White Hill Wind Farm

Environmental Impact Assessment Report

Chapter 10: Cultural Heritage

White Hill Wind Limited

Galetech Energy Services
Clondargan, Stradone, Co. Cavan Ireland
Telephone +353 49 555 5050
www.galetechenergy.com

Contents

10.1 Introduction

This chapter has been prepared to assess and define 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 includes an identification of likely significant impacts or effects which may arise and outlines mitigation measures, based on current information, which may be used to avoid, reduce or offset any likely adverse effects.

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 impacts of the project on the archaeological, architectural and cultural heritage resource.

The following key issues 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**:-

- 7 no. wind turbines with an overall tip height of 185m, and all associated ancillary infrastructure;
- All associated and ancillary site development, excavation, construction, landscaping and reinstatement works, including the provision of site drainage infrastructure;
- Upgrades to the turbine component haul route; and,
- Construction of an electricity substation and installation of c. 15km of underground grid connection cable between the White Hill Wind Farm and the existing Kilkenny 110kV electricity substation.

The wind farm site traverses the administrative boundary between counties Carlow and Kilkenny; with 4 no. turbines located in Co. Carlow and 3 no. turbines within Co. Kilkenny. The electricity substation is located within Co. Carlow while the majority, c. 14km, of the underground electricity line is located in Co. Kilkenny. Off-site and secondary developments; including the forestry replant lands and candidate quarries which may supply construction materials; also form part of the project.

The turbine component haul route and associated upgrade works as described in **Chapter 3**. It is envisaged that the turbines will be transported from the Port of Waterford, through the counties of Kilkenny, Waterford, Carlow and Kildare to the project site. However, as the route follows motorway and national roads through

counties Waterford and Kildare, it is assessed that there is no likelihood of effects on cultural heritage 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

10.1.3.1 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 180 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 wind farm to assess the presence of statutorily protected archaeological remains (RMP sites). A 20km study area has been applied around the wind farm 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 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 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 proposed grid connection, while the area of land take associated with the temporary access track between the N78 and L1834 and the forestry re-plant 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 Co. Carlow, Co. Kilkenny and Co. Monaghan;
- 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;
- *Carlow County Development Plan 2022–2028* and the *Kilkenny City and County Development Plan 2021–2027*;
- 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.

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

National Inventory of Architectural Heritage 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 counties Carlow, Kilkenny and Monaghan, 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.

The site visit was carried out on 15 September 2021 in dry weather conditions and areas of land take at the wind farm site were walked and visually assessed. The grid connection route was assessed by means of a windshield survey. The area of land

take required for the temporary access track between the N78 and L1834 was assessed by means of a walkover survey; while Black Bridge and Crettyard Bridge were also visually assessed.

Figure 10.1: Aerial photograph showing location of Turbines 1–7 and associated infrastructure

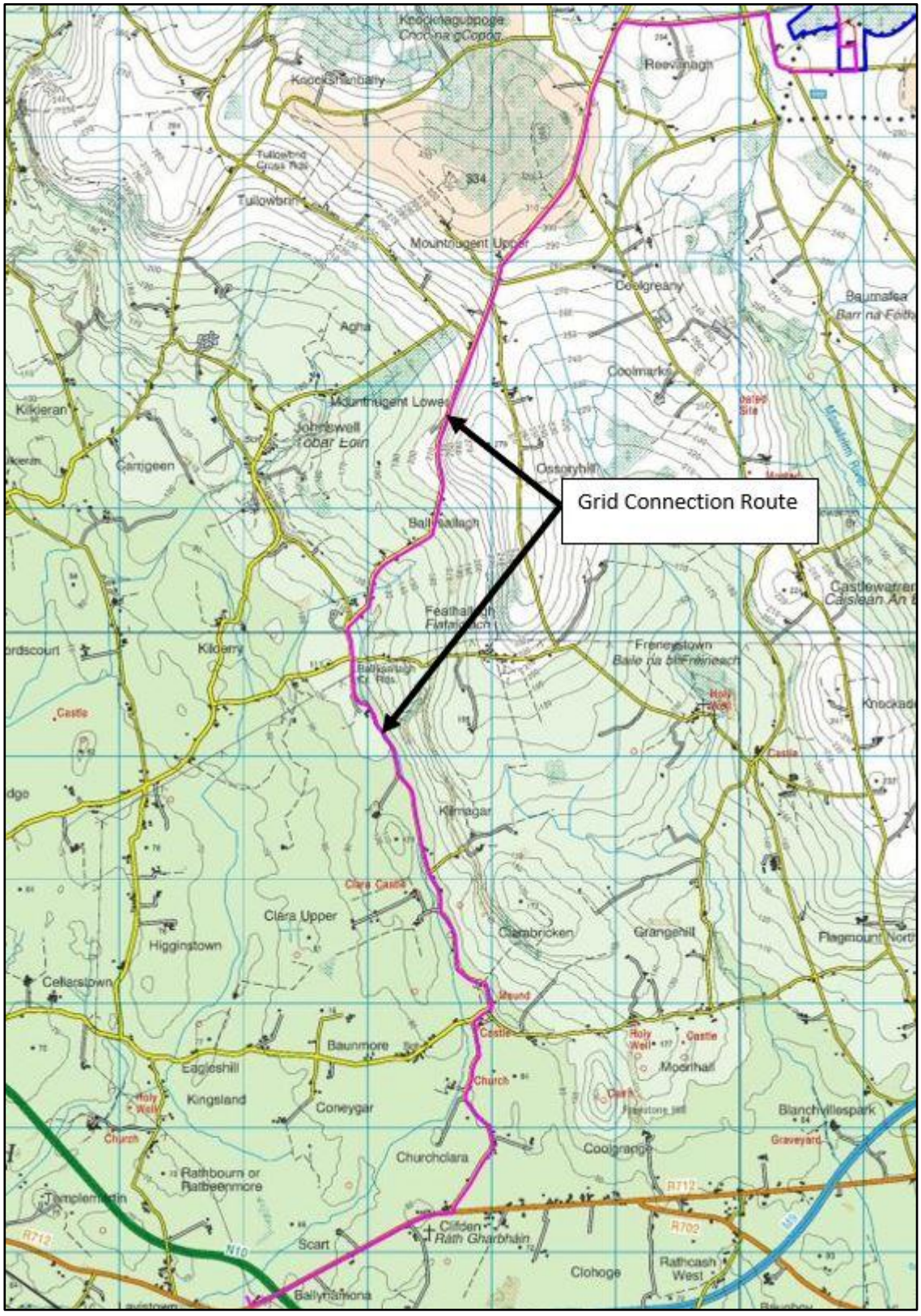

Figure 10.2: Grid Connection Route

Figure 10.3: 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 wind farms and their 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: 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 and 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 man-made 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.archaeeology.ie).

10.3.2 Architectural and 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 and Historical Background

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 Co. Kilkenny dates from the Mesolithic period. A site was discovered in Newrath townland during testing of the N25 Waterford City Bypass (National Roads Authority, 2006) on the edge of a wetland area. Mesolithic activity was encountered in two areas on the boulder clay at the base of organic deposits. Flint blades (Bann flakes) of Later Mesolithic date (c. 5500-4000 BC) were found on the original dry land surface under approximately 2m of peat

The earliest evidence for settlement in Co. Carlow dates from the Neolithic period (c. 4000-2400 BC). During this period the population became more settled with a subsistence economy based on crop growing and stock-raising. Ten megalithic structures and six portal tombs are recorded in Co. Carlow (www.archaeology.ie).

By the 4th millennium BC, a farming economy was developing that involved forest clearance. Archaeological and pollen records show an increasingly settled landscape with some fixed field boundaries for livestock and cereal production. While farming did spread throughout the country, the preference was for light soils and upland margins with free draining soils and light woodland cover.

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.

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*.

During this turbulent period roughly circular defensive enclosures known as ringforts 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 the 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 7th and 9th centuries AD (Stout 1997, 22-31).

Ringforts are considered to be the most common indicator of settlement during the Early Medieval period. 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.

Enclosures belong to a classification of monument whose precise nature is unclear. Often they may represent ringforts, which have either been damaged to a point where they cannot be positively recognised, or are smaller or more irregular in plan

than the accepted range for a ringfort. An Early Medieval date is generally likely for this site type, though not a certainty.

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 5th century AD. The early churches tended to be constructed of wood or post-and-wattle, although between the late 8th and 10th 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 8th century and their subsequent settlement during the following two centuries marked the first ever foreign invasion of Ireland. Viking settlement evidence is scarce and has been found in Cork, Dublin and Waterford, however excavations there 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 suggest 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 12th 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. Mottes were raised mounds of earth topped with a wooden or stone tower, while the bailey was an enclosure surrounded by an earthen ditch with a timber palisade used to house ancillary structures, horses and livestock.

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. As in the case of ringforts, these enclosures protected a house and outbuildings usually built of wood. They appear to have been constructed in the latter part of the 13th century though little precise information is available.

More substantial stone castles followed the motte and bailey and moated sites in the 13th and 14th centuries. Tower houses are regarded as a late type of castle and were erected from the 14th to early 17th centuries. Their primary function was defensive, with narrow windows and a tower often surrounded by a high stone wall (bawn). An Act of Parliament of 1429 gave a subsidy of £10 to "*liege*" men to build castles of a minimum size of 20ft in length, 16ft in breadth and 40ft in height (6m x 5m x 12m). By 1449 so many of these £10 castles had been built that a limit had to be placed on the number of grants being made available. The later tower houses were often smaller, with less bulky walls and no vaulting.

Oldleighlin, located approximately 4km east of the wind farm area, is the site of a monastery (RMP CW011-016) founded in the early 7th century by St. Gobban and which was plundered by the Vikings in 916 and burned in 1060. A church synod took place there in 630 to consider the date on which Easter Day should fall. It functioned as one of the five bishoprics of Leinster in the early 12th century. The present building, which is one of the smallest Medieval cathedrals in Ireland, was begun by Donatus, Bishop of Leighlin, in c. 1152 – 1181, and was completed by the end of the 13th century. The first Norman bishop was appointed in the early 13th century and this probably led to the establishment of the borough. The site was gradually abandoned during the 14th century but was reconstituted in 1688 (www.archaeology.ie).

The 14th 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 13th 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 14th 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 14th and 15th 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-16th 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 1–7 and associated infrastructure will be located in the townlands of Baunreagh, Coolcullen, Knocknabranagh and Knockbaun and Ridge. Coolcullen townland is in Co. Kilkenny, the barony of Fassadinin and parish of Mothell. Baunreagh townland, Knocknabranagh and Knockbaun townland and Ridge townland are in Co. Carlow, the barony of Idrone West and parish of Old Leighlin.

Lewis (1837, Vol. 2, 393) records the parish of Mothell as containing 2,427 inhabitants

and comprises 6,622 statute acres.

Lewis (*ibid*., 593) records the parish of Leighlin (Old) as containing 3,530 inhabitants. He notes that in 632:

> "*St. Gobban built a cell for himself and brethren at another place, and relinquished the abbey to St. Laserian, who made it the head of an episcopal see, over which he presided till his death in 638; and so greatly did the monastery flourish that, during the prelacy of St. Laserian, there were at one time not less than 1500 monks in the establishment. The priory was plundered in 916, 978, and 982, and in 1060 it was totally destroyed by fire. Among its subsequent benefactors was Burchard, son of Gurmoud, a Norwegian, who either founded or endowed the priory of St. Stephen, which being situated in a depopulated and wasted country, had frequently afforded refuge and assistance to the English, in acknowledgment of which Edward III. granted to the prior a concordatum in 1372. This priory was dissolved by Pope Eugene IV., in 1432, and its possessions annexed to the deanery of Leighlin. The town appears to have derived all its importance and all its privileges from the see*." (*ibid*.).

10.4.2 Site-Specific Archaeological Background

There is 1 no. Recorded Monument within 1km of the wind farm, which is described below (**Figure 10.4**).

RMP CW011-006: enclosure

RMP CW011-006 is recorded approximately 80m south of the proposed access track at Site Entrance 1 in Ridge townland, Co. Carlow. It is noted that the barely discernible traces of a bank enclose a circular area measuring 16m in diameter (www.archaeology.ie). The site is recorded on the First Edition 1:10,560 Ordnance Survey map (1839), but is not shown on later edition cartographic sources.

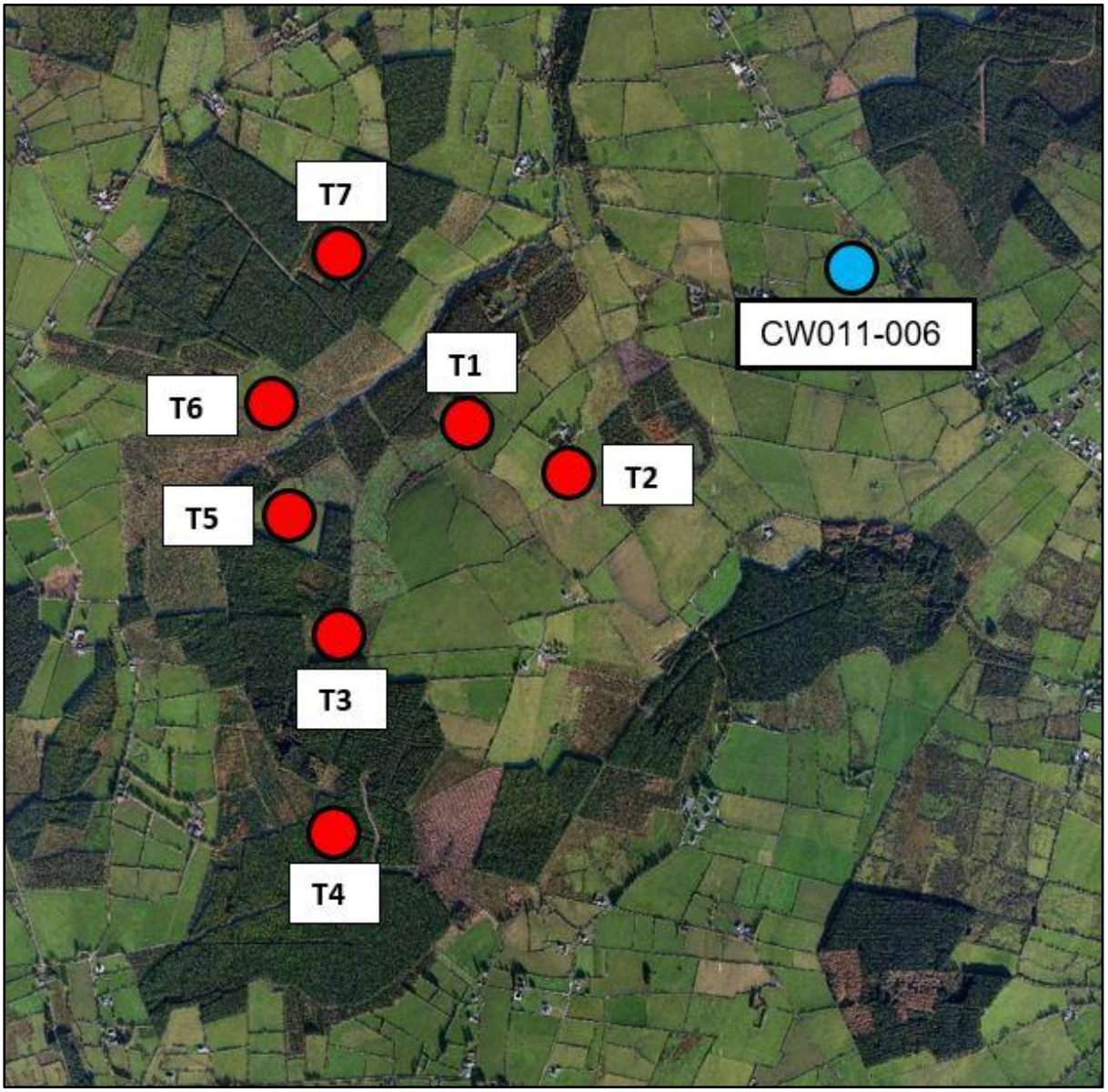

Figure 10.4: Recorded Monument within 1km of the Proposed Wind Farm

There are 14 no. Recorded Monuments within 100m of the grid connection route, which are described below (**Figure 10.5**).

RMP KK015-055: Unclassified cairn

Located at the south east end of a tree plantation in very poor wet soil. It takes the form of a mound of stone and earth (diameter 10m north east/south west x 3m north/south x 4m high) which is much degraded and has been quarried into. It is cut by a field fence, and is partially cut away by a modern shed to the south east where the ground drops 6m. Although the mound is mainly of stone, it is impossible to properly determine its nature due to the level of destruction.

RMP KK015-080: 18th/19th century house

Located in a slightly raised area west of small stream with good views to north, south and west. This complex is late 18th or early 19th century in date and has been modified and rebuilt several times. There is no evidence to suggest the house is earlier than the 18th/19th century.

RMP KK020-005: Enclosure

Immediately west of a public road. Recorded on historic cartographic sources and is visible on aerial photography as being overgrown with trees and scrub.

RMP KK020-015: Castle-motte

Located in pasture on the southern end of a natural hillock. A disused quarry encroaches into the northern end of the hillock on which the monument is located. It is indicated as a large mound (overall diameter approximately 43m north/south x approximately 40m east/west) on the First Edition 1:10,560 Ordnance Survey map (1842). It was recorded in 1945 (OPW files) as a large mound or tumulus approximately 4.5m tall and at a height of over approximately 9m above the road. The defensive position of this monument, as well as its morphology, suggest that it is a motte.

RMP KK020-016: House - fortified house

On the brow of a west-facing slope, surrounded by farm buildings. A very ruined rectangular structure (external dimensions 17.27m north/south x 11.6m east/west; wall approximately 1m thick) and presently standing to first-floor level. It is built of roughly coursed limestone rubble with some large quoins visible at the south west angle. Most of the north wall is upstanding, along with a very short length of the west end of the south wall and the north end of the west wall. The entrance doorway was apparently located at the northern end of the north wall but neither this entrance, nor any windows, survive. There is a projection at the north end of the west wall which contains a garderobe chute. There is no indication of the location of the staircase. The interior is filled with collapsed masonry and debris. There is some loose cut-stone masonry in the farmyard, including a window fragment. The dimensions of the castle suggest it is not a typical tower house, but being more rectangular than square it may be a strong house or a fortified house.

RMP KK020-017001: Church

The church is located on the lower reaches of a hill and is centrally placed within a roughly rectangular graveyard (RMP KK020-017002). It consists of a nave (internal dimensions 11.5m east/west x 7.2m north/south) and chancel (internal dimensions 6.1m east/west x 4.3m north/south). The chancel is constructed of coursed blocks of limestone while the nave is of roughly coursed limestone rubble. Modern buttresses have been added to the external faces of the north and south walls, including at the junction of the nave and chancel on the southern side. Within the interior there is a lot of collapsed masonry, including some architectural fragments.

RMP KK020-017002: Graveyard

A public road runs north/south along the west side of the graveyard. The First Edition 1:10,560 Ordnance Survey map (1842) shows an irregular dashed line surrounding the church which suggests that the graveyard was not enclosed at that time. The entrance from the road on the west side consists of an iron gate between stone piers and a stile immediately to the north. The graveyard takes the form of a rectangular area (50m east/west x 31m north/south) enclosed by a stone wall with roughly cut, slightly projecting, coping stones. All gravestones date from the 18th century and later, with several architectural fragments employed as grave-markers.

RMP KK020-017003: Ogham stone

Located within a pre-Romanesque church (RMP KK020-017001) which was extended westward, the original church becoming the chancel. This ogham stone was reused

as a sill for a round-headed window which was inserted in the east gable in the late 12th/early 13th century. It is a long rectangular block of red sandstone (1.55m x 0.22m), with seven closely set incised strokes visible on its lower edge.

RMP KK020-017004: Font

Located in the south west corner of a graveyard (RMP KK020-017002), close to its southern boundary wall. It consists of a portion of the shaft of a font, consisting of a large block of polished limestone (0.35m high x 0.4m in diameter) which is sub-circular in plan with semi-circular roll-mouldings at each of its four corners. There has been some damage to these mouldings.

RMP KK020-017005: Graveslab

A 1905 recording noted it as being a 1.2m long fragment of a small coffin-shaped slab with incised cross. The narrow end was missing, as well as the upper corner at the right side of the cross.

RMP KK020-017006: Holy well

A spring enclosed on three sides by 0.75m high stone walls and covered by a large flagstone. The walls, enclosing an area measuring 1.2m x 0.95m, were repaired in the 1950s. It was formerly dedicated to St. Colman and was venerated on the 16th of October. When visited in 1994 the well, which was overgrown with vegetation, was being used for domestic purposes.

RMP KK020-017008: Architectural fragment

An architectural fragment, measuring 0.55m x 0.27m and chamfered on two edges, rests on the graveyard (RMP KK020-017002) wall.

RMP KK020-017009: Bullaun stone

The bullaun stone is incorporated into the lower courses of a field boundary on the east side of road. It takes the form of an irregularly shaped limestone block (maximum dimensions 0.4m x 0.35m x 0.25m) with a shallow, circular basin 0.16m in diameter.

RMP KK020-017010: Ogham stone

Discovered in the 1970s, it is situated just above present ground level in the external face of the north wall of the nave of a church (RMP KK020-017001), immediately east of the north doorway and in a horizontal position.

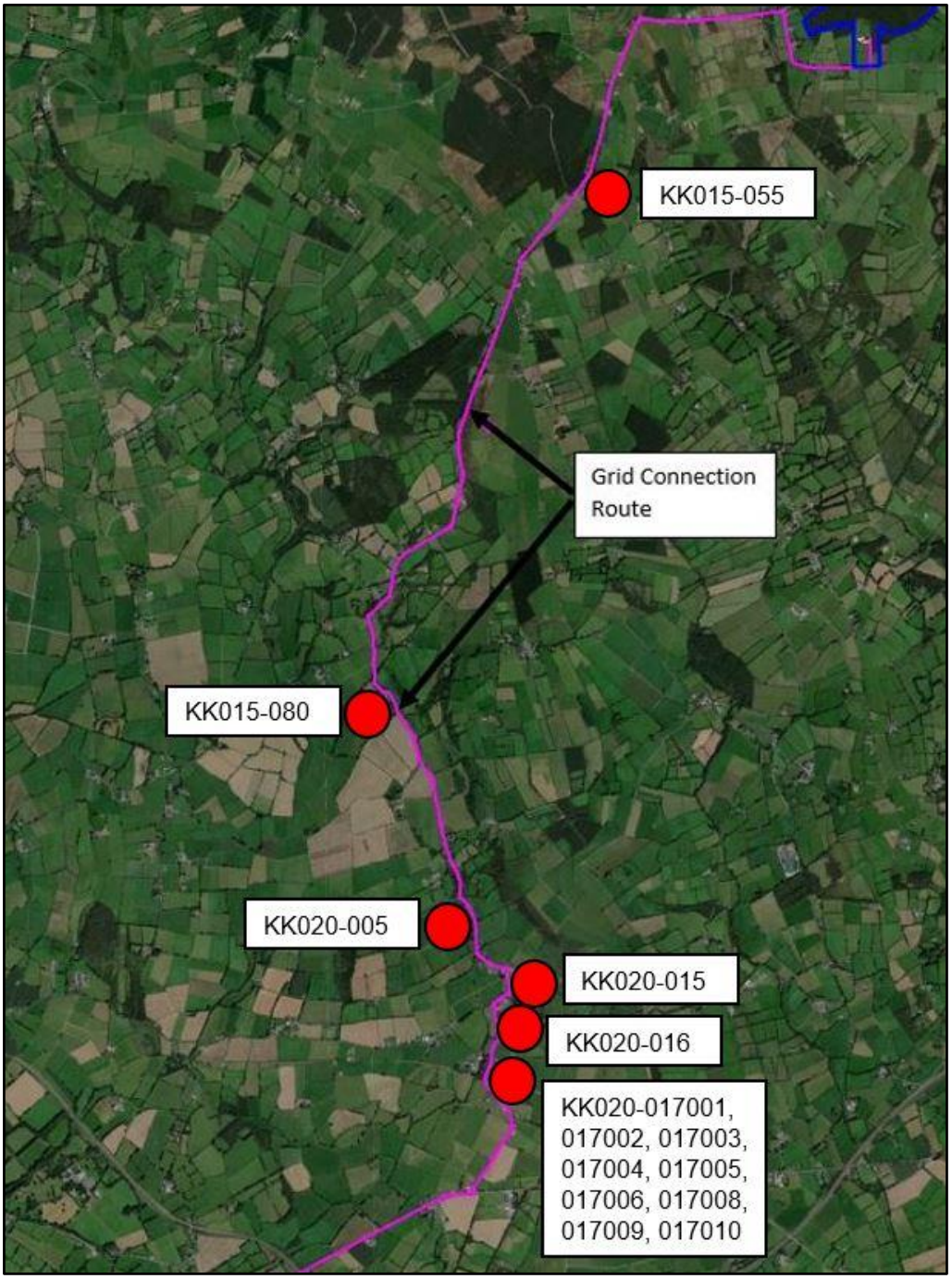

Figure 10.5 Recorded Monuments within 100m of the grid connection

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

There are no Recorded Monuments within the land-take of the temporary access track between the N78 and L1834.

10.4.3 Cartographic Analysis

10.4.3.1 Ordnance Survey Maps: First Edition 1:10,560 (1839 and 1842) (see **Figure 10.6**); First Edition 1:2,500 (1899-1902 and 1905-1906) and Third Edition 1:10,560 (1902-1903 and 1905-1906) (see **Figure 10.7**)

The proposed access tracks will cross 2 no. townland boundaries, a parish boundary, a barony boundary and a county boundary. 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).

2 no. structures are recorded along the access track leading to Turbines 1 and 2 on the First Edition 1:10,560 map. One of these structures is possibly annotated as two small separate buildings on later edition Ordnance Survey maps, while the other structure is not recorded on the later edition maps. 7 no. structures are recorded a short distance east of the access track leading to Turbine 2 and outside all areas of proposed land take. 5 no. structures are recorded in this location on later editions of historic maps. An access road is recorded in the location of Turbine 1 on the First Edition 1:2,500 map and the Third Edition 1:10,560 map. 3 no. small structures in 2 no. separate groupings are recorded on the First Edition map along the access track leading from Turbines 1 and 2 to Turbines 3 and 5. These structures are not recorded on any of the later edition historic maps. The location of the met mast and a Borrow Pit/Spoil Deposition Area is recorded as undeveloped on the First Edition 1:10,560 map, while it is recorded as a "*Quarry (Disused)*" on later edition maps. The alignment of the access track leading from Turbine 3 to Turbine 4 is shown as a field boundary on the First Edition 1:10,560 map, while it is recorded as a track/road on later edition maps. 2 no. small structures are recorded a short distance east of the access track leading to Turbine 5 on the First Edition map, but they are not shown on later edition historic maps. A small structure is recorded at the northern end of Turbine 5 on the First Edition 1:10,560 map. This structure is not recorded on any of the later edition historic maps. A well is recorded immediately east of Turbine 7 on later edition maps, but it is not annotated on the First Edition 1:10,560 map.

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

4 no. small structures are recorded on historic cartographic sources in the location of the temporary access track between the N78 and L1834. The general location of the access track is recorded as a "*Railyard*" on the First Edition 1:2,500 map and the Third Edition 1:10,560 map.

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

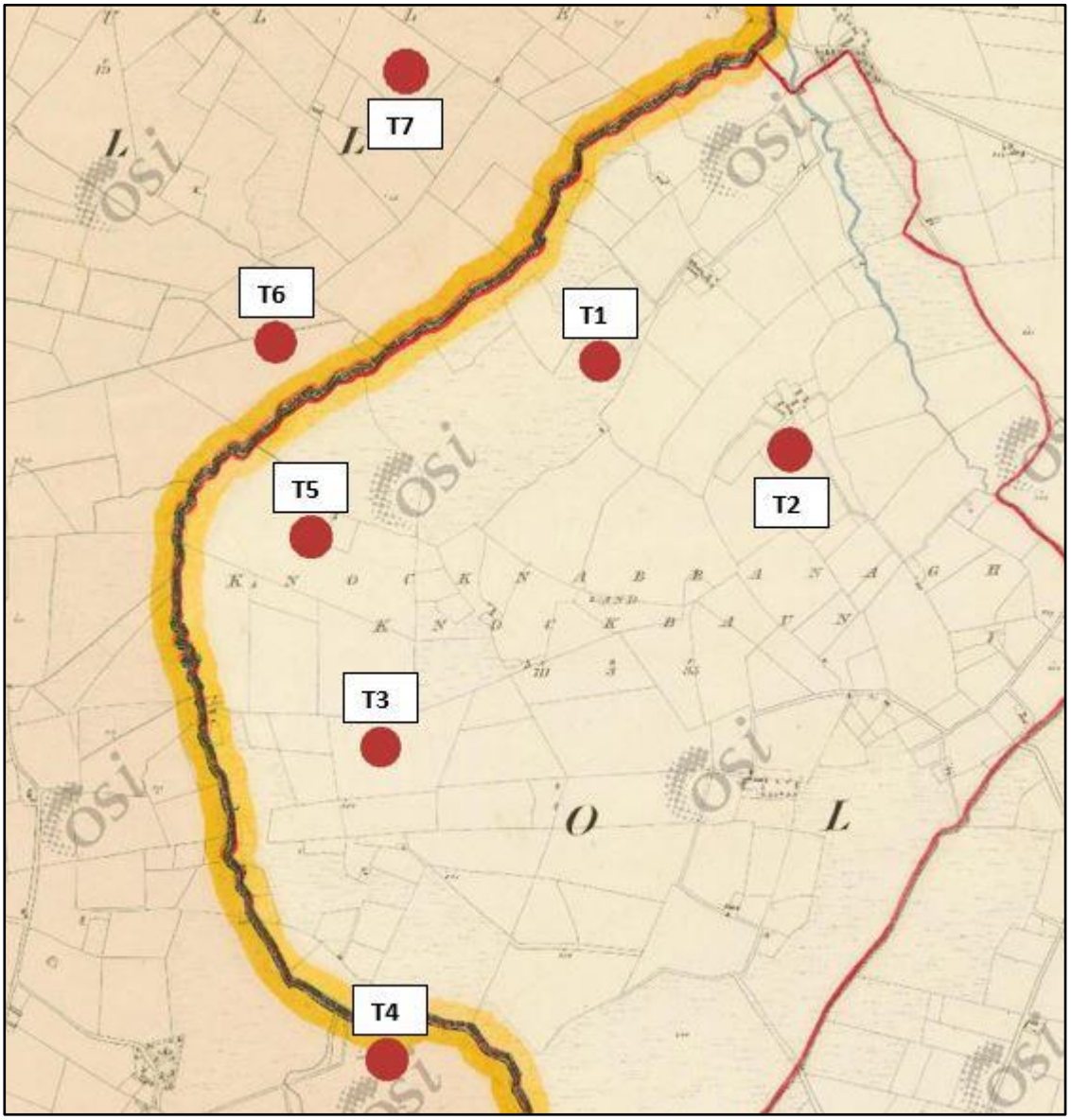

Figure 10.6 Extract from First Edition Ordnance Survey map (1839 and 1842), showing location of Turbines 1–7

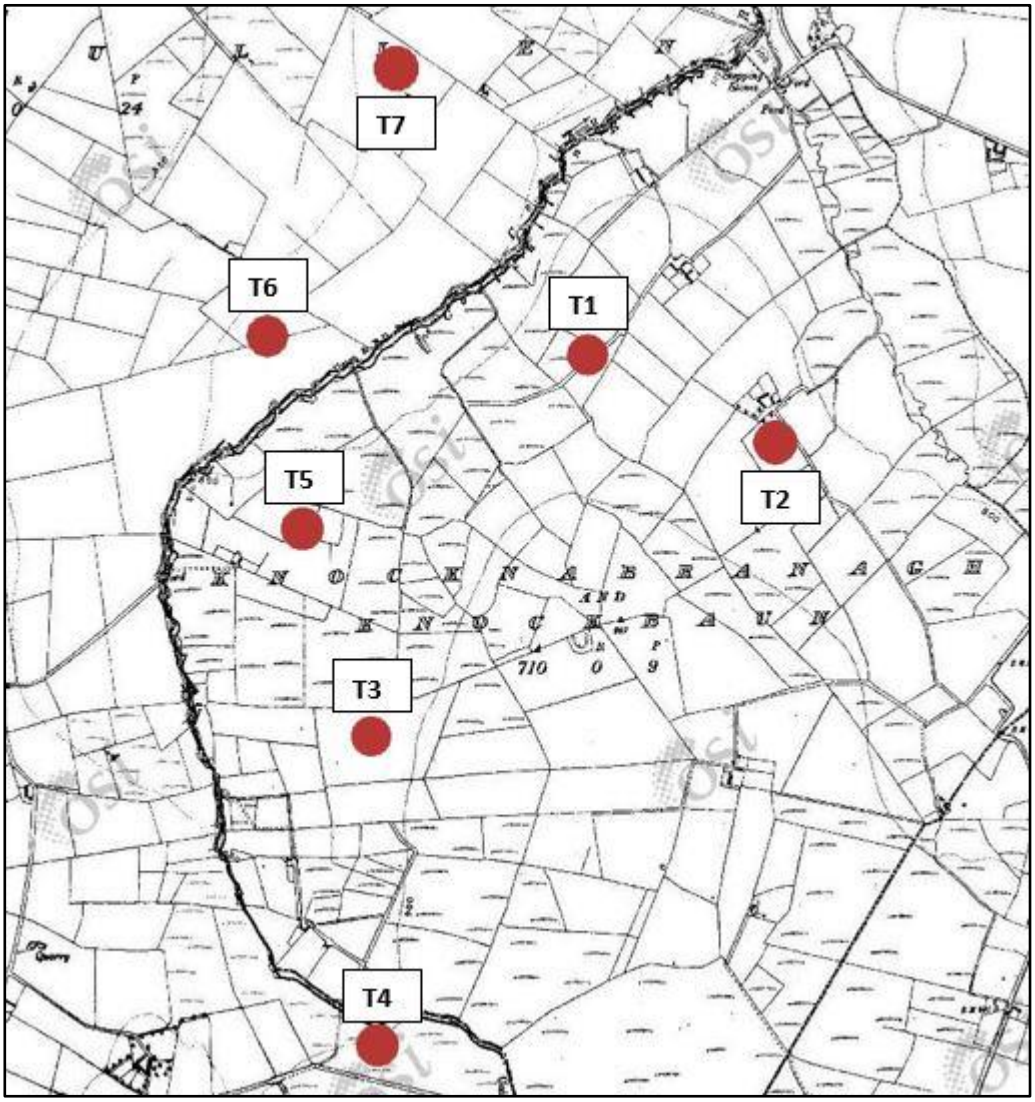

Figure 10.7: Extract from Third Edition Ordnance Survey map (1902-1903 and 1905-1906), showing location of Turbines 1–7

10.4.4 Aerial Photographs

Aerial photographs held by Ordnance Survey Ireland (map.geohive.ie) and Bing aerial photography (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 medium to large fields and modern forestry enclosed by mature field boundaries.

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 route, or the location of the temporary access track between the N78 and L1834.

10.4.5 Topographical Files of the National Museum of Ireland

Information on artefact finds and excavations from Co. Carlow and Co. Kilkenny 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.

There are no entries recorded in the Topographical Files within the land take of the project.

10.4.6 Previous Archaeological Fieldwork

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

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 is located within the following townlands:-

Name	Irish	Translation
Baunreagh	*An Bán Riabhach*	Grey field.
Coolcullen	*Cúl an Chuilinn*	Possibly translates as "Back of the holly tree".
Knocknabranagh and Knockbaun	*Cnoc an Bhreatnaigh* and *An Cnoc* Bán	Hill of the Breathnachs or Walshes, and white hill.
Ridge	*An Droim*	Ridge.

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).

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 route or within 100m of the grid connection route.

There are no National Monuments in State Care within the temporary access track between the N78 and L1834.

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 5km of the wind farm site.

There are no National Monuments with Preservation Orders or Temporary Preservation

Orders within the grid connection route or within 100m of the grid connection route.

There are no National Monuments with Preservation Orders or Temporary Preservation Orders within the temporary access track between the N78 and L1834.

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 route or within 100m of the grid connection route.

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 access track between the N78 and L1834.

10.4.9 County Development Plans

10.4.9.1 Archaeological Heritage

Carlow County Development Plan 2022-2028

It is a policy (AH. P1) of Carlow County Council (Carlow County Council 2022) to:-

> "*Secure the preservation (either in situ or by record) of all archaeological monuments included in the Record of Monuments and Places (RMP) and their settings, and of all sites and features of significant archaeological or historical interest, including potential and previously unknown sites or features, in consultation with the National Monuments Service in the Department of Housing, Local Government and Heritage*."

It is a policy (AH. P3) of Carlow County Council (*ibid*.) to:-

> "*Protect, conserve and enhance the archaeological heritage of the County, and to manage development in a manner that avoids adverse impacts on sites, monuments, features or objects of significant archaeological or historical interest, including areas and sites of archaeological potential. There will be a presumption in favour of the 'preservation in situ' of archaeological heritage in accordance with the 'Framework and Principles for the Protection of Archaeological Heritage (DAGHI 1999) or any superseding national policy document*."

It is a policy (AH. P4) of Carlow County Council (*ibid*.) to:-

> "*Ensure that any development proposal that may, by reason of location, scale, nature, layout or design, have potential implications for archaeological heritage (including areas and sites of archaeological potential), shall be subject to an archaeological assessment. The archaeological assessment will seek to ensure that the development proposal can be sited and designed to avoid impacting on archaeological heritage. Any archaeological excavation shall be carried out in accordance with best practice outlined by the NMS, the National Museum of Ireland and the Institute of Archaeologists of Ireland. In all such cases the Planning Authority shall consult with the National Monuments Service in the Department of Housing, Local Government and Heritage*."

It is also a policy (AH. P5) of Carlow County Council (*ibid*.) to:-

> "*Have regard to the Record of Monuments (RMP) and Places, the Urban*

> *Archaeology Survey and archaeological sites identified subsequent to the publication of the RMP when assessing planning applications for development. No development shall be permitted in the vicinity of a recorded feature, where it detracts from the setting of the feature or which is injurious to its cultural or educational value*."

Table 10.3 of the *Carlow County Development Plan* (*ibid*.) contains a list of *Monuments in the Ownership of the State* within Co. Carlow. There are no Monuments in the Ownership of the State recorded in the *Carlow County Development Plan* within the wind farm site or within 5km of the wind farm site.

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

There are no Monuments in the Ownership of the State recorded in the *Carlow County Development Plan* within the temporary access track between the N78 and L1834.

Table 10.4 of the *Carlow County Development Plan* (*ibid*.) contains a list of *Monuments in the Guardianship of the State* within Co. Carlow. There are no Monuments in the Guardianship of the State recorded in the *Carlow County Development Plan* within the wind farm site or within 5km of the wind farm site.

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

There are no Monuments in the Guardianship of the State recorded in the *Carlow County Development Plan* within the temporary access track between the N78 and L1834.

Table 10.5 of the *Carlow County Development Plan* (*ibid*.) contains a list of *Monuments to which Preservation Orders apply* within Co. Carlow. There are no Monuments to which Preservation Orders apply recorded in the *Carlow County Development Plan* within the wind farm site or within 5km of the wind farm site.

There are no Monuments to which Preservation Orders apply recorded in the *Carlow County Development Plan* within the grid connection route or within 100m of the grid connection route.

There are no Monuments to which Preservation Orders apply recorded in the *Carlow County Development Plan* within the temporary access track between the N78 and L1834.

Kilkenny City and County Development Plan 2021–2027

It is an Objective (9C) of Kilkenny County Council (Kilkenny County Council 2021) to:-

> "*Protect archaeological sites and monuments (including their setting), underwater archaeology, and archaeological objects, including those that are listed in the Record of Monuments and Places, and in the Urban Archaeological Survey of County Kilkenny or newly discovered sub-surface and underwater archaeological remains*."

It is a Development Management Requirement of Kilkenny County Council (*ibid*.) to:-

> "*Endeavour to preserve in situ all archaeological monuments, whether on land or underwater, listed in the Record of Monuments and Places (RMP), and any*

> *newly discovered archaeological sites, features, or objects by requiring that archaeological remains are identified and fully considered at the very earliest stages of the development process and that schemes are designed to avoid impacting on archaeological heritage*."

Section 9.3.1.1 of the *Kilkenny City and County Development Plan* (*ibid*., 141) contains a list of *Archaeological Landscapes* within Co. Kilkenny. There are no Archaeological Landscapes recorded in the *Kilkenny City and County Development Plan* within the wind farm site or within 5km of the wind farm site.

There are no Archaeological Landscapes recorded in the *Kilkenny City and County Development Plan* within the grid connection route or within 100m of the grid connection route.

Section 9.3.1.3 of the *Kilkenny City and County Development Plan* (*ibid*., 142) makes reference to *Walled Towns* within Co. Kilkenny. There are no Walled Towns recorded in the *Kilkenny City and County Development Plan* within the wind farm site or within 5km of the wind farm site.

There are no Walled Towns recorded in the *Kilkenny City and County Development Plan* within the grid connection route or within 100m of the grid connection route.

Section 9.3.1.4 of the *Kilkenny City and County Development Plan* (*ibid*.) makes reference to the *Industrial Heritage* of Co. Kilkenny. There are no Industrial Heritage features recorded in the *Kilkenny City and County Development Plan* within the wind farm site.

There are no Industrial Heritage features recorded in the Kilkenny City and County Development Plan within the grid connection route.

Section 9.3.1.5 of the *Kilkenny City and County Development Plan* (*ibid*., 144) makes reference to *Conservation Plans* within Co. Kilkenny. There are no areas for which Conservation Plans have been prepared recorded in the *Kilkenny City and County Development Plan* within the wind farm site or within 5km of the wind farm site.

There are no areas for which Conservation Plans have been prepared recorded in the *Kilkenny City and County Development Plan* within the grid connection route or within 100m of the grid connection route.

Section 9.3.1.6 of the *Kilkenny City and County Development Plan* (*ibid*.) makes reference to *Historic Graveyards* within Co. Kilkenny. There are no Historic Graveyards recorded in the *Kilkenny City and County Development Plan* within the wind farm site.

There are no Historic Graveyards recorded in the *Kilkenny City and County Development Plan* within the grid connection route.

10.4.9.2 Architectural Heritage

Carlow County Development Plan 2022-2028

It is a Policy (PS P1) of Carlow County Council (Carlow County Council 2022) to:-

> "*Ensure the protection of the architectural heritage of County Carlow, through the identification of Protected Structures, the designation of Architectural Conservation Areas, and the recognition of structures and features in the County that make a positive contribution to vernacular and industrial heritage*."

It is also a Policy (PS P2) of Carlow County Council (*ibid*.) to:-

> "*Ensure the protection and conservation of the character, setting and special interest of all buildings, structures (or parts of structures) and sites, listed in the Record of Protected Structures, including their curtilage, attendant grounds, and fixtures and fitting*."

It is an Objective (PS O1) of Carlow County Council (*ibid*.) to:-

> "*Review and amend on an ongoing basis the Record of Protected Structures, and make additions, deletions or corrections as appropriate over the period of this Plan*."

Appendix 8 of the *Carlow County Development Plan* (*ibid*.) contains the *Record of Protected Structures for County Carlow*. There are no Protected Structures recorded in the *Carlow County Development Plan* within the wind farm site or within 1km of the wind farm site.

There are 3 no. Protected Structures recorded in the *Carlow County Development Plan* within 5km of the wind farm site:-

- St. Lazerian's Cathedral, Old Leighlin (RPS no. CW71) c. 4.1km south east of Turbine 2;
- Church of Ireland Church, Bilboa (RPS no. CW268) c. 4.9km north east of Site Entrance 1; and,
- Old Leighlin House, Old Leighlin (RPS no. CW376) c. 4.9km south east of Turbine 2.

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

There are no Protected Structures recorded in the *Carlow County Development Plan* within the temporary access track between the N78 and L1834.

Section 10.15 of the *Carlow County Development Plan* (*ibid*.) contains a list of *Architectural Conservation Areas* within Co. Carlow. There are no Architectural Conservation Areas recorded in the *Carlow 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 *Carlow County Development Plan* within the grid connection route or within 100m of the grid connection route.

There are no Architectural Conservation Areas recorded in the *Carlow County Development Plan* within the temporary access track between the N78 and L1834.

Kilkenny City and County Development Plan 2021–2027

It is an Objective (9G) of Kilkenny County Council (Kilkenny County Council 2021, 146) to:-

> "*Respond to the Ministerial recommendation to include in the RPS, structures which have been identified as being of regional, national or international significance in the National Inventory of Architectural Heritage survey and to consider for inclusion those rated as being of local significance*."

It is also an Objective (9H) of Kilkenny County Council (*ibid*.) to:-

> "*Continue to review the Record of Protected Structures and add or delete structures as appropriate*."

Appendix I of the *Kilkenny City and County Development Plan* (*ibid*.) contains the *Record of Protected Structures for County Kilkenny*. There are no Protected Structures recorded in the *Kilkenny City and County Development Plan* within the wind farm site or within 1km of the wind farm site.

There are 5 no. Protected Structures recorded in the *Kilkenny City and County Development Plan* within 5km of the wind farm site:-

- St. Scruithin's Catholic Church (RPS no. C263) *c*. 4.9km south of Turbine 4;
- The Thatch (RPS no. C1052) *c*. 3km south of Turbine 4;
- Mill (RPS no. D83) *c*. 1.07km north of Borrow Pit and Spoil Deposition Area;
- Black Bridge (RPS no. D84) *c*. 2.2km north of Borrow Pit and Spoil Deposition Area; and,
- Uskerty Bridge (RPS no. D97) *c*. 4.1km north west of Turbine 7.

There are no Protected Structures recorded in the *Kilkenny City and County Development Plan* within the grid connection route or within 100m of the grid connection route.

There is 1 no. Protected Structure recorded in the *Kilkenny City and County Development Plan* associated with the project (see **Figure 10.8**):-

- Black Bridge (RPS no. D84). Black Bridge is also recorded on the National Inventory of Architectural Heritage (Reg. No. 12401111). It is proposed to undertake minor permanent works at Black Bridge on the L1835, comprising the placement of a 175mm layer of concrete across the carriageway over a distance of *c*. 18m (i.e. the entire span of the bridge archway) to increase the structural integrity of the bridge to accommodate the delivery of wind turbine components.

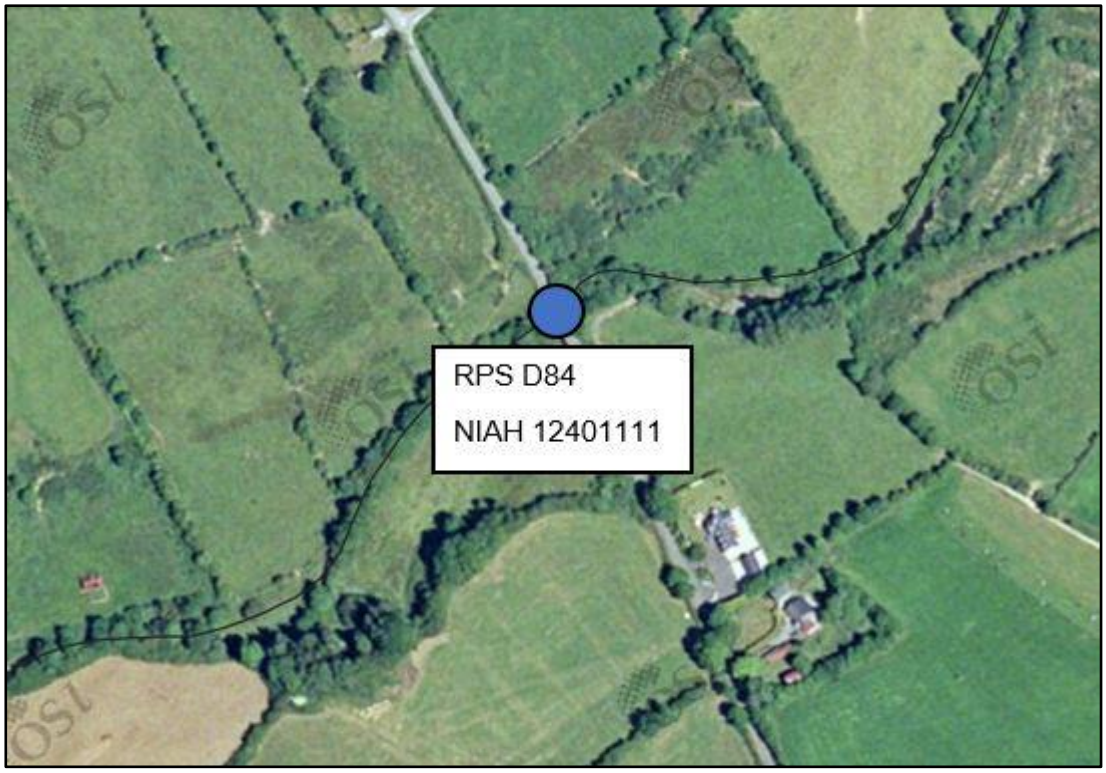

Figure 10.8: Protected Structure D84/NIAH Reg. No. 12401111 (Black Bridge)

Section 9.3.3.1 of the *Kilkenny City and County Development Plan* (*ibid*., 149) contains

a list of *Archaeological Conservation Areas* within Co. Kilkenny. There are no Architectural Conservation Areas recorded in the *Kilkenny City and 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 Kilkenny City and County Development Plan within the grid connection route or within 100m of the grid connection route.

10.4.9.3 Cultural Heritage

Carlow County Development Plan 2022–2028

The *Carlow County Development Plan* (2022) does not contain any designated lists or sites of cultural heritage importance or significance.

Kilkenny City and County Development Plan 2021 – 2027

The *Kilkenny City and County Development Plan* (2021) 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).

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

There is 1 no. structure recorded on the National Inventory of Architectural Heritage within 1km of the wind farm site:-

- Kane's Bridge (NIAH Reg. no. 12401105) c. 1km west of the western-most spoil deposition area.

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

There are no structures recorded on the National Inventory of Architectural Heritage within the temporary access track between the N78 and L1834.

There are 2 no. structures recorded on the National Inventory of Architectural Heritage associated with the project (see **Figures 10.8** and **10.9**):-

- Black Bridge is recorded on the National Inventory of Architectural Heritage (Reg. No. 12401111; **Figure 10.8**). It is also recorded as a Protected Structure in the *Kilkenny City and County Development Plan* (2021) (RPS Ref. D84). The road carriageway/bridge deck is to be raised by 175mm to ensure that vertical alignments are suitable to accommodate turbine components.

  Black Bridge is recorded on the NIAH as a c. 1875 single-arch rubble limestone road bridge on the site of an earlier bridge (pre-1840). Irregular coursed squared rubble limestone walls with battered piers having rock-faced dressed limestone quoins, cut-limestone stringcourse supporting parapet having cut-stone date stone/plaque, and part ivy-clad cut-limestone coping. Single segmental arch with rock-faced cut-limestone voussoirs, and tooled limestone ashlar soffits. Sited spanning Dinin River with overgrown grass banks to river.

- Crettyard Bridge is recorded on the National Inventory of Architectural Heritage

(Reg. No. 12400605; **Figure 10.9**). It is proposed to temporarily remove the pier caps of the northern parapet wall for the duration of turbine component deliveries. The pier caps will be fully reinstated post-construction.

Crettyard Bridge is recorded on the NIAH as a c. 1825 single-arch rubble stone road bridge, repaired, c. 1975. Random rubble stone walls with unpainted rendered parapets having unpainted roughcast panels, and unpainted rendered piers having cut-limestone chamfered capping supporting remains of iron lamp standard. Single segmental arch with rendered voussoirs, and rendered soffits. Sited spanning tributary of Dinin River with part-overgrown banks to river.

Figure 10.9: NIAH Reg. No. 12400605 (Crettyard Bridge)

10.4.10.2 Historic Gardens and 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 route.

There are no historic gardens or designed landscapes recorded on the National Inventory of Architectural Heritage within the temporary access track between the N78 and L1834.

10.4.11 Forestry Re-plant Lands

It is proposed to replant the c. 15ha of forestry to be felled at replacement lands in Drumagelvin, Co. Monaghan (see **Chapter 3** for further details). There are no protected archaeological, architectural or cultural heritage features recorded within the proposed forestry re-plant lands.

RMP MO020-012 (ringfort) is recorded, at its nearest point, approximately 25m north of the northern boundary of the re-plant area. It is recorded as a sub-circular grass and scrub-covered area measuring 33m northeast/southwest x 29m northwest/southeast (www.archaeology.ie). It is defined by an overgrown earthen bank that is largely reduced to an overgrown scarp, with an outer fosse and external field bank at south and south west. The perimeter is planted with trees and there is a ramp entrance at the east.

Historic cartographic sources show that the eastern side and part of the southern border of the proposed forestry re-plant lands form a townland boundary. Several small structures are recorded on historic cartographic sources within the proposed replant area, and three of these appear to survive above-ground. There is no evidence of any archaeological or architectural features recorded on aerial photography within the proposed replant area.

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 site visit was carried out on 15 September 2021 in dry weather conditions.

Areas of land take associated with Turbines 1–7, their associated access tracks and ancillary infrastructure were assessed to be as recorded on recent aerial photography; with the wind farm site being a combination of medium-to-large fields and modern commercial forestry.

The location of Turbine 1 is separated by a north east/south west oriented hedge and fence, and ground conditions were noted as having short grass and being dry underfoot (see **Plate 10.1**). Views are poor in all directions.

The location of Turbine 2 slopes to the east and was dry with ankle-length grass. Views are moderate to north and east and poor to south and west (see **Plate 10.2**).

The location of Turbine 3 was noted as being flat, dry and overgrown with tall grass (see **Plate 10.3**). Views are poor in all directions.

Turbine 4 was noted as being in a modern conifer planation with poor views in all directions (see **Plate 10.4**).

The location of Turbine 5 was noted as being a large field surrounded by modern conifer plantations (see **Plate 10.5**). Ground conditions were dry underfoot with calf-length grass. The field slopes gently to the west and views were moderate to west and poor in all other directions.

The location of Turbine 6 was recorded as being dry and sloping gently to the south with calf-length grass. Views are poor in all directions (see **Plate 10.6**).

Turbine 7 was noted as being in a modern conifer planation with poor views in all directions (see **Plate 10.7**).

No evidence of archaeological, architectural or cultural heritage features was

revealed within the footprint of the wind farm as a result of carrying out the walkover survey.

The grid connection route was assessed by means of a windshield survey. No archaeological, architectural or cultural heritage features were revealed within the land take of the grid connection as a result of carrying out the windshield survey.

The area of land take required for the temporary access track between the N78 and L1834 was assessed by means of a walkover survey. No evidence of archaeological, architectural or cultural heritage features was revealed within this area.

Black Bridge and Crettyard Bridge were assessed by means of a visual inspection (see **Plates 10.8**-**10.10**). For a description of Black Bridge and Crettyard Bridge, please refer to **Section 10.4.10.1**.

Plate 10.1: Location of Turbine 1, looking north west

Plate 10.2: Location of Turbine 2, looking south east

Plate 10.3: Location of Turbine 3, looking south west

Plate 10.4: General location of Turbine 4, looking west

Plate 10.5: Location of Turbine 5, looking south west

Plate 10.6: Location of Turbine 6, looking south

Plate 10.7: General location of Turbine 7, looking north

Plate 10.8: Black Bridge (RPS D84/NIAH 12401111)

Plate 10.9: Black Bridge (RPS D84/NIAH 12401111), looking north west

Plate 10.10: Crettyard Bridge (NIAH 12400605), looking north east

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, 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 route, temporary access track between the N78 and L1834 and forestry re-plant lands). As a result, there will be no direct or indirect construction phase effect on the recorded archaeological resource.

There is 1 no. Recorded Monument within 1km of the wind farm. There are 14 no. Recorded Monuments within 100m of the grid connection route. There are no Recorded Monuments within the land-take of the temporary access track between the N78 and L1834 or the forestry re-plant lands.

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, barony or county boundaries that may be impacted on by the project.

10.5.1.2 Architectural Resource

Black Bridge is recorded as a Protected Structure in the *Kilkenny City and County Development Plan* (2021). This structure is also recorded on the National Inventory of Architectural Heritage. The road carriageway/bridge deck is to be raised by 175mm to ensure that vertical alignments are suitable to accommodate the delivery of wind turbine components; however, it should be noted that no works will be undertaken to the bridge archway or parapet walls. It is assessed that there will be a likely permanent, direct and imperceptible construction phase effect on Black Bridge.

Crettyard Bridge is recorded on the National Inventory of Architectural Heritage. It is proposed to lower the pier caps of the northern parapet wall for the duration of turbine component deliveries. No other works to the bridge are proposed or required. The pier caps, which are assessed to be of limited architectural value, will be fully reinstated post-construction. It is assessed that there will be a likely temporary, reversible and imperceptible construction phase effect on Crettyard Bridge.

10.5.1.3 Cultural Heritage Resource

There are no protected cultural heritage features within the footprint of the project. As such, 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 is 1 no. Recorded Monument within 1km of the wind farm. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.1**), that there will be a likely long-term, reversible and moderate operational phase visual effect on this Recorded Monument. Following decommissioning any moderate effects will be entirely reversed.

It is assessed that the operation of the grid connection and management of the re-plant lands will have no likely operational phase effect on the archaeological resource.

10.5.2.2 Architectural Resource

There are 8 no. Protected Structures within 5km of the wind farm. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.1**), 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.

There is 1 no. structure recorded on the National Inventory of Architectural Heritage within 1km of the wind farm. It is assessed, based on analysis of photomontages prepared for the project (**Annex 9.1**), that there will be a likely long-term, reversible and moderate operational phase visual effect on this structure recorded on the National Inventory of Architectural Heritage. Following decommissioning any moderate effects will be reversed.

It is assessed that the operation of the grid connection and management of the re-plant lands will have no likely operational phase effect on the architectural resource.

10.5.2.3 Cultural Heritage Resource

There are no protected cultural heritage features within the footprint of the project. As such, 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 4 no. existing, permitted or proposed wind farms within 10km of the wind farm site, as follows:-

- Proposed Seskin Wind Farm; comprising 7 no. turbines and located c. 2.0km to the northeast at its nearest point;
- Permitted Bilboa Wind Farm; comprising 5 no. turbines and located c. 4.5km to the northeast at its nearest point;
- Proposed Freneystown Wind Farm; comprising 10 no. turbines and located c. to the 4.5km southwest at its nearest point; and,
- Existing Gortahile Wind Farm; comprising 8 no. turbines and located c. 5.5km to the north east 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 4 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 White Hill Wind Farm.

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. However there are no National Monuments within 5km of the wind farm site, and as such it is assessed that there will be no operational phase cumulative effects on any National Monuments.

Given the distance of the proposed Freneystown Wind Farm, permitted Bilboa Wind Farm and the operational Gortahile Wind Farm from the wind farm site, along with the extent of existing screening over such intervening distances, the wind farms will not result in significant operational phase cumulative effects on archaeological, architectural or cultural heritage remains.

Overall, it is assessed that the operation of the wind farm, in combination with all developments listed at **Chapter 1**; including the Seskin Wind Farm and Freneystown Wind Farm; is likely to result in a long-term, reversible and slight cumulative visual effect with the White Hill 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 and Monitoring Measures

10.6.1 Mitigation Measures

The following measures will be implemented:-

- Post-consent pre-construction test trenching shall be carried out in the area of land take closest to RMP MO020-012 (ringfort) within the forestry re-plant lands. Test trenching 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 test trenching. Further recommendations, which may include preservation *in situ*, archaeological excavation or archaeological monitoring, may be made on completion of the test trenching programme;
- 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 access track between the N78 and L1834 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, barony or county 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, barony or county boundaries that may be impacted on. The written and photographic records will be created in advance of excavations commencing on site;
- A post-consent pre-construction Architectural Impact Assessment of Black Bridge, containing written, drawn and photographic records, shall be carried out by a suitably qualified historic building consultant/Conservation Architect; and,
- A post-consent pre-construction Architectural Impact Assessment of Crettyard Bridge, containing written, drawn and photographic records, shall be carried out by a suitably qualified historic building consultant/Conservation Architect.

10.6.2 Micrositing

There are no Recorded Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or any additional statutorily protected archaeological, architectural or cultural heritage features within the footprint of the project (including wind farm, grid connection route, temporary access track between the N78 and L1834 and forestry re-plant lands). As such, 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 concluded 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 the 1 no. Recorded Monument located within the 1km study area.

It is assessed that there will be no residual construction or operational phase effects on the archaeological, architectural or cultural heritage resource as a result of works associated with the grid connection.

It is assessed that there will be no residual construction or operational phase effects on the archaeological, architectural or cultural heritage resource as a result of works associated with the temporary access track between the N78 and L1834 or the forestry re-planting.

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 the 8 no. Protected Structures located

within the 5km study area.

It is assessed that there will be a likely residual, long-term, reversible and moderate operational phase visual effect on the 1 no. structure recorded on the National Inventory of Architectural Heritage within the 1km study area.

It is assessed that there will be a likely residual permanent, direct and imperceptible construction phase effect on Black Bridge.

10.7.3 Cultural Heritage Resource

It is assessed that there will be no likely 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, substation, grid connection, spoil deposition areas 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 the 1 no. Recorded Monument located within the 1km study area. In addition, there will be a likely long-term, reversible and slight-not significant operational phase visual effect on the 8 no. Protected Structures located within the 5km study area; a likely, long-term, reversible and moderate operational phase visual effect on the 1 no. structure recorded on the National Inventory of Architectural Heritage within the 1km study area; a likely permanent, direct and imperceptible construction phase effect on Black Bridge; and a likely temporary, reversible and imperceptible construction phase effect on Crettyard Bridge. 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 the 1 no. Recorded Monument located within the 1km study area. In addition, there will be a likely residual, long-term, reversible and slight-not significant operational phase visual effect on the 8 no. Protected Structures located within the 5km study area; a likely residual, long-term, reversible and moderate operational phase visual effect on the 1 no. structure recorded on the National Inventory of Architectural Heritage within the 1km study area; and a likely residual permanent, direct and imperceptible construction phase effect on Black Bridge. 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**.

References

Carlow County Council. 2022. *Carlow County Development Plan 2022 - 2028*. Carlow.

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

Department of Housing, Local Government and Heritage. *Record of Monuments and Places, Counties Carlow, Kilkenny and Monaghan*. Unpublished.

Edwards, N. 2006. *The Archaeology of Early Medieval Ireland*. Oxford.

Environmental Protection Agency. 2022. *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Wexford.

European Commission. 2017. *Environmental Impact Assessment of Projects-Guidance on the Preparation of the Environmental Impact Assessment Report*. Luxembourg.

Kelly, E.P. 2006. "Secrets of the Bog Bodies: The Enigma of the Iron Age Explained", in *Archaeology Ireland* Vol. 20, No. 1, Issue No. 75. Wicklow.

Kilkenny County Council.1990. *Industrial Archaeology Survey of County Kilkenny*. Kilkenny.

Kilkenny County Council. 2021. *Kilkenny City and County Development Plan 2021 - 2027*. Kilkenny.

National Roads Authority. 2006. *Archaeological Discoveries: N25 Waterford City Bypass, Counties Waterford and Kilkenny*. Dublin.

Stout, M. 1997. *The Irish Ringfort*. Dublin.

Waddell, J. 2005. *The Prehistoric Archaeology of Ireland*. Wicklow.

Walsh, J.R. 2000. "The Early Church", in Jefferies, H.A. and Devlin, C. (eds.). *History of the Diocese of Derry from Earliest Times*. Dublin.

Cartographic Sources

Ordnance Survey Ireland	Map Editions 1839, 1842, 1899 – 1902, 1905 -1906, 1902 – 1903, 1905 – 1906

Internet Sources

www.archaeology.ie	National Monuments Service
www.bing.com/maps	Bing aerial photography
www.buildingsofireland.ie	National Inventory of Architectural Heritage
www.carlow.ie	Carlow County Council
www.excavations.ie	Database of Irish Excavation Reports
www.heritagemaps.ie	The Heritage Council
www.logainm.ie	Placenames Database of Ireland
www.kilkennycoco.ie	Kilkenny County Council
www.map.geohive.ie	Ordnance Survey Ireland aerial photographs