service ([www.archaeology.ie](http://www.archaeology.ie)) is shown on **Figure 10.9**.



### Figure 10.9: Birr Archaeological Zone of Notification

There are no Zones of Archaeological Potential recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no Zones of Archaeological Potential recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

There are 23 no. recorded Early Medieval monasteries in County Offaly. Conservation Management Plans have been prepared for Clonmacnoise, Lemanaghan, Durrow, Rahan and Killeigh (*ibid.*, 327), none of which are within the wind farm site or within 5km of the wind farm site.

There are no recorded Early Medieval monasteries with Conservation Management Plans within the grid connection or within 100m of the grid connection.

There are no recorded Early Medieval monasteries with Conservation Management Plans within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

#### Tipperary County Development Plan 2022–2028

It is the Policy (13-4) of Tipperary County Council (Tipperary County Council 2022, 198) to:-

*“Safeguard sites, features and objects of archaeological interest, including Recorded Monuments, National Monuments and Monuments on the Register of Historic Monuments, and archaeological remains found within Zones of Archaeological Potential located in historic towns and other urban and rural areas. In safeguarding such features of archaeological interest, the Council will seek to secure their preservation (i.e. in situ or in exceptional circumstances preservation by record) and will have regard to the advice and recommendation of the Department of Arts, Heritage and the Gaeltacht. Where developments, due to their location, size or nature, may have implications for archaeological heritage, the Council may require an archaeological assessment to be carried out. This may include for a requirement for a detailed Visual Impact Assessment of the proposal and how it will impact on the character or setting of adjoining archaeological features. Such developments include those that are located at, or close to an archaeological monument or site, those that are extensive in terms of area (1/2 ha or more) or length (1 kilometre or more), those that may impact on the underwater environment and developments requiring EIA”.*

Section 13.7.1 of the *Tipperary County Development Plan* (*ibid.*, 196) contains a list of the six *Walled Towns of Tipperary*. There are no *Walled Towns* recorded in the Tipperary County Development Plan within 5km of the wind farm site.

#### 10.4.9.2 Architectural Heritage

#### Offaly County Development Plan 2021-2027

It is the Policy (BHP-01) of Offaly County Council (Offaly County Council 2021, 331) to:-

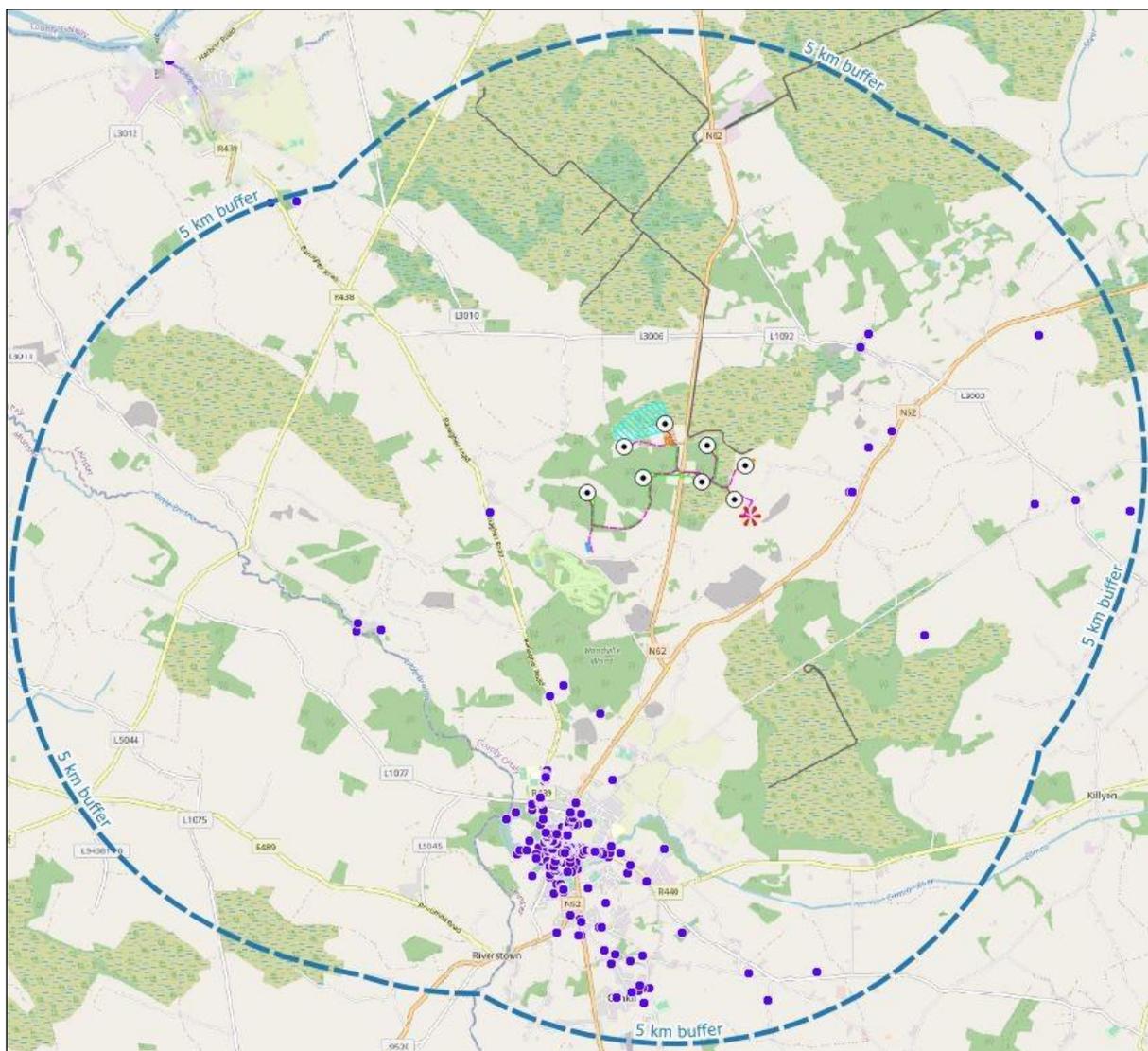
*“ensure the protection, sympathetic and sensitive modification, alteration, extension or reuse of protected structures or parts of protected structures, and the immediate surrounds included and proposed for inclusion in the Record of*

*Protected Structures that are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, together with the integrity of their character and setting."*

It is an Objective (BHO-01) of Offaly County Council (*ibid.*, 337) to:-

*"review the Record of Protected Structures on an on-going basis and make additions, deletions and corrections as appropriate over the period of this Plan."*

The Offaly County Development Plan contains the *Record of Protected Structures* for the county. There are no Protected Structures recorded in the Offaly County Development Plan within the wind farm site or within 1km of the wind farm site. There are c. 370 no. Protected Structures recorded in the Offaly County Development Plan within 5km of the wind farm site, the majority of which are located in Birr (**Figure 10.10**).



There are no Protected Structures recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no Protected Structures recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

Section 10.4 of the *Offaly County Development Plan (ibid., 320)* contains a list of *Architectural Conservation Areas* in County Offaly. There are no Architectural Conservation Areas recorded in the Offaly County Development Plan within the wind farm site or within 5km of the wind farm site.

There are no Architectural Conservation Areas recorded in the Offaly County Development Plan within the grid connection or within 100m of the grid connection.

There are no Architectural Conservation Areas recorded in the Offaly County Development Plan within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

Section 10.5 of the *Offaly County Development Plan (ibid., 321)* makes reference to the *Vernacular Buildings* of County Offaly. There are no vernacular buildings within the wind farm site.

Section 10.6 of the *Offaly County Development Plan (ibid.)* makes reference to the *Industrial Heritage* of County Offaly. There are no Industrial Heritage features within the wind farm site.

#### Tipperary County Development Plan 2022–2028

It is the Policy (13-1) of Tipperary County Council (Tipperary County Council 2022, 198) to:-

*“encourage and support the sympathetic restoration, re-use and maintenance of protected structures thereby ensuring their conservation and protection. In considering proposals for development, the Council will have regard to the Architectural Heritage Protection Guidelines for Planning Authorities, (DAHG 2011) or any amendment thereof, and proposals that will have an unacceptable impact on the character and integrity of a protected structure or adjoining protected structure will not be permitted.”*

Volume 4 of the Tipperary County Development Plan (2022) contains the Record of Protected Structures for the county. There are 21 no. Protected Structure recorded in the Tipperary County Development Plan within 5km of the wind farm site.

Volume 4 of the Tipperary County Development Plan (2022) contains a list of Architectural Conservation Areas for the county. There are no Architectural Conservation Areas recorded in the Tipperary County Development Plan within 5km of the wind farm site.

#### *10.4.9.3 Cultural Heritage*

#### Offaly County Development Plan 2021-2027

The *Offaly County Development Plan (2021)* does not contain any designated lists or sites of cultural heritage importance or significance.

#### Tipperary County Development Plan 2022 – 2028

The *Tipperary County Development Plan (2022)* does not contain any designated lists

or sites of cultural heritage importance or significance.

#### 10.4.10 National Inventory of Architectural Heritage

##### 10.4.10.1 Building Survey

The National Inventory of Archaeological Heritage maintains a non-statutory register of buildings, structures, etc. recorded on a county basis ([www.buildingsofireland.ie](http://www.buildingsofireland.ie)).

There are no structures recorded on the National Inventory of Architectural Heritage within the wind farm site or within 1km of the wind farm site.

There are no structures recorded on the National Inventory of Architectural Heritage within the grid connection or within 100m of the grid connection.

There are no structures recorded on the National Inventory of Architectural Heritage within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

##### 10.4.10.2 Historic Gardens & Designed Landscapes

There are no historic gardens or designed landscapes recorded on the National Inventory of Architectural Heritage within the wind farm site.

There are no historic gardens or designed landscapes recorded on the National Inventory of Architectural Heritage within the grid connection.

There are no historic gardens or designed landscapes recorded on the National Inventory of Architectural Heritage within the temporary haul route works location at the N52/N62 junction.

#### 10.4.11 Forestry Replant Lands

It is proposed to plant c. 23ha of forestry at Drumagelvin and Drumleek South townlands, County Monaghan (see **Chapter 3** for further details). The proposed forestry re-plant will be located in two parcels of land. There are no protected archaeological, architectural or cultural heritage features recorded within the proposed northern re-plant lands.

RMP MO020-024 (redundant record) is located within the proposed southern re-plant lands. It is noted that a dotted circle measuring approximately 40m in diameter was recorded on historic cartographic sources at this location. A 2012 site visit however concluded that it is the site of a natural rock outcrop and is therefore of no archaeological significance ([www.archaeology.ie](http://www.archaeology.ie)).

There are no archaeological, architectural or cultural heritage features recorded within the proposed southern re-plant lands.

There are no archaeological, architectural or cultural heritage features recorded on historic cartographic sources with the proposed replant lands. There is no evidence of any archaeological or architectural features recorded on aerial photography within the proposed replant lands.

#### 10.4.12 Site Visit

Field inspection is necessary to determine the extent, character and condition of archaeological, architectural and cultural heritage features, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through

topographical observation and local information. The windshield survey for the grid connection was carried out on 19 October 2022 in wet weather conditions. The site visit for Turbines 1 – 8 was carried out on 20 October 2022 in dry weather conditions.

Turbine 1 (**Plate 10.1**) will be located in cutover bog/grasslands on the west side of the N62 in Galros West townland, close to the Cush townland boundary. The location of Turbine 1 is partially accessed by an east/west oriented farm track off the N62. Turbine 1, its associated hardstand and turning area will be located in 4 no. rectangular peat fields, with forestry to the south on the opposite side of an unnamed stream. The wider area was previously used for peat harvesting. The location of Turbine 1 was relatively dry underfoot, but got wetter to the north. No archaeological features or artefacts were revealed in the vicinity of Turbine 1.

The location of Turbine 2 was recorded as woodland.

Turbine 3 (**Plate 10.2**) will be located in a cutover peat area with evidence for recent turf-cutting. The field was partly vegetated but with over 70% exposed dark brown/black, well-humified peat. Naturally occurring wood and root was noted on the field surface. Exposed drains revealed peat in excess of 1m deep. No archaeological features or artefacts were revealed in the vicinity of Turbine 3.

The location of Turbine 4 was recorded as forestry plantation.

The location of Turbine 5 was recorded as forestry plantation.

The location of Turbine 6 was recorded as forestry plantation.

Turbine 7 (**Plate 10.3**) will be located in a level to slightly undulating reclaimed field abutting bog, with higher ground to the east. No archaeological features or artefacts were revealed in the vicinity of Turbine 7.

The location of Turbine 8 (**Plate 10.4**) was recorded as being under grass, and towards the base of a hill with higher ground to south east. Field clearance, comprising a heap of large boulders, was noted on the northern side of the field, close to the boundary with an existing farm track. The eastern side of the field is slightly undulating while the west side is low-lying, level and with a mature deciduous tree at the centre. No archaeological features or artefacts were revealed in the vicinity of Turbine 8.

No archaeological, architectural or cultural heritage features were revealed within the wind farm site, including any watercourses, as a result of carrying out the walkover survey.

No archaeological, architectural or cultural heritage features were revealed within the grid connection as a result of carrying out the windshield survey.



**Plate 10.1: General Location of Turbine 1**



**Plate 10.2: General Location of Turbine 3**



**Plate 10.3: General location of Turbine 7**



**Plate 10.4: General Location of Turbine 8**

## 10.5 Description of Likely Effects

All elements of the project are assessed as having the potential to affect or impact upon archaeological, architectural or cultural heritage features either during the construction phase through excavations, or through visual effects during the operational phase.

Construction phase effects may arise as a result of the development of turbine foundations and hardstand areas, access tracks, underground cabling, grid connection works, road upgrade works and associated activities; each of which will involve the mechanical excavation of overburden down to and through geologically deposited strata at their identified locations. Operational phase effects may arise as a result of the visual effects resulting from the presence of the proposed wind turbines in the landscape. Decommissioning phase effects are assessed as likely to be similar to the construction phase but of a reduced magnitude and significance.

As a result of carrying out this assessment, the following likely archaeological, architectural and cultural heritage direct, indirect, construction, operational, decommissioning, cumulative and residual effects have been assessed. The following sections undertake an assessment of all elements of the project described in **Chapter 3**.

### 10.5.1 Construction Phase

#### 10.5.1.1 Archaeological Resource

There are no Recorded Monuments or any additional statutorily protected archaeological features within the footprint of the project (including wind farm, grid connection, the temporary works at the N52/N62 junction and forestry re-plant lands). As a result, there will be no direct or indirect construction phase effect on the recorded archaeological resource.

There are 4 no. Recorded Monuments within 1km of the wind farm site, 2 no. of which are no longer extant. There is 1 no. Recorded Monument within 100m of the grid connection.

It is assessed that there will be a likely permanent, direct and imperceptible construction phase effect on any previously unrecorded archaeological remains that may exist within the project site and which may be discovered during the construction phase.

It is assessed that there will be a likely temporary, reversible and imperceptible construction phase visual and noise effect on the archaeological resource

It is assessed that there will be a likely permanent, direct and imperceptible construction phase effect on any townland, parish or barony boundaries that may be impacted on by the project.

There will be no direct or indirect construction phase effect on any watercourses. Where access tracks are required to cross manmade drainage ditches, these will be piped or spanned with an appropriate bridging structure. Where access tracks cross a natural watercourse, bottomless culverts will be installed (where possible). Crossing the Rapemills River will be fully clear span, negating the need for any in-river culvert structures.

#### 10.5.1.2 Architectural Resource

There are no Protected Structures within the wind farm site or within 1km of the wind farm site.

There are no Protected Structures within the grid connection or within 100m of the grid connection.

There are no Protected Structures within the temporary works location at the N52/N62 junction or within 100m of the N52/N62 junction.

It is assessed that there will be no likely direct or indirect construction phase effect on the architectural resource.

#### 10.5.1.3 Cultural Heritage Resource

There are no protected cultural heritage features within the footprint of the project. It is assessed that there will be no likely direct or indirect construction phase effect on the cultural heritage resource.

### 10.5.2 Operational Phase

#### 10.5.2.1 Archaeological Resource

There are no Recorded Monuments within the wind farm site. There are 4 no. Recorded Monuments within 1km of the wind farm site, 2 no. of which are no longer extant. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.2**), that there will be a likely long-term, reversible and moderate operational phase visual effect on these Recorded Monuments. Following decommissioning any moderate effects will be entirely reversed.

There is 1 no. National Monument with a Preservation Order within 5km of the wind farm site. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.2**), that there will be a likely long-term, reversible and imperceptible operational phase visual effect on this National Monument. Following decommissioning the imperceptible effect will be entirely reversed.

It is assessed that operation of the grid connection and the temporary haul route works at the N52/N62 junction will have no likely operational phase effects on the archaeological resource.

#### 10.5.2.2 Architectural Resource

There are no Protected Structures within the wind farm site or within 1km of the wind farm site. There are approximately 391 no. Protected Structures within 5km of the wind farm site. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.2**), that there will be a likely long-term, reversible and slight-not significant operational phase visual effect on these Protected Structures. Following decommissioning any slight-not significant effects will be entirely reversed.

The Landscape Chapter (**Chapter 9**) and the associated visual impact analysis (**Annex 9.1**) assessed 3 no. viewpoints in the vicinity of Birr Castle. These are VP21 (Walled Garden within Birr Castle and Demesne), VP23 ('The Leviathan' telescope within Birr Castle and Demesne) and VP24 (St John's Hall, William Parsons, 3rd Earl of Rosse Statue, R440). The Landscape Chapter notes (**Section 9.4.2.1**):-

*"Of the three heritage/amenity views within Birr (VP21, VP23, & VP24), all are screened and therefore feature a negligible magnitude of impact, resulting in imperceptible impact significance. Two of these (VP21 & VP23) are located*

*within the grounds of Birr Castle, the most notable heritage and amenity feature of Birr and as such, VP23 has the highest visual receptor sensitivity of this assessment (very high). The third (VP24) is located in close proximity to a number of listed heritage sites, along the R440 regional road, so is also representative of 'Centres of Population' and 'Major Route' receptors".*

The Landscape Chapter also notes **(Section 9.4.1.2):-**

*"In terms of scale and function, the proposed wind farm is well assimilated within the context of the Central Study Area, more so to the north than the south of the site. This is due to the broad scale of the landform and landscape elements, with low intensity rural land use patterns, to the north of the site, which varies south of the site, closer to the periphery of Birr. The impact on the south of the site is mitigated by the physical division provided by the eskers which skirt the central study area to the south and east. These attributes prevent the height and extent of the proposed wind farm causing the type of scale conflict that can occur in more intricate landscape areas".*

It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.2**), that there will be a likely long-term, reversible and imperceptible operational phase visual effect on Birr Castle and Demesne. Following decommissioning any imperceptible effects will be entirely reversed.

It is assessed that operation of the grid connection and the temporary haul route works at the N52/N62 junction will have no likely operational phase effects on the architectural resource.

#### 10.5.2.3 Cultural Heritage Resource

There are no protected cultural heritage features within the footprint of the project. It is assessed that there will be no likely direct or indirect operational phase effect on the cultural heritage resource.

#### 10.5.3 Decommissioning Phase

It is assessed that there will be no likely decommissioning phase effects on the archaeological, architectural or cultural heritage resource. The decommissioning phase will result in the removal of wind farm infrastructure from the site. Once the wind turbines have been dismantled and removed, the below-ground infrastructure will be left largely *in situ* and covered with topsoil (see **Chapter 3** for full details of the decommissioning process).

This naturalisation process will revert the landscape of the wind farm site to a condition similar to the current landscape. The decommissioning phase will result in the removal of infrastructure and is likely to result in an improvement in the archaeological, architectural and cultural heritage resource. However, any improvement will be negligible given the low magnitude and significance of the predicted construction and operational phase effects.

#### 10.5.4 Cumulative Effects

Cumulative effects are defined as:-

*"The addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects" (Environmental Protection Agency 2022, Section 3: 52).*

Cumulative effects encompass the combined effects of developments or activities on a range of receptors. In this case, the receptors are archaeological, architectural and cultural heritage sites. Cumulative effects at the construction, operational and decommissioning phases are considered. All developments listed at **Chapter 1** have been assessed; however, due to their scale and relative proximity, the developments listed below are considered to be of particular relevance.

There are no existing, permitted or proposed wind farms within the immediate vicinity of the wind farm site. There are 5 no. existing, permitted or proposed wind farms within 15km of the wind farm site, as follows:-

- Proposed Carrig Renewables Wind Farm; comprising 7 no. turbines and locates c. 10km to the south west at its nearest point;
- Permitted Derrinlough Wind Farm; comprising 21 no. turbines and located c. 3km to the north at its nearest point;
- Existing Carrig and Skehanagh Wind Farms; comprising 3 no. turbines and 5 no. turbines respectively and located c. 13km to the south and south west at their nearest points;
- Existing Leabeg Wind Farm; comprising 2 no. turbines and located c. 11km to the north east at its nearest point;
- Existing Meenwaun Wind Farm; comprising 4 no. turbines and located c. 2km to the north west at its nearest point; and
- Existing Cloghan Wind Farm; comprising 9 no. turbines and located c. 4km to the north at its nearest point.

Construction phase cumulative effects are largely concerned with direct impacts on any unrecorded sub-surface archaeological features or artefacts which may exist within the area where it is proposed to construct the project. There will be no interaction between any archaeological remains which might survive within the project site and the above-mentioned 6 no. wind farms. Since likely direct effects on the archaeological, architectural and cultural heritage resource have been assessed and mitigated (in respect of the subject project), cumulative direct effects will not occur during the construction or decommissioning phases of the project.

In terms of other (non-wind energy) existing, permitted or proposed developments, it is assessed that there are no developments which could act in combination with the project to result in direct or indirect construction or decommissioning phase effects.

An assessment of National Monuments within 5km of the wind farm site has been undertaken to assess for likely cumulative effects during the operational phase. The likelihood of additional turbines being visible in the wider landscape from National Monuments is such that cumulative effects could occur, as it is not possible to mitigate the effects on setting arising from turbines at the operational stage.

Given the distance of the existing Leabeg Wind Farm, the existing Carrig and Skehanagh Wind Farms, and the proposed Carrig Renewables Wind Farm from the wind farm site, along with the extent of existing screening over such intervening distances, these wind farms have been screened out for operational phase cumulative effects on archaeological, architectural or cultural heritage remains.

There is 1 no. National Monument within 5km of the wind farm site. There are no additional wind farms (either existing, permitted or proposed) within 5km of the above-mentioned National Monument. As such, it is assessed that there will be no operational phase cumulative effect on this National Monument.

Overall, it is assessed that the operation of the wind farm, in combination with all developments listed at **Chapter 1**; including Derrinlough Wind Farm, Cloghan Wind Farm and Meenwaun Wind Farm; is likely to result in a long-term, reversible and slight cumulative visual effect with the Cush Wind Farm on the archaeological, architectural and cultural heritage resource.

#### 10.5.5 'Do-Nothing' Effects

If the project were not to proceed, there would be no likely effect on the archaeological, architectural or cultural heritage resource.

#### 10.5.6 Interactive Effects

The excavation of soil during the construction of the project may result in the discovery of previously unrecorded cultural heritage features; and, therefore, it is considered that there is a likelihood for interaction between land and soil and cultural heritage. However, on the basis of this assessment, it is concluded that the level of interaction will likely not be significant.

During the operational phase, it is assessed that the project will likely result in imperceptible to moderate visual effects on cultural heritage features; and, therefore, will result in an interaction between cultural heritage and landscape. However, given that the project will be operational for a period of 35-years, the effect is not assessed to be long-term in the context of the lifetime of the cultural heritage features and any effects are entirely reversible, and will be reversed, following the decommissioning phase.

#### 10.5.7 Risk of Accidents

It is assessed that there will be no likely effects on the archaeological, architectural or cultural heritage resource as a result of any unplanned accidents which may occur during either the construction, operational or decommissioning phases.

#### 10.5.8 Worst-Case Effects

It is assessed that, under a 'worst-case' scenario, and in the absence of mitigation, there would be a likely permanent and direct construction phase effect on any previously unrecorded archaeological remains that may exist within the project site.

### 10.6 Mitigation & Monitoring Measures

#### 10.6.1 Mitigation Measures

- Archaeological monitoring of all excavations associated with the construction of the wind farm shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring;
- Archaeological monitoring of all excavations associated with the grid connection infrastructure shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring;
- Archaeological monitoring of all excavations within the temporary haul route

works at the N52/N62 junction shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring;

- Archaeological monitoring of all excavations at townland, parish and barony boundaries shall be carried out. Monitoring will be carried out under licence to the Department of Housing, Local Government and Heritage and the National Museum of Ireland. Provision will be made for the full excavation and recording of any archaeological features or deposits that may be exposed during monitoring;
- Written and photographic records will be created of any townland, parish or barony boundaries that may be impacted on. The written and photographic records will be created in advance of excavations commencing on site, and
- A redundant record (RMP MO020-024) is located with the southern forestry replant lands. Even though this feature is now considered to be non-archaeological, a 30m buffer zone will be established around its perimeter.

### 10.6.2 Micrositing

There are no Recorded Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the wind farm site, the grid connection or the temporary haul route works at the N52/N62 junction. As a result of mitigation measures recommended in **Section 10.6.1**, the micrositing of infrastructure within the tolerances outlined in **Chapter 3** will not result in any additional effect on archaeological, architectural or cultural heritage features.

### 10.6.3 Monitoring Measures

With the exception of the mitigation measures recommended in **Section 10.6.1** which will be implemented in advance of and during the construction phase, there are no future monitoring requirements.

## 10.7 Residual Effects

Following the implementation of the above mitigation measures, it is assessed that there will be no likely significant residual effects during the construction or decommissioning phases of the project. Residual effects during the operational phase are addressed below.

### 10.7.1 Archaeological Resource

It is assessed that there will be a likely residual, long-term, reversible and moderate operational phase visual effect on 4 no. Recorded Monuments, 2 no. of which are no longer extant, within 1km of the wind farm site.

It is assessed that there will be a likely residual, long-term, reversible and imperceptible operational phase visual effect on 1 no. National Monument with a Preservation Order within 5km of the wind farm site.

It is assessed that there will be no residual operational phase effects on the archaeological resource as a result of works associated with the grid connection or the temporary works at the N52/N62 junction.

### 10.7.2 Architectural Resource

It is assessed that there will be a likely residual, long-term, reversible and slight-not significant operational phase visual effect on approximately 391 no. Protected Structures within the 5km of the wind farm site.

It is assessed that there will be a likely residual long-term, reversible and imperceptible operational phase visual effect on Birr Castle and Demesne.

It is assessed that there will be no residual operational phase effects on the architectural resource as a result of works associated with the grid connection or the temporary works at the N52/N62 junction.

### 10.7.3 Cultural Heritage Resource

It is assessed that there will be no likely significant residual effects on the cultural heritage resource.

## 10.8 Summary

The results of this assessment, in relation to construction, operation, decommissioning, cumulative and residual effects have been set out in the foregoing sections. This assessment has concluded that the effect on the archaeological, architectural and cultural heritage resource of the project (wind farm, grid connection, temporary works at the N52/N62 junction, forestry re-plant lands and associated activities) will in general be long-term, reversible and will vary from imperceptible to moderate.

There will be no likely significant direct or indirect construction phase or decommissioning phase effects on the recorded archaeological, architectural and cultural heritage resource. However, there will be a likely long-term, reversible and moderate operational phase visual effect on 4 no. Recorded Monuments, 2 no. of which are no longer extant, within 1km of the wind farm site. In addition, there will be a likely long-term, reversible and imperceptible operational phase visual effect on 1 no. National Monument with a Preservation Order within 5km of the wind farm site, a likely long-term, reversible and slight-not significant operational phase visual effect on approximately 391 no. Protected Structures within 5km of the wind farm site and a likely long-term, reversible and imperceptible operational phase visual effect on Birr Castle and Demesne. Following the implementation of mitigation measures outlined in this chapter, the likely residual effects of the project remains imperceptible to moderate.

There will be a likely residual, long-term, reversible and moderate operational phase visual effect on 4 no. Recorded Monuments, 2 no. of which are no longer extant, within 1km of the wind farm site. In addition, there will be a likely residual long-term, reversible and imperceptible operational phase visual effect on 1 no. National Monument with a Preservation Order within 5km of the wind farm site, a likely residual long-term, reversible and slight-not significant operational phase visual effect on approximately 391 no. Protected Structures within 5km of the wind farm site and a likely residual long-term, reversible and imperceptible operational phase visual effect on Birr Castle and Demesne. However, as noted above, the project provides for an operational phase of 35-years and, as a result, any likely operational phase effects will be entirely reversed following the decommissioning of the project.

This assessment has further concluded that the project will not result in any likely significant cumulative effects with other existing, permitted or proposed development; including those identified at **Chapter 1**.

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Tipperary County Council

