12 ARCHAEOLGY AND CULTURAL HERITAGE

12.1 Introduction

This archaeological and cultural heritage chapter was prepared by Dominic Delany & Associates (DDA) and Mr. Michael Gibbons, Independent Archaeologist. It presents the results of an archaeological and cultural heritage impact assessment for a proposed wind farm at Ardderroo and adjacent townlands, County Galway. The ‘Proposed Development’ comprises the construction of up to 25 No. wind turbines and associated infrastructure in the townlands of Ardderroo, Letter and Finnaun, County Galway and an alternative access road onto the N59 at Doon and Knockaunranny, County Galway. The development area is comprised primarily of commercial forestry plantation.

The purpose of this chapter is to assess the potential effects of the Proposed Development on the surrounding archaeological, architectural and cultural heritage landscape. The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a comprehensive programme of field walking of the study area that was carried out on various dates between October 2013 and September 2018. The report amalgamates desk-based research and the results of field walking to identify areas of archaeological/architectural/cultural significance or potential, likely to be impacted by the Proposed Development. A description of potential impacts is presented and a number of mitigation measures are recommended where appropriate. The potential visual impact of the Proposed Development on recorded monuments is also assessed.

12.1.1 Project Team and Qualifications

Dominic Delany MIAI graduated from University College Galway in 1986 with a BA (honours) degree in archaeology and history. He is licensed by the state to carry out archaeological excavations in Ireland since 1989 and has over 25 years of experience in the provision of archaeology and cultural heritage services to public and private sector clients. Dominic Delany & Associates was established in 2002 and the company has demonstrated its ability to provide archaeological mitigation to developments through management and co-ordination of projects from pre-planning assessment stage to archaeological resolution of sites.

Michael Gibbons MIAI is an independent Archaeologist with over 35 years of experience working in the Irish landscape and is a former co-Director of the Sites and Monuments Record Office. Michael has a specialised knowledge of our uplands and islands. He has published and lectured extensively on archaeology and cultural heritage in the Connemara area including the area around the proposed windfarm development. As part of his ongoing survey work, he discovered many of the archaeological features in this east Connemara area including a number of the cairns close to the development site and described in this EIAR. Michael is a former Council Member of Comhaire The Folklore of Ireland Council and served a five year term on the Archaeology Committee of the Heritage Council. Michael spent three seasons as field director; surveying and excavating the summit of Croagh Patrick in County Mayo and has recently mapped for the first time a whole range of new site and monuments in the vicinity of the mountain. He was project archaeologist on the recently completed historic trail at the Derrymilagh-Marconi heritage site near Clifden in West Connemara.
12.1.2 Planning Background

The current planning permission application is for 25 No. wind turbines. An application for a 29 no.-turbine wind farm at the same site was applied for in 2014. Permission was refused by An Bord Pleanála in December 2015 for the reasons outlined in Section 1.3 of this EIAR.

There are a number of wind energy projects built, under construction and permitted in the surrounding areas of Uggool, Cloosh, Seecon, Lettercraffroe, Knockranny and Knockalough, as detailed in Section 2.2 of this EIAR. Planning permission was also granted in 2013 for the upgrade of the Doon Road, which bisects the site of the proposed Ardderroo development. This upgrade has been completed.

12.1.3 Proposed Development

The Proposed Development comprises the construction of 25 No. wind turbines, turbine access roads, electricity substation, met mast, 3 No. borrow pits, temporary construction compound, permanent construction compound/visitor car park. An alternative construction access road off the N59 has also been considered as part of this EIAR. The proposed development will involve ground disturbance in the form of topsoil and peat excavation during the construction phase. Clear felling will also be required in a number of areas.

A full description of the Proposed Development is provided in Section 4 of this EIAR.

The layout of all the Proposed Development was designed sympathetically to the known cultural heritage features which exist on the site, as illustrated in the Constraints Map (Figure 3.11). The development footprint is proposed in areas which have no above ground archaeological, architectural or cultural heritage features. The design and layout of the proposed development has had regard to the ‘Wind Energy Development Guidelines’ (Department of the Environment, Heritage and Local Government, 2006) and the ‘Best Practice Guidelines for the Irish Wind Energy Industry’ (Irish Wind Energy Association, 2012). The project archaeologists were actively involved in the design of the project, and contributed to the various iterations of the proposed project layout, to ensure every effort was being made to minimise potential archaeological and cultural heritage impacts.

12.2 Site Location and Topography

The site is located in an upland area southwest of Rosscabhill in what was formerly known as Iar Connacht in West Galway. Connemara or Conmhaicne Mara was traditionally co-extensive with the barony of Ballynahinch, but has come to include parts of the barony of Moycullen or Iar Connacht and Joyce’s Country. The area was formerly associated with the O’Flaherty clan who were forced west of Lough Corrib from their base in Maigh Seola after the Anglo-Norman invasion of Connacht in the 13th century. There was a short lived Anglo-Norman occupation of Eastern Connemara and the site of their early stone castle has recently been tentatively identified at Moycullen Castle just east of the village of Moycullen. They were later removed or withdrawn as the O Flaherty’s reasserted control of the area. The O’Flaherty’s in turn lost much of their lands during the Cromwellian conquest of the West in the mid-17th century. Connemara was then settled by a new landed elite after the Cromwellian confiscations and from the late 17th century the area was dominated by the Martin family who had their seats at Ballynahinch and Ross. The landscape in these upland regions is characterised by ‘Cnoc and Lough’ topography, meaning dryland hummocks and small lakes surrounded by bog (Robinson in Aalen et al, 1997). The majority of the site within commercial forestry plantation.
12.3 Methodology

The assessment of the archaeology, architecture and cultural heritage of the proposed development area included desk-based research as well as field walking by both archaeologists. A desk-based study of the proposed development site was undertaken in order to assess the archaeological, architectural and cultural heritage potential of the area and to identify constraints or features of archaeological/cultural heritage significance within or near to the proposed development site. Field walking of the study area was undertaken on a number of dates between October 2013 and September 2018 to determine if previously unrecorded archaeological, architectural or cultural heritage features were located in the area of the proposed development and to assess any potential impacts on known or previously unrecorded sites or monuments within the EIAR study area. All turbine locations and other infrastructure locations were inspected.

12.3.1 Statutory Context

12.3.1.1 Current Legislation

Archaeological monuments are safeguarded through national and international policy, which is designed to secure the protection of the cultural heritage resource. This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage [Valletta Convention]. This was ratified by Ireland in 1997.

Both the National Monuments Acts 1930 to 2004 and relevant provisions of the Cultural Institutions Act 1997 are the primary means of ensuring protection of archaeological monuments, the latter of which includes all man-made structures of whatever form or date. There are a number of provisions under the National Monuments Acts which ensure protection of the archaeological resource. These include the Register of Historic Monuments (1997 Act) which means that any interference to a monument is illegal under that Act. All registered monuments are included on the Record of Monuments and Places (RMP).

The Record of Monuments and Places (RMP) was established under Section 12 [1] of the National Monuments (Amendment) Act 1994 and consists of a list of known archaeological monuments and accompanying maps. The Record of Monuments and Places affords some protection to the monuments entered therein. Section 12 [3] of the 1994 Amendment Act states that any person proposing to carry out work at or in relation to a recorded monument must give notice in writing to the Minister (Culture, Heritage and the Gaeltacht) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

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

The Council of Europe, in Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), states that ‘for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member State will undertake to maintain inventories of that architectural heritage’. The Granada Convention emphasises the importance of inventories in underpinning conservation policies.

The National Inventory of Architectural Heritage (NIAH) was established in 1990 to fulfil Ireland’s obligations under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architectural heritage of Ireland. Article 1 of the Granada Convention establishes the parameters of this work by defining ‘architectural heritage’ under three broad categories of Monument, Groups of Buildings, and Sites:

- **Monument**: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;

- **Group of buildings**: homogeneous groups of urban or rural buildings conspicuous for their historical, archaeological, artistic, scientific, social or technical interest, which are sufficiently coherent to form topographically definable units;

- **Sites**: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable, and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest.

The Council of Europe’s definition of architectural heritage allows for the inclusion of structures, groups of structures and sites which are considered to be of significance in their own right, or which are of significance in their local context and environment. The NIAH believes it is important to consider the architectural heritage as encompassing a wide variety of structures and sites as diverse as post boxes, grand country houses, mill complexes and vernacular farmhouses.

12.3.1.3 Galway County Development Plan 2015-2021 Archaeology

The Galway County Development Plan 2015-2021 has adopted policies ARC 1–ARC 6 and objectives ARC 1–ARC 7 for the protection of archaeological heritage. The policies seek to:

"Support and promote the conservation and appropriate management and enhancement of the County’s archaeological heritage“ [ARC 1]

"Seek to promote awareness of and access to archaeological sites in the County where appropriate” [ARC 2]

"Consult with the National Monuments Service of the Department of Arts, Heritage and the Gaeltacht in relation to proposed developments adjoining archaeological sites” [ARC 3]

"Support the preservation, conservation and management of archaeological sites and monuments, together with the settings of these monuments” [ARC 4]
“Ensure the protection and sympathetic enhancement of archaeological heritage” (ARC 5)

“Facilitate where possible the identification of important archaeological landscapes in the County” (ARC 6)

**Architectural Heritage**

Policy AH 1 relates to architectural heritage and seeks to:

“Protect the architectural heritage of County Galway which is a unique and special resource.”

**Vernacular Architecture**

Objective AH 6 relates to vernacular architecture and aims to:

“Recognise the importance of the contribution of vernacular architecture to the character of a place and ensure the protection, retention and appropriate revitalisation and use of the vernacular built heritage.”

**Record of Protected Structures**

A Record of Protected Structures (RPS) is included as an appendix in the County Development Plan. Objective AH 2 states that the council wishes to:

“Ensure the protection and sympathetic enhancement of structures included and proposed for inclusion in the Record of Protected Structures (RPS) that are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, together with the integrity of their character and setting.”

**Local Landscape and Place Assessment**

Objective AH 9 seeks;

‘To support proposals from local communities in analysing the character of their place and promoting its regeneration for their own use and enjoyment and that of visitors to the area.’

**The Irish Language**

It is the policy of Galway County Council to preserve and promote An Ghaeltacht in its planning process policies. Policy G 3 recognises;

‘The economic, social and cultural importance of Irish in the Gaeltacht and throughout the county.’

The proposed development is within a Gaeltacht area.

**12.3.2 Desktop Assessment**

A primary cartographic source and base-line data for the archaeological assessment was the consultation of the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Galway. All known recorded archaeological monuments are indicated on six inch Ordnance Survey (OS) maps and are listed in this record. The first edition OS six inch (1838–9) and twenty five inch (c.1900) maps for the area were also consulted. The proposed development site was inspected by Dominic Delany & Associates and Michael Gibbons on various dates between October 2013 and September 2018. A photographic record was made of the development area.
The following sources were consulted for this assessment report:

- The Sites and Monuments Record (SMR)
- The Record of Monuments and Places (RMP)
- First edition Ordnance Survey maps (OSI.ie)
- Third edition Ordnance Survey Map (Record of Monuments and Places for County Galway)
- Aerial photographs (OSI.ie)
- The Topographical Files of the National Museum of Ireland
- Excavations Bulletins (excavations.ie)
- Galway County Development Plan 2015-2021, Galway County Council
- National Inventory of Architectural Heritage (NIAH)
- EIS’s for adjacent wind farms at Uggool, Knockalough, Cloosh, Seecon, Lettercraffoe and Knockranny, and related projects including the Doon Road upgrade.

12.3.2.1 Record of Monuments and Places

The Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Galway is a record of all known recorded archaeological monuments in the county. The SMR/RMP is not a complete record of all monuments as newly discovered sites may not appear in the list or accompanying maps. In conjunction with the consultation of the SMR and RMP, the electronic database of recorded monuments which may be accessed at www.archaeology.ie was also consulted. There is one recorded monument, an enclosure (RMP No. GA067-021), located within the EIAR site boundary.

12.3.2.2 Cartographic Sources and Aerial Photography

Down Survey

The Down Survey undertaken by William Petty between 1656 and 1658 was a systematic mapping of Ireland for the purpose of administering the Cromwellian confiscations. It was based on the earlier civil survey and recorded land ownership and features by townland. The map depicts the study area as mountainous and sparsely populated.

Figure 12.1 Extract from the Down Survey map of Galway showing the approximate location study area

Ordnance survey first edition six inch map 1838-9
Ireland was included in the British Ordnance Survey beginning in the 1820s and offers a unique record of the country before the changes wrought by the Great Famine of the 1840’s. The first edition OS six inch map shows the site of the proposed development in bogland with occasional dry hummocks and outcrop. There are sizeable pockets of enclosed and presumably cultivated or grazed dryland with buildings including ‘Letter’ southwest of Letter Lodge, ‘Tullatee Hill’ in the east of Ardderroo and a third landholding between Tullagarone Lough and Tullaghnanoonbeg Lough in the south of Ardderroo. There are two small pockets of enclosed land with buildings in the south and east of Finnaun. Letter Lodge is named and comprises of the lodge, a number of enclosures, a small plantation and paths. A building and associated landholding is shown west of Letter Lodge and two small isolated buildings are shown in Ardderroo, one on the north shore of Ardderroo Lough, possibly a boat house, and another in the north of the townland. A ‘Weir’ is marked on the stream immediately east of the small landholding in the east of Finnaun. Recorded monument GA067-021 is drawn as an enclosure.

**Figure 12.2 Extract from first edition ordnance survey 6 inch map 1838-39 showing approximate location of study area**

**Ordnance Survey First Edition Twenty Five Inch Map c. 1900**

The twenty five inch OS map shows the site largely unchanged and there are no new features of archaeological interest recorded. A well in the townland of Letter is now shown as a kink in the wall rather than a full feature which may indicate disuse and abandonment. The two small landholdings in Finnaun are abandoned and the small buildings in Ardderroo are no longer extant. River crossing points are indicated by ‘Stepping Stones’ on the Owen Ardderroo east of Tullatee Hill, and on the Owen Boliska in the south of Ardderroo and the east of Finnaun.

**Aerial Photograph Analysis**

Aerial photographs of the site were examined and no previously unrecorded archaeological features could be seen. Sources included Bing Maps, Google Earth, Google Maps, Ordnance Survey of Ireland and National Monuments Service Historic Environment Viewer.

**12.3.2.3 Topographical Files - National Museum of Ireland**

Details relating to finds of archaeological material and monuments in numerous townlands in the country are contained in the topographical files held in the National Museum of Ireland. In order to establish if any new or previously unrecorded finds had been recovered from the study area these files were consulted for every townland within and adjacent to the study area. A search of the topographical files was carried out under the following townlands; Finisklin, Slieveaneena, Knockalough, Keeagh,
Letter, Uggool, Lealetter, Lettermass, Knockalee, Ardderroo, Kilaguile, Knockranny, Polleha, Drimavohaun, Drumaveg, Letterpeak, Shannagurraun, Boliska Oughter, Doon, Knockaunranny and Ross Demesne. The only entry from the above townlands was bog butter retrieved in 1983 at a depth of 50cm in Shannagurraun townland, approximately three kilometres south of the proposed development site. The NMI registration number for the find is 1983:28 and the ID is 1174.

12.3.2.4 Archaeological Inventory Series
Further information on archaeological sites may be obtained in the County Archaeological Inventory published by the Department of Culture, Heritage and the Gaeltacht. The archaeological inventories present summarised information on sites listed in the SMR/RMP and include detail such as the dimensions and location of particular monuments as well as any associated folklore or local information pertaining to each site. The inventories, however, do not account for all sites or items of cultural heritage interest which are as yet undiscovered.

12.3.2.5 Galway County Development Plan 2015-2021
The County Development Plan 2015-2021 was consulted for the schedule of buildings (Record of Protected Structures) and items of cultural, historical or archaeological interest which may be affected by the proposed wind farm. The townlands within and surrounding the study area were searched in the database of protected structures in the development plan to assess the proximity and potential impact of the proposed development on such structures. The development plan also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of County Galway. There are no protected structures located in the study area. The nearest protected structures are associated with Ross Demesne, 1km northeast of the proposed development.

12.3.2.6 Excavations Bulletins
Excavations’ Bulletin is an annual account of all excavations carried out under license within the 32 counties. The database is available on line at www.excavations.ie and includes excavations from 1969 to the present. This database was consulted as part of the desktop research for this assessment to establish if any archaeological excavations had been carried out within or near to the proposed development area.

A review of www.excavations.ie revealed just one licensed archaeological investigation in close proximity to the study area. This comprised the archaeological monitoring programme for the wind farm developments at Lettercraffoe, Uggool, Cloosh and Seecon, a wind farm cluster located immediately west of the proposed Ardderroo wind farm and known collectively as the Galway Wind Park. No archaeological features were noted during the course of monitoring at these adjacent wind farms. The following details are recorded:

<table>
<thead>
<tr>
<th>Reference</th>
<th>2016:429</th>
</tr>
</thead>
<tbody>
<tr>
<td>License no.</td>
<td>13E0169</td>
</tr>
<tr>
<td>Townlands</td>
<td>Lettercraffoe, Uggool, Cloosh, Seecon</td>
</tr>
<tr>
<td>ITM E 509355m N 735430m</td>
<td></td>
</tr>
<tr>
<td>Detail</td>
<td>No archaeological features or artefacts were uncovered during the course of monitoring of sub-surface works associated with the Galway Wind Park development. However a number of cultural heritage features were identified within</td>
</tr>
</tbody>
</table>
the development site boundary including two kilns at Ugool, believed to be associated with the illicit production of poteen, and a vernacular house known locally as the ‘Seanteach’.

Reference  2015:181
License no.  13E0169
Townlands  Lettercraffoe, Ugool, Cloosh, Seecon
ITM E 510894m N 735896m
Detail  No archaeological features or artefacts were uncovered during the course of monitoring of sub-surface works associated with the Galway Wind Park development.

12.3.2.7 National Inventory of Architectural Heritage (NIAH)

The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of the Culture, Heritage and the Gaeltacht and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999. The NIAH includes surveys of structures and designed landscapes of heritage value. This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county by county basis by the Department of the Culture, Heritage and the Gaeltacht. The NIAH database was consulted for all townlands within and adjacent to the study area.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for Culture, Heritage and the Gaeltacht to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland’s architectural heritage.

Building Surveys

There are no entries within the site boundary included on the National Inventory of Architectural Heritage. There are eight structures recorded in and around Ross Demesne 1 kilometre northeast of the site boundary.

Garden surveys

The NIAH survey of gardens and designed landscapes was consulted and did not include any entries within the study area.

12.3.3 Field Inspection

The study area was inspected by DDA and Michael Gibbons on various dates between October 2013 and September 2018. The inspection consisted of a walkover examination of all areas where wind farm infrastructure is proposed. The recorded monument (GA067-021, Enclosure) within the site was inspected and the potential direct and indirect impacts on that monument were assessed. All cultural heritage features identified in the desktop assessment were inspected with a view to assessing any potential effect.
12.3.3.1 Limitations Associated With Fieldwork

Areas within dense forestry are restricted for survey in terms of general access and visibility as well as having poor GPS coverage. Also, areas which have been clear felled are difficult to survey on foot which can make it difficult to detect previously undiscovered monuments not listed in the RMP/SMR. However, analysis of high resolution drone aerial footage of the cleared areas was able to ensure that no upstanding structures were missed (pers comms Michael Gibbons). Notwithstanding these limitations, all proposed turbine sites and all primary infrastructure locations were visited.

12.4 Existing Environment

12.4.1 Archaeological Heritage

For the purposes of this report, archaeological heritage includes all recorded archaeological monuments listed in the RMP/SMR maps and also includes newly discovered archaeological sites. These monuments are addressed separately for clarity.

Mesolithic

The earliest settlers in Connemara were hunter gatherers of the later Mesolithic period about 5,000 BC. Late Mesolithic material has been identified on all major river and lake systems in West Connacht with a notable focus on the Corrib basin including a Bann flake from the mouth of the Owenriff River at Oughterard some 8km north of the site boundary. A notable feature of the distribution of Mesolithic material in Ireland has been its complete absence from upland areas in Galway and Mayo suggesting human activity in this period was concentrated in lowlying areas in the vicinity of rivers and lakes where game and fish were most readily taken.

Neolithic

Throughout the Neolithic (4,000-2,500 BC) and Early Bronze Age a characteristic feature of farming communities in Ireland and over much of Western Europe was the practice of collective burial in stone tombs, now known as ‘megalithic tombs’ (Power 1992, 13). These consisted of a burial chamber/chambers with walls built of large upright stones and roofed with lintels or corbels of stone. They were originally contained within a cairn with access at one end into the chamber. The dead, inhumed or cremated, were placed in the chamber and often accompanied by grave goods such as pottery vessels and flint arrowheads. More than 1,550 examples are known in Ireland. Four main types are recognised; court tombs, portal tombs, passage tombs and wedge tombs (Farrelly and O’Brien 2002, 1). There is a large cluster of megalithic tombs in northwest Connemera north of Clifden. This is stark contrast to the scarcity of such sites on the granite glacially scoured landscapes of the east and south of Connemara.

No confirmed megalithic tombs are recorded in east Connemara but it is possible that Neolithic tombs are concealed beneath the large hilltop cairns at Raha (GA054-062) c. 3.5km northeast of the site boundary and Carnseefin in Derroura (GA039-010) c. 15km to the northwest. Tracts of uncut bog in the area may contain as yet unmapped sites. A megalithic structure (GA081-036) of unknown date has recently been identified in cut away bog in Gort Uí Lochlainn 6.15km east of the site boundary. Indeed, the presence of a Neolithic population is confirmed by a series of stone axe finds from the limestone lowlands between Oughterard and Moycullen to the northeast of the site. Settlement in the upland region appears to have been infrequent and episodic.
Bronze Age
There is evidence of extensive pine forests covering the Connemara uplands in the Bronze Age (2,500-500 BC), the remnants of which are commonly found during turf-cutting. Pre-bog field systems, fulachta fiadh and toghers/trackways have been found beneath the peat throughout northwest Connemara. A togher [GA080-001] is recorded from the townland of Booliska Oughter 3km to the south of the site boundary (pers. Comm. Michael Gibbons).

As the Bronze Age progressed megalithic burials began to be replaced by barrows, cairns and cists. Dating evidence has placed one of these types, the long cist [a stone slab built box] in the early Iron Age between 300 BC and AD 300 [Gosling 1993]. A long cist [GA055-013] was excavated at Ard near Oughterard in 1986, some 10km north of the site boundary. A cist is associated with a cairn at Knockranny [GA067-029001] 1.7km east of the site boundary. Cairns are located at Derrynoghi/Uggool [GA067-025] 1.15km northwest of site boundary, Knockranny [GA067-029] 1.7km east of site boundary, Kilaguile [GA067-025] 1.05km north of the site boundary, Doon [GA067-031] 430m north of site boundary and Newtown [GA068-072] 4km east of site boundary.

Barrows are earthen monuments which are associated with burial. There are several types which include ring-barrows, bowl barrows, mound barrows, stepped barrows, pond barrows and ditch barrows [Farrelly and O’Brien 2002, 103]. A ring-barrow consists of a low circular mound/platform enclosed by an inner fosse and outer bank (ibid). The practice of erecting a barrow to cover or contain a burial dates back to Neolithic times and continued up until the late Iron Age. There is an unclassified barrow 6km southeast of the site boundary in Knock townland.

Most standing stones belong in the tradition of ‘ceremonial preoccupation’, identified by Waddell as characteristic of the Bronze Age. Some have been shown to mark prehistoric burials while others may have had a commemorative or ritual function, or served as boundary markers or position posts along ancient routeways [Buckley and Sweetman 1991. 73]. However, some are of more recent date and perform a variety of functions [Waddell 1998]. A standing stone [GA067-028] is located 460m west of the site boundary in Uggool.

Iron Age / Early Christian / Medieval
The archaeology of the lowlands to the north and east of the development site is dominated by a range of early Christian, medieval and late medieval monuments [AD 400-1600], including ringforts raths, cashels, crannogs, church sites, children’s burial grounds and castles. The area to the north and east of the development has few definitive Iron Age monuments but does contain a rich array of Early Christian monuments.

Ringforts, Crannogs & Enclosures
Ringforts are the most widely distributed and common monuments in the country. They consist of circular areas, defined by banks and external ditches, and excavation often reveals the remains of dwelling houses and outbuildings for extended families. O’Riordain described the ringfort as ‘a space most frequently circular, surrounded by a bank and fosse or simply by a rampart of stone’ (O’Riordain 1979). Excavations have revealed that ringforts were typically an Early Christian (AD 500 to 1100) settlement type although some have shown to predate and postdate this period [Sweetman and O’Brien 1997, 24]. According to Stout [1997] ringforts were not built to repel prolonged sieges, or designed to annex territories and populations but rather to repel the lightning cattle raids, which were endemic during the Early Christian period in Ireland. In areas where there is little field stone, the banks are generally of earth, while in
stony areas, the banks may be of stone, with either stone-cut ditches, or no ditch at all. They can be referred to as caiseal, cathair, dún, lios and rath. Rath is the term applied to those with earthen banks while cashel is referred to those constructed with stone banks. They tend to have a dispersed distribution, although some are occasionally located in pairs, or even joined together. There is a ringfort (GA067-009) 1.1km north of the site boundary in Doon and a possible cashel has recently been identified 1km east of the site boundary in Knockranny (pers comm Michael Gibbons).

Enclosures are generally circular and are defined by an earth and/or stone bank, sometimes with a fosse. Some are most likely much degraded ringforts or the remains of other monuments such as ring-barrows or henge-type monuments (Farrelly and O’Brien 2002, 168). There is an enclosure (GA067-021) within the site boundary and 400m east of turbine T4 which has been identified as an animal enclosure. There is also an enclosure (GA067-023) 760 metres west of the site boundary in Uggool, which has also been identified as a sheepfold, and another (GA068-029) 490m south of the proposed new access onto the N59 at Knockaunranny.

There are two recorded crannogs or lake-dwellings on Ross Lake, one at Ross Demesne (GA068-066) 750m northeast of the site boundary and one at An Cnoc Bán (GA068-031001) 2km southeast of the site boundary. There is another crannog at Gortacarnaun on Lough Naneevin (GA067-011) 2km north of the site boundary. These monuments can date from as early as 1,000 BC but are usually dated to the early Christian period. In addition to their defensive role they acted as Royal Sites, as high status dwellings and occasionally as manufacturing centres, notably for metalwork, with occasional phases of reuse as late as the 19th century.
Church sites

Ecclesiastical remains can encompass a variety of physical remains of Christian worship and burial spanning over 1,000 years from AD 500 to 1700. Many of the old graveyards and church sites around the country are on sites that date back to the beginnings of Christianity (Power 1994, 167). From the 6th century onwards the Irish Church was dominated by scattered rural monasteries. Early Irish church sites were surrounded by large enclosures often circular in plan and usually more extensive than the surviving graveyards. As well as the church and graveyard these enclosures contained the dwellings, outhouses and workshops of a community (ibid.). In some instances where the enclosing element is destroyed its line can preserved in a curvilinear field boundary or roadway (Swan 1983, 270). Early churches were built of perishable material such as clay, post and wattle and timber. Between the late 8th and 10th centuries mortared stone churches began to replace wooden churches at the more important sites (Farrelly & O’Brien 2002, 228). Church reform in the early 12th century involved the reorganisation of the church into territorial dioceses. Around the same time new monastic orders were introduced from the continent in particular Augustinian Canons and Cistercians. Churches are located at Rosscahill East (GA068-061001) 1.2km north of the site boundary and at Boleyvaunaun (GA068-005001), Garrnyagry (GA068-015001) and Killanin (GA068-024) all located between 1.8 and 1.9km northeast of the site boundary.

Bullaun stones are typically boulders or rock outcrops with round or oval bowl-like hollows cut into them. The name comes from the word bullán meaning a bowl or hollow. These stones may have more than one basin or hollow. Their function is uncertain but they may have been used as mortars for crushing and grinding foodstuffs and dyes (Price 1959, 161-88). There are also many traditions relating to the curative properties of waters contained in bullauns, with some being known as ‘wart-wells’ as the water gathered from the hollow was said to cure warts ((ibid 161-88). There is a bullaun stone associated with the church at Boleyvaunaun (GA068-005002) and with the church and graveyard at Rosscahill East (GA068-061002). There is also a bullaun stone associated with the children’s burial ground at Cúil Each (GA068-009001) 1.6km southeast of the site boundary.

Children’s burial ground

Children’s burial grounds were used primarily for the burial of unbaptised children who were not permitted to be buried in consecrated ground. These burial grounds can be found at various locations within fields, ringforts, boundaries, cross roads and at disused or traditional church sites (Farrelly and O’Brien 2002, 282). The practise of burying children in a separate location has a long tradition going back to ancient Greek and Roman times (Ó Suilleabháin 1939, 143-5). Throughout Ireland they are variously known as cillín, lisheen, reilig, calluragh, caldragh and ceallunach (Farrelly and O’Brien 2002, 282). Cillini are often located on or near townland boundaries or in former ecclesiastical sites no longer in use. These liminal spaces were used for the burial of perceived outsiders of one sort or another as well as unbaptised children. There are children’s burial grounds at Cúil Each (GA068-009) 1.7km southeast of the site boundary and Knockranny (GA067-033) 765m east of the site boundary.

Castles

The 13th century saw the extension of the Anglo-Norman Conquest into the area east of the lough Corrib and a short lived expansion west of Lough Corrib. A manorial centre was established by the Anglo-Normans to the east of the modern village of Moycullen in Moycullen townland based it would seem around Moycullen Castle (GA068-044), a multi-phase castle dating back to the mid-13th century, and medieval church (GA068-042001). The rectangular bawn and traces of two sub-circular towers
of a rare Hall house Castle have recently been identified at the site. The English later retreated or were pushed out by the pre-existing Gaelic elites the O Cadhla and by the incoming O Flaherty’s who had been displaced from their land on the eastern banks of Lough Corrib. Moycullen Castle then became an O Flaherty castle and they went on to become the dominant Gaelic power in Connemara for the next 400 years. The technology of masonry castles was introduced to Ireland by the Anglo-Normans but the tradition was later adopted by the Gaelic Lords who all came to have power bases centred on one or more tower houses. Archaeologically this period is characterised by the construction of a series of additional castles, nearby examples of which are found at Aghanure (GA054-002) 6km north of the site boundary, Fough East (GA054-069) 7.25km north of the site boundary. Oghery Castle (GA068-031) located 2km southeast of the site boundary in the townland of An Cnoc Bán on Ross Lake is an example of a castle built on top of a pre-existing crannog.

**Post-Medieval**

The O Flaherty’s in their turn were supplanted by a new ruling elite over the course of the Tudor and Cromwellian Conquest. The subsequent semi-successful colonisation process involved the removal of the Catholic Gaelic Lords, either by conversion or by replacement with newly arrived land-owning families from further east. The expansion of settlement into the area from the 17th century onwards was accompanied by extensive rebellion and unrest, resulting in the construction of the main road from Galway and the Barracks at Oughterard (GA054-056) in addition to a network of smaller military facilities. Improved transport links ultimately opened up the area to wider economic and cultural impacts and set the scene for the massive expansion of population in the late 18th and early-mid 19th centuries. The new elite developed a new landscape centred on gentry houses and their demesnes; good examples of which are found at Lemonfield, Ross Castle, Knockbaun and Drumcong, although the houses at Lemonfield and Knockbaun have since been demolished. Previously existing farming villages expanded and previously marginal land was opened up by the creation of new clustered *baile* or clachan settlements, some of which may have existed earlier as booley sites (seasonal farm settlements based around the milking of cows). Booleying, hunting and fishing in remoter upland areas are recorded in Connemara from at least the 17th century when John Dunton encountered the O’Flaherties at their summer booley, a hunting lodge which provides a comparison for the two lodges mentioned in this EIAR. The practise continued into the 19th century. These clachan settlements were often shared tenancies with an infiel area of enclosed cultivation plots (often located on dry, rocky ground) and a larger and much more extensive outfield of unenclosed common grazing. The remains of these settlements now dot the Connemara landscape. The clachans at Letter and Tullatee Hill represent a settlement type which is ubiquitous in the granite uplands; good examples exist at Knockranny to the east and three more are present to the west at Ugool, Cloghermore and Boliska Oughter. The clustered settlement immediately to the south next to Lough Arrderroo has been abandoned since the 1960’s. Three, smaller sub-clachan-type settlements, consisting of a small number of buildings surrounded by a network of fields, occur at remote locations within the development site. These may represent small farm-holdings on tiny pockets of better and slightly drier land.

On the first edition ordnance survey map a weir is marked on the Owen Boliska River a short distance east of one the small sub-clachan settlements. The use of weirs or fish traps dates back to at least the Mesolithic and small fishing weirs are ubiquitous throughout Connemara; often surviving as no more than a line of stones narrowing the water flow into a small enough area to be netted using a small net known as a "cochail". They are often accompanied by stepping stones. Roderick O’Flaherty described the location of several of the larger examples in the late 17th century. In
Connemara, weirs were used to catch salmon, sand smelt and eels. Eels are described as having been taken in Cois Pharraige (from the rivers flowing south from the uplands containing the proposed development) into the first half of the twentieth century.

### 12.4.1.1 Recorded Monuments within the EIAR Study Area

Only one recorded archaeological monument is located within the site study area. The study area consists of the areas lying within the red line boundary on Figure 12.3. The Record of Monuments and Places (RMP) and the Sites and Monuments Record (SMR) maps were used to compile a list of known sites which occur within the study area.

#### Table 12.1 Recorded Monuments Located Within the EIAR Study Area

<table>
<thead>
<tr>
<th>NGR</th>
<th>Monument Type</th>
<th>RMP no.</th>
<th>Distance to Nearest Turbine/Works Area</th>
<th>Townland</th>
</tr>
</thead>
<tbody>
<tr>
<td>E112616</td>
<td>Enclosure</td>
<td>GA067-021</td>
<td>400m East of T4</td>
<td>Letter</td>
</tr>
<tr>
<td>N234930</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reference** RMP GA067-021

**Status** Recorded Monument protected under National Monuments Acts and Amendments 1930-2004

**Townland** Letter

**Type** Enclosure

**NGR** E112616 N234930

**Description** The RMP file describes the monument as being a non-antiquity. It consists of a large enclosure measuring 50m north-south by 42m east-west defined by a line of dry stone walling approximately 1m high. There are ridges and furrows in the interior as well as clearance cairns and outcrop. It features on the first edition OS 6 inch map.

**Sources** Record of Monuments and Places, site inspection, 1st edition OS six inch map 1838-9, 2nd edition OS six inch map 1899, third edition OS twenty five inch map 1907-9

**Distance** Within site boundary, 350m from T5

Plate 12.1 Enclosure GA067-021
12.4.1.2 Recorded Monuments within 2km of the EIAR Site Boundary

There are 36 recorded monuments within 2km of the EIAR site boundary. These monuments are listed in Table 12.2 below. Detailed descriptions are provided for many of the monuments, particularly those in closest proximity to the site, and for all of the cairns located including the cairn at Newtown which lies outside the 2km study area.

Table 12.2 Recorded Monuments Located Within 2km of the EIAR Site Boundary

<table>
<thead>
<tr>
<th>RMP No.</th>
<th>ITM</th>
<th>Monument Type</th>
<th>Distance from EIAR site boundary</th>
<th>Townland</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA067-007-007--</td>
<td>515657, 737731</td>
<td>Designed landscape feature</td>
<td>1.17km north of site boundary</td>
<td>Doon (Moycullen By.)</td>
</tr>
<tr>
<td>GA067-008--</td>
<td>515786, 737689</td>
<td>Designed landscape feature</td>
<td>1.1km north of site boundary</td>
<td>Doon (Moycullen By.)</td>
</tr>
<tr>
<td>GA067-009--</td>
<td>515972, 737729</td>
<td>Ringfort – cashel</td>
<td>1.1km north of site boundary</td>
<td>Doon (Moycullen By.)</td>
</tr>
<tr>
<td>GA067-010--</td>
<td>516252, 737508</td>
<td>Designed landscape feature</td>
<td>790m north of site boundary</td>
<td>Doon (Moycullen By.)</td>
</tr>
<tr>
<td>GA067-023</td>
<td>511180, 735665</td>
<td>Sheepfold</td>
<td>760m west of site boundary</td>
<td>Uggool</td>
</tr>
<tr>
<td>GA067-025</td>
<td>511810, 737005</td>
<td>Cairn – unclassified</td>
<td>1.15km northwest of site boundary</td>
<td>Derryvoghill, Uggool</td>
</tr>
<tr>
<td>GA067-028</td>
<td>511204, 735210</td>
<td>Standing Stone</td>
<td>460m west of site boundary</td>
<td>Uggool</td>
</tr>
<tr>
<td>GA067-029--</td>
<td>516370, 734067</td>
<td>Cairn – ringcairn</td>
<td>1.7km east of site boundary</td>
<td>Knockranny</td>
</tr>
<tr>
<td>GA067-029-001</td>
<td>516370, 734067</td>
<td>Cist</td>
<td>1.7km east of site boundary</td>
<td>Knockranny</td>
</tr>
<tr>
<td>GA067-030</td>
<td>513641, 737198</td>
<td>Cairn – unclassified</td>
<td>1.05km north of site boundary</td>
<td>Killaguile</td>
</tr>
<tr>
<td>GA067-031</td>
<td>515300, 736288</td>
<td>Cairn – unclassified</td>
<td>430m north of site boundary</td>
<td>Doon (Moycullen By)</td>
</tr>
<tr>
<td>GA067-032</td>
<td>514660, 733648</td>
<td>Hut site</td>
<td>245m east of site boundary</td>
<td>Knockranny</td>
</tr>
<tr>
<td>GA067-033</td>
<td>515250, 733576</td>
<td>Children’s burial ground</td>
<td>765m east of site boundary</td>
<td>Knockranny</td>
</tr>
<tr>
<td>GA067-034</td>
<td>510709, 735682</td>
<td>Kiln – corn-drying</td>
<td>1.4km west of site boundary</td>
<td>Uggool</td>
</tr>
<tr>
<td>GA067-035</td>
<td>511113, 735190</td>
<td>Kiln – corn-drying</td>
<td>520m west of site boundary</td>
<td>Uggool</td>
</tr>
<tr>
<td>Reference</td>
<td>Coordinates</td>
<td>Feature Description</td>
<td>Distance from Site Boundary</td>
<td></td>
</tr>
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<td>----------------------</td>
<td>---------------------------------</td>
<td>-----------------------------</td>
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</tr>
<tr>
<td>GA067-036</td>
<td>510751, 736579</td>
<td>Sheepfold</td>
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<tr>
<td>GA068-005001</td>
<td>118665, 237918</td>
<td>Church</td>
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</tr>
<tr>
<td>GA068-005002</td>
<td>118770, 237875</td>
<td>Bullaun Stone</td>
<td>1.8km west of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-009</td>
<td>118619, 235880</td>
<td>Children’s Burial Ground</td>
<td>1.7km southeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-009001</td>
<td>118598, 235879</td>
<td>Bullaun Stone</td>
<td>1.65km southeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-015</td>
<td>118668, 238210</td>
<td>Enclosure</td>
<td>1.9km northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-015001</td>
<td>118669, 238209</td>
<td>Church</td>
<td>1.9km northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-024</td>
<td>118944, 237644</td>
<td>Church</td>
<td>1.9km northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-024001</td>
<td>118944, 237644</td>
<td>Graveyard</td>
<td>1.9km northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-028</td>
<td>118031, 235531</td>
<td>Quarry</td>
<td>1.4km southeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-029</td>
<td>117525, 236316</td>
<td>Enclosure</td>
<td>490m southeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>G0068-046</td>
<td>518765, 735409</td>
<td>Enclosure</td>
<td>2km southeast of site boundary</td>
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<tr>
<td>GA068-047</td>
<td>518262, 734994</td>
<td>Settlement Cluster</td>
<td>2km south of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-056</td>
<td>117700, 237730</td>
<td>Icehouse</td>
<td>910m northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-060</td>
<td>117792, 237561</td>
<td>Country house</td>
<td>840m northeast of site boundary</td>
<td></td>
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<tr>
<td>GA068-060</td>
<td>117854, 237557</td>
<td>Well</td>
<td>860m northeast of site boundary</td>
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<tr>
<td>GA068-061001</td>
<td>117112, 238203</td>
<td>Church</td>
<td>1.2km north of site boundary</td>
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<tr>
<td>GA068-061002</td>
<td>117102, 238200</td>
<td>Graveyard</td>
<td>1.2km north of site boundary</td>
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<tr>
<td>GA068-061003</td>
<td>117059, 238164</td>
<td>Bullaun Stone</td>
<td>1.2km north of site boundary</td>
<td></td>
</tr>
<tr>
<td>GA068-066</td>
<td>117756, 237444</td>
<td>Crannog</td>
<td>750m northeast of site boundary</td>
<td></td>
</tr>
<tr>
<td>Reference</td>
<td>RMP GA068-069</td>
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<td></td>
</tr>
<tr>
<td>Status</td>
<td>Designed landscape tree-ring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Townland</td>
<td>420m north of site boundary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NGR</td>
<td>Ross Demesne</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reference**

GA068-069, 237426

**Designed landscape tree-ring**

**420m north of site boundary**

**Ross Demesne**

---

**Reference**

RMP GA067-009

**Status**

Recorded Monument protected under National Monuments Acts and Amendments 1930-2004

**Townland**

Doon

**Type**

Ringfort - cashel

**NGR**

E115971 N237728

**Description**

Beside a stream, in an area of scrubland. Very poorly-preserved sub-circular cashel (N-S 38.35m) defined by a much collapsed drystone wall overlain at west by a modern field wall.

**Sources**


**Distance**

1.15km north of site boundary at new access onto N59

---

**Reference**

GA067-023

**Status**

Recorded Monument protected under National Monuments Acts and Amendments 1930-2004

**Townland**

Oguil

**Type**

Sheepfold

**NGR**

E111207, N235640

**Description**

This is a roughly sub-circular enclosure marked on the 1898-9 OS six inch map. The feature proved to be a sheepfold on inspection in 1989; “This site...is thought to have functioned and been built for the purpose of an animal pen. It does not have characteristic cashel features”. It measures 13m north-south by 10.8m east-west and is formed by a single line of dry stone walling 1.5m high with large boulders at the base. The interior of the site is described as overgrown and there is a slope uphill from east to west. It was temporarily removed from the RMP but has been reinstated.

**Sources**

RMP files, site inspection, 2nd edition OS six inch map 1899

**Distance**

760m west of site boundary, 1.2km from T4
Plate 12.2 GA067-025 (Cairn) located 1.2km north of site boundary

---

<table>
<thead>
<tr>
<th>Reference</th>
<th>GA067-025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Recorded Monument protected under National Monuments Acts and Amendments 1930-2004</td>
</tr>
<tr>
<td>Townland</td>
<td>Derryvoghil, Oguil</td>
</tr>
<tr>
<td>Type</td>
<td>Cairn – unclassified</td>
</tr>
<tr>
<td>NGR</td>
<td>E111841, N236978</td>
</tr>
<tr>
<td>Description</td>
<td>This cairn is one of a series initially identified by Michael Gibbons in this area. The RMP file contains references to a number of possible structures and a trigonometrical point but no survey details.</td>
</tr>
<tr>
<td>Sources</td>
<td>RMP files, site inspection</td>
</tr>
<tr>
<td>Distance</td>
<td>1.15m northwest of site boundary, 1.38km from T1</td>
</tr>
</tbody>
</table>
Plate 12.3 GA067-028 [Standing Stone] located 460m west of site boundary

<table>
<thead>
<tr>
<th>Reference</th>
<th>GA067-028</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Recorded Monument protected under National Monuments Acts and Amendments 1930-2004</td>
</tr>
<tr>
<td>Townland</td>
<td>Oguil</td>
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<tr>
<td>Type</td>
<td>Standing stone</td>
</tr>
<tr>
<td>NGR</td>
<td>E111237, N235171</td>
</tr>
<tr>
<td>Description</td>
<td>The standing stone is situated on top of a small mound which is quite obvious above the surrounding bog. The nature of the stone was not obvious to the ASI</td>
</tr>
<tr>
<td>Sources</td>
<td>RMP files, site inspection</td>
</tr>
<tr>
<td>Distance</td>
<td>460m west of site boundary, 910m from T7</td>
</tr>
</tbody>
</table>

Plate 12.4 GA067-029 [Cairn] located 1.7km east of site boundary
Reference | GA067-029 (001)
Status | Recorded Monument protected under National Monuments Acts and Amendments 1930-2004
Townland | Cnoc Raithni (Knockranny)
Type | Cairn – ring cairn and cist
NGR | E116432, N234016
Description | On the summit of Knockranny, a locally prominent steep-sided hill. This small low circular ring cairn (diam. c. 11m) is defined by a grassy bank externally and a ragged stony scarp internally. There is a narrow gap (Wth. 0.5m) at NNW. The interior is slightly dished in profile but it is partially obscured by a modern drystone-built cairn (H 1m; diam. 2.3m) which occupies the centre of the monument. A possible cist is visible in the SSE sector (pers. comm. Paul Gosling 2013)
Sources | RMP files, site inspection
Distance | 1.7km east of site boundary, 2.2km southeast of T11

Plate 12.5 GA067-030 [Cairn] located 1.1km north of site boundary

Reference | GA067-030
Status | Recorded Monument protected under National Monuments Acts and Amendments 1930-2004
Townland | Killagueile
Type | Cairn - unclassified
NGR | E113671 N237172
Description: This is a hilltop cairn with a smaller cairn of stones on top. The latter was deposited by walkers and measures 4m in diameter by 3m high. The larger (the monument) has concentric circles and a hollow at the summit, into which the recent stones have been dropped. c. 10m in diameter at the summit, c. 20m in diameter at the base. c. 9m high from the base to the summit. The location is at the highest point around and it offers excellent views in all directions. A telecoms mast has been erected to its immediate northwest.

Sources: RMP files, site inspection
Distance: 1.05km north of site boundary, 1.45km from T2

Plate 12.6 GA067-031 (cairn) located outside proposed site and 1.25km from nearest turbine

Reference: GA067-031
Townland: Doon (Moycullen By)
Type: Cairn - unclassified
NGR: E115333, N236263
Description: This is a circular ring cairn c. 5m in diameter located on top of Doon Hill. There is an opening of the circle measuring 1m wide. There is a pile of loose stones in the centre of the circle and a flat trigonometrical point.
Sources: RMP files, site inspection
Distance: 430m northeast of site boundary, 1.2km from T3
GA067-032 (Hut site) located outside proposed site and 635m from nearest turbine

Reference
GA067-032

Status
Recorded Monument protected under National Monuments Acts and Amendments 1930-2004

Townland
Cnoc Raithni

Type
Hut site

NOR
E114691, N233619

Description
The remains of this possible hut site consist of a C-shaped low earthen bank (max. external dimensions 7.2m N-S x 9.5m E-W; H 0.3m), with some possible stone revetting at southeast corner on the outer edge of the bank. There is a break in the bank at west that is partly obstructed by an irregularly-shaped low mound (2m N-S x 2.5m E-W).

Sources
RMP files, site inspection

Distance
245m east of site boundary, 640m from T19
Plate 12.8 GA067-033 (Children’s burial ground) located outside proposed site and 1.2km from nearest turbine

References: RMP GA067-033
Townland: Cnoc Raithni
Type: Children’s Burial Ground
NGR: E115282, N233546
Description: This monument represents a concession to a local tradition of a possible Children’s Burial Ground located somewhere within the four fields at this location. There is no visible surface trace of any burial markers in these fields.
Sources: RMP files, site inspection
Distance: 760m east of site boundary, 1.2km from T19

References: RMP GA067-035
Townland: Ogúil
Type: Kiln – Corn Drying
NGR: E111113, N235190
Description: Monument comprises the remains of the curving south end of the bowl of a corn-drying kiln identified during recent work on the Galway Wind Farm project. Located at the base of a field wall the kiln was purposely concealed in the landscape as it was associated with the illicit production of poteen. It probably dates from the late 19th or early 20th century. A similar kiln (GA067-034) lies c. 640m to the northwest.
Sources| RMP files  
Distance| 520m west of site boundary, 940m from T7  
Reference| GA068-029  
Status| Recorded Monument protected under National Monuments Acts and Amendments 1930-2004  
Townland| Knockaunranny  
Type| Enclosure  
NGR| E117525, N236316  
Description| In hilly farmland. Poorly-preserved and very overgrown circular enclosure (D 20.5m). At south, where it is clear of growth, the foundations of a drystone wall are visible. Overlain by a modern field wall.  
Sources| RMP files, Archaeological Inventory  
Distance| 490m southeast of site boundary at proposed new access onto the N59  
Reference| GA068-066  
Status| Recorded Monument protected under National Monuments Acts and Amendments 1930-2004  
Townland| Ross Demesne  
Type| Crannog  
NGR| E117756, N237444  
Description| This is a circular ring cairn c. 5m in diameter located on top of Doon Hill. There is an opening of the circle measuring 1m wide. There is a pile of loose stones in the centre of the circle and a flat trigonometrical point.  
Sources| RMP files, site inspection  
Distance| 750m northeast of site boundary at proposed new access onto the N59  

Other recorded monuments located within 1km of the EIAR site boundary for which detailed descriptions are not provided above include Ross House (GA068-060), a late 18th/early 19th century residence built by the Martin family on the site of a 16th century O’Flaherty castle, and associated demesne features including designed landscape features at Doon (GA067-010) and Ross Demesne (GA068-069), and a well (GA068-060001) and icehouse (GA068-056) in the immediate vicinity of the house. One additional monument located outside the 2km study area but included in the discussion in 12.5.1.2.2 of the EIAR is GA068-072, a cairn at Newtown approximately 3km south of the proposed new access onto the N59 and 3.8km east of the turbines site boundary. Its inclusion is warranted as it forms one of the series of hilltop cairns in this landscape.

12.4.1.3 Statement of Significance of Archaeological Monuments within 2km of EIAR Site Boundary

The most common monument type in the immediate area outside of the proposed site are cairns, of which there are four within two kilometres of the site boundary and a fifth at a distance of c.3km from the site boundary. Recorded monuments GA067-025, GA067-029, GA-67-030, GA067-031 and GA068-072 are intervisible and are of part a series of hilltop cairns in the area. Further evidence of prehistoric activity in the area is represented by a standing stone to the west of the site at Uggool (GA067-028) and a hut site to the east at Knockranny (GA067-032).
Early Medieval settlement is represented by a cashel at Doon (GA067-009) to the north of the site and by crannogs at Ross Demesne (GA068-066) and An Cnoc Bán (GA068-031001) on Ross Lake, and Gortacarnaun on Lough Naneevin (GA067-011) to the north and east. Churches at Rosscahill East (GA068-061001), Boleyvaunaun (GA068-005001), Garrynagr (GA068-015001) and Killinin (GA068-024) are indicative of increased settlement of the more fertile lowlyings lands to the north and east of the site throughout the medieval period.

Children’s burial grounds may have originated in the medieval period but most Irish examples are believed to date to the late medieval and early modern period, often reusing earlier Christian sites – particularly (but not exclusively) church sites and ringforts. They remained in use in Connemara as late as the 1950s although the practice had largely died out by then. There are two children’s burial grounds in the study area; one in the more settled area to the southeast at Coolough (GA068-009) and one to the east in Knockranny (GA067-033), the latter being recorded by tradition rather than upstanding remains.

The clachans and small farm holdings marked on the first edition ordnance survey maps are clear evidence of pre-famine settlement in the area. The recorded sheepfolds at Uggool (GA067-023 and GA067-036) are most likely associated with this period of settlement. The recently discovered corn-drying kilns at Uggool (GA067-034 and GA067-035) are thought to be associated with the illicit production of poitin and are likely to date from the 19th or early 20th century.

The original landscape in which these monuments were constructed has changed a great deal, mainly as a result of commercial forestry plantations.

12.4.1.4 Newly Recorded Monuments
No new archaeological sites were noted within the development site.

12.4.2 Architectural and Cultural Heritage
A number of documentary and cartographic sources were consulted in order to ascertain the potential for the presence of architectural /cultural heritage features on or within the area of the proposed development. Field inspection of the site also assisted in establishing the potential for the presence of architectural / cultural heritage features. Architectural and cultural heritage includes items such as buildings, farmhouses, gates, bridges, piers, and stone field boundaries. In this instance no features of high architectural merit were encountered within the site boundary. However, several items of vernacular architecture were recorded including the remains of three clachans recently revealed after tree felling. Any possible impact on these features was designed out through the iterative process. The 1st and 2nd Edition OS mapping was consulted as various features such as townland boundaries, limekilns, fords and bridges are marked on such mapping.

12.4.2.1 Townland Boundaries
A number of townland boundaries are located within the study area and within the site development boundary. The boundaries consist mainly of watercourses or low dry-stone walls and associated post-and-wire fencing. Townland boundaries were recorded for the first edition Ordnance Survey mapping of the nineteenth century. The townlands were then utilised as formal administrative units for the census and as the basic framework for Griffith’s Valuation. Townland boundaries take a variety of forms and may consist of earth and stone banks and associated ditches or stone walls or natural features. Townland boundaries are areas of archaeological potential being liminal spaces often marked in antiquity by ritual, territorial or apotropaic activity. The
townland boundaries in the EIAR site boundary are largely co-extensive with the site boundaries or are rivers. The Letter (Leitir), Owen Ardderroo (Abhainn Na hArd Doiriú) and Owen Boliska (Abhainn Bhoth Loiscthe) rivers form the site and townland boundaries on the north, east and south while the Sruffaun Beg (Srutháin Beag) forms part of the west site boundary. Within the site development boundary, the Owen Boliska forms the townland boundaries between Finnnaun and Letter, and Finnnaun and Ardderroo. A small stream forms the southern extent of the townland boundary between Letter and Ardderroo, the northern extent extends through what was formerly open bogland but is now partly within commercial forestry plantation.

Letter (Leitir) is a townland of 1,692 acres in the barony of Moycullen, civil parish of Killannin in County Galway. In the Down survey of 1641 the townland is called Leater and Mullan. The land was owned by Ervan Flaherty and following the Cromwellian confiscations was transferred to Stephen Lynch. Letter is described in the Ordnance Survey name books of 1842 as:

"all mountainous and entrespersed with rocks. Letter Lodge is surrounded with a small plantation. There is a part of this townland cultivated, Sruffaunbeg is on the W. boundary. Loughnawallan on S.E. boundary between Letterfir and Ardderroo townlands. Loughauneethree on N. boundary junction of this townland Buffy and Derryvohil. Loughnawallaun S. of townland Letter River forms part of the boundary on the N. between this and Killygile townland. Nothing more remarkable in it."

Griffith’s valuation records a William Poe as the sole occupant of Letter in the 1850s. The placename means a wet or ‘spewy’ hill.

Ardderroo (Na hArd Dioriú) is a townland of 844 acres. In the Down Survey it is named Ardnasellagh and was in the ownership of the Earl of Clanrickard who retained it. Ardderroo is described in the Ordnance Survey namebooks as:

"mountainous with the exception of a small portion of cultivated land which is attached to the villages W. thro’ the East boundary. Loughnawallan on the W. boundary, Laughbeg and Loughardderroo on the S. boundary, Loughbeg Tullaghnoan on the S.E. boundary and Loughfadda N. of townland and Lough Thoulaghcrone S. of townland. Boolishka River forms a good portion of the boundary on the E."

Griffiths Valuation records an Ambrose Rush living in Ardderroo at that time. The placename means height or hill of oaks, though the earlier name Ardnasellagh refers to willows.

Finnnaun (Fionnán) is a townland of 7,555 acres. The Down Survey records the pre-confiscation landowners of Finnnaun as Bryan and Roger O’Flahetye. They were replaced by Nicolas Bourke and Sir Roger Jones. According to the Ordnance Survey name books:

"The entire of this townland is mountainous. There is very little of it cultivated. Loughfaddaunnaveeghly, Loughcruckanalte, Loughergooa, Loughcanagrin are on the S.W. and S. boundaries. Loughmore, Bealanabrack, Loughanayalla, Loughbeghaunacuatha are on the S. boundary. There is nothing remarkable in it."

The placename means fair coloured land.
Figure 12.4 Townland Boundary Map

MAP TITLE: Townland Boundary Map
PROJECT TITLE: 160815 - Ardderoo Wind Farm, Co. Galway
DRAWING BY: Eoin McCarthy
CHECKED BY: Michael Watson
DATE: 25-10-2018
ISSUE NO.: 160815-2018.10.25-F

Map Legend

EIAR Site Boundary

Ordnance Survey Ireland Licence No. AR 0021818 © Ordnance Survey Ireland/Government of Ireland
12.4.2.2 Principal Buildings
The principal buildings are those named on ordnance survey mapping, such as 'Letter Lodge', and buildings whose size, extant remains and/or associated landholding indicate that they were structures of some importance in the local area. There are two buildings in Letter townland included in this category.

![Figure 12.5 Extract from 1st edition OS six inch map showing Letter Lodge and associated landholding](image)

![Plate 12.9 Letter Lodge, view from southeast](image)

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<td>Townland</td>
<td>Letter</td>
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<td>Type</td>
<td>Architectural Heritage</td>
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<tr>
<td>ITM</td>
<td>E113708, N234936</td>
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<tr>
<td>Description</td>
<td>One and half storey cottage with dressed quoins, brick surrounds to openings with flat arches above. Associated landholding is largely planted. Reputed to have been a hunting lodge of the Martins of Ross. Also known as a herd’s house. Occupied by William Poe who held the property from James O’Hara in the 1850s. David Walsh</td>
</tr>
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was the tenant in 1890. In use as a private residence.

Sources
First edition OS map, OS name books, Griffiths Valuation

Distance
175m northwest of substation

Figure 12.6 Extract from 1st edition OS six inch map showing building and associated landholding at Letter

Plate 12.10 Building in Letter, view from southeast

Status
Not protected

References
None

Townland
Letter

Type
Vernacular architecture

ITM
E112978, N234701

Description
Building and associated landholding marked on first edition OS map. Building comprises the ruin of a well-built stone house with single door and window openings in the south wall. There is a substantial landholding associated with the building. Letter clachan is immediately southwest while Letter Lodge is a short distance to the northeast.

Sources
First and second edition OS maps
Distance

350m north of T9

12.4.2.3 Clachans

Following the massive expansion of population in the late 18th and early-mid 19th centuries, previously marginal land was opened up by the creation of new clustered *baille* or clachan settlements. These settlements were often shared tenancies with an infield area of enclosed cultivation plots (often located on dry, rocky ground) and a larger and much more extensive outfield of unenclosed common grazing. The remains of these settlements now dot the Connemara landscape and there are remnants of three small clachan settlements located within the EIAR site boundary.

![Figure 12.7 Extract from 1st edition OS six inch map showing Letter clachan](image1)

![Figure 12.11 Letter clachan, view from south](image2)

Status

Not protected

References

Letter

Townland

Letter

Type

Vernacular architecture / Cultural heritage

NGR

E113005, N234432

Description

Marked on first edition OS map as a cluster of 7-9 buildings with a small plantation on the east and a network of fields and a well on the west. It is located southwest of Letter Lodge at the
terminal point of the road/track into the townland from the Moycullen-Oughterard Road. Named ‘Letter’ it has the appearance of a small clachan although there is no reference to any village here in the Ordnance Survey name books, and records show only one occupant in the townland. Local information suggests it was known as the ‘Moran Homestead’ and contained a ‘shop’. The structures themselves are of an almost ad hoc construction with no evidence of quoins, dressing, coursing or mortar. The corners of the buildings are rounded and huge boulders are incorporated into some of the walls. Doorways are present but no window openings are apparent.

Sources
First and second edition O.S maps, O.S. name books, Griffiths Valuation

Distance
100m west of T9

Figure 12.8 Extract from 1st edition OS six inch map showing Tullatee Hill clachan

Plate 12.12 Building overlooking valley in south extent of Tullatee Hill clachan
Status: Not protected
References: Tullatee Hill
Townland: Ardderroo
Type: Vernacular architecture / Cultural heritage
NGR: E114088, N33203
Description: Marked on first edition OS map as a cluster of 4-5 buildings and a possible well with a substantial network of fields. Located in the east of Ardderroo townland, close to the Owen Ardderroo River. Local information suggests it known locally as ‘Geibhinn na hÁrdoiriú’ (the Arderroo jail). The buildings were recently exposed by clear felling. They are of similar construction and form to those at Letter.
Sources: First and second edition O.S maps
Distance: 175m south of T19

Figure 12.9 Extract from 1st edition OS six inch map showing clachan in south of Ardderroo

Plate 12.13 Gable wall of building within clachan in south of Arddarroo

Status: Not protected
References: Not named
Townland: Ardderroo
Type: Vernacular architecture / Cultural heritage
ITM: E113637, N232504
Description
Marked on the first edition ordnance survey map as a cluster of 5 buildings and an associated landholding located in the south of Ardderroo close to the Owen Boliska River and Tullaghnanoonbeg Lough. Tullatee Hill clachan is less than 1km to the northeast and the two appear to be linked.

Sources
First and second edition O.S maps

Distance
1km southeast of T22

12.4.2.4 Sub-clachans / landholdings

Small landholdings with one or two associated buildings are described as sub clachans for the purpose of this report. Three such settlements, consisting of a small number of buildings surrounded by a network of fields, occur at remote locations within the development site. These may represent small farm-holdings on tiny pockets of better and slightly drier land.

Figure 12.10 Extract from 1st edition OS six inch map showing small landholding in East Finnaun

Plate 12.14 Section of wall abutting rock outcrop at site of sub clachan in East Finnaun

Status
Not protected

References
None

Townland
Finnaun
Type: Cultural heritage
ITM: E110255, N231671
Description: Small landholding with 2-3 buildings adjacent to a small stream in the south of Finnaun. Marked on 1st edition OS map but indicated as nothing more than a rocky outcrop on.

Status: Not protected
References: None
Townland: Finnaun
Type: Cultural heritage
ITM: E110255, N231671
Description: Small landholding with 2-3 buildings adjacent to a small stream in the south of Finnaun. Marked on 1st edition OS map but indicated as nothing more than a rocky outcrop on.
subsequent editions. Some walling observed during site inspection.

Sources
First edition OS map

Distance
300m southwest of T23

12.4.2.5 Minor Buildings

Minor buildings are those which are not directly associated with any other building or landholding. There are two such buildings located within the site boundary.

Figure 12.12 Extract from 1st edition OS six inch map showing building on north shore of Ardderroo Lough

Status
Not protected

References
None

Townland
Ardderroo

Type
Vernacular architecture [site of]

ITM
E113036, N232052

Description
Small building, possibly a boat house, shown on the north shore of Ardderroo Lough on first edition OS map but not indicated on subsequent editions. No trace observed during site inspection.

Sources
First edition OS map

Distance
500m south of T22

Figure 12.13 Extract from 1st edition OS six inch map showing building in north of Ardderroo

Status
Not protected

References
None

Townland
Ardderroo

Type
Vernacular architecture [site of]

ITM
E114089, N234216
Description: Small building, shown in the north of Ardderroo, immediately adjacent to the townland boundary with Letter, in what is now cut away bog. Marked on first edition OS map but not on subsequent editions. No trace observed during site inspection.

Sources: First edition OS map

Distance: 500m south of T11

12.4.2.6 Weir

Small fishing weirs are ubiquitous throughout Connemara; often surviving as no more than a line of stones narrowing the water flow into a small enough area to be netted. There is one weir within the site boundary.

Figure 12.14 Extract from 1st edition OS six inch map showing building in north of Ardderroo

Plate 12.16 Site of weir on the Owen Boliska River, view looking southwest

Status: Not protected

References: Weir

Townland: Finnaun

Type: Cultural heritage

ITM: E112186, N232832

Description: Weir on a bend in the Owenboliska River. Marked on first and second edition OS maps and situated in close proximity to a small land holding in the east of Finnaun. The weir is positioned at the tail end of a fast flowing section of the river. It is of rough construction consisting of little more than a band of stones and boulders in the river. Its purpose was to control and manage the flow of a section of the river making it easier to deploy
nets and assist in the water management of the river in times of low flows.

**Sources**
First edition OS map

**Distance**
325m northeast of T21

### 12.4.2.7 Stepping Stones

Stepping Stones are stones placed in a river or stream to facilitate access across the watercourse. The c. 1900 edition OS map shows 'Stepping Stones' at three locations on the site boundary.

**Plate 12.17 Stepping Stones on the Ardderroo River east of Tullattee Hill clachan**

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12.4.2.8 Protected Structures
There are no protected structures located in the study area. The nearest protected structures are associated with Ross Demesne, 1 kilometre northeast of the site boundary.

12.4.2.9 Language and the Gaeltacht
The site is located within a designated Gaeltacht area but no impact on the language is predicted.

12.5 Potential Impacts & Assessment of Effects
Unless otherwise stated, the potential impacts identified and mitigated for in the below are potential construction phase impacts.

12.5.1 Archaeology
Archaeological heritage is a non-renewable resource. The overall objective of this assessment of impacts and associated effects of the proposed development is to ensure that where a potential impact has been identified, that it can be mitigated against to ensure that the archaeological heritage will be available for future generations. The potential impacts on the recorded archaeological heritage are assessed here.

Potential impacts are assessed on the basis of the impact classification terminology outlined in Table 1.1 of the EIAR, with the significance of impacts being defined as either imperceptible, slight, moderate, significant or profound, or if no impact is predicted to occur, ‘No Impact’.

Impacts will be discussed here according to the types of impacts that may occur during and after the project has been completed. Levels of impacts used here are those defined in the Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports [EPA, 2017].

12.5.1.1 Potential Direct Impacts on Archaeological Heritage
Direct Impact refers to a ‘physical impact’ on a monument. The development consists largely of earthmoving activities such as peat and soil excavation during the construction of the Proposed Development. This may have potential negative impacts on the known archaeological heritage. These are outlined below with suggested mitigation measures.

12.5.1.1.1 Potential Impact of Construction Traffic and/or Groundworks on Recorded Archaeological Monument GA07-021
Potential Impact
The tracking of large machinery within the construction site boundary and peat/sod excavation for access roads, turbines, as well as clear felling has, in the absence of appropriate mitigation, the potential to directly impact on known archaeological features if present within a site.
Recorded Monument GA067-021 (Enclosure) is located within the EIAR site boundary, c.350 metres from the nearest proposed infrastructure. Given the distance to the enclosure no impact is predicted. However, mitigation is recommended to highlight the presence of the monument prior to the construction phase of the development.

**Mitigation**
A 30 metre buffer zone will be established around recorded monument GA067-021 and the monument will be fenced off prior to construction works. No ground works, tracking of machinery or storage of spoil will take place within the buffer zone.

**Residual Impact**
No impact. With the above recommended mitigation, the proposals will not result in the destruction or removal of the monument, and there will be no residual potential impact or effect on monument GA067-021 arising from the proposed development.

12.5.1.1.2 Potential Impact of Construction Traffic and/or Groundworks on unknown subsurface Archaeological Features

**Potential Impact**
A potential impact on an unknown archaeological resource also lies in the uncovering of sub-surface archaeological features during peat or soil excavation associated with the construction of the Proposed Development. The Proposed Development site is located in an area of varied landscape including commercial forestry and peatland.

Buried archaeological sites which have no visible surface trace may occur within the development site. Consequently, these sites, if present, may be heretofore unrecorded and do not appear on any maps (SMR or RMP). Ground disturbance associated with the proposed development has the potential to uncover such monuments and associated artefacts, particularly in areas now covered by peat or soil. The construction of the proposed wind farm, i.e. topsoil stripping and peat removal, could potentially have an impact on unknown sub-surface archaeological deposits or features which have no above ground expression.

**Mitigation**
Archaeological monitoring of all ground disturbance to include roads, substation, turbine hardstands, bases, construction compounds, borrow pits and cable trenching will be undertaken during the construction stage of the development. The archaeological monitoring will be undertaken with the benefit of a licence from the Department of Culture Heritage and the Gaeltacht (DCHG).

The archaeologist will be allowed sufficient time to obtain an archaeological licence for the monitoring prior to the commencement of the development. If archaeological features or finds are encountered during site works the archaeologist shall report the findings to the relevant authorities to discuss a suitable means of preservation of the features (preservation by record or preservation in situ may be required). A report on the monitoring will be submitted to the relevant authorities.

**Residual Impact**
No residual impact is predicted with proposed mitigation measures.

12.5.1.1.3 Potential Impact of Construction Traffic / Ground Works on Newly Recorded Archaeological Features
No Impact
No such sites were encountered during fieldwork therefore no mitigation is required in this regard. No impact is predicted to arise.

12.5.1.2 Potential Indirect Impacts on the Archaeological Heritage

Potential indirect impacts may arise where a monument or area of archaeological potential is situated in relative close proximity to a proposed development but is not directly (physically) affected by the development. In such cases the impact on the setting of the monument or views to and from it are assessed.

12.5.1.2.1 Potential Impact on On-Site Recorded Archaeological Feature

Potential Impact
One recorded monument, an enclosure (GA067-021) is located within relatively close proximity to proposed turbines or other elements of the proposed development and therefore may potentially be negatively visually impacted upon. However, the monument is quite inaccessible which limits its amenity value and the surrounding landscape remains largely covered in plantation forestry. Its amenity value will be increased by easier accessibility as a result of site roads which is a positive impact. The potential impact on views from the monument is considered to be slight to imperceptible.

Mitigation
Potential impacts on the on-site recorded monument were mitigated at the project design phase by constraining the area around the monument out of consideration for the siting of turbines and other infrastructure. No further mitigation is deemed necessary.

Residual Impact
Slight to imperceptible. There will be no significant effects on this monument.

12.5.1.2.2 Potential Indirect (visual) impact on the Recorded Archaeological Resource within 2km of the proposed development (Operational Phase)

There is potential for a slight visual impact on some of the cairns in that the proposed wind turbines will be visible in the landscape in which the monuments are located and they will be visible in the intervening landscape between some of the individual cairns. However, there are a number of mitigating factors and the effect of this is not considered significant.

Hilltop cairns are a common feature of the Irish landscape, with over 70 prehistoric examples on Irish mountains and many more on lower hills. There are however different types of Cairn, some in which visibility is considered an intended function and some where it is not.

Firstly, there are larger cairns such as Queen Medb Cairn on the summit of Knocknarea Co Sligo (10 metres high 55 metres wide), and closer to the site Carn Seefin (3.2m high 19m wide) near Oughterard which were built from as early as 3,500BC and show evidence of having been successively re-used and altered down to 1,000BC. These large cairns were arguably of at least regional significance and their presence transforms the profile of the hills on which they sit, potentially transforming them conceptually into “mega-monuments” in their own right.
Secondly, there are smaller hill-top cairns of more local significance. The Cairns in the immediate vicinity of the Ardderroo site, two of which were discovered by the author (M Gibbons), are of local significance. They were built along the hill-tops, marking and defining the edge separating the granite uplands from the more fertile and populated lowlands as well as [symbolically] acting as the liminal area between this world and the next. In other words, connecting the dead to their heavenly Gods.

Compared to the larger cairns, the cairns around the proposed wind farm site are extremely low profile monuments with a substantially smaller visual signature; being almost indistinguishable from the surrounding landscape to the untrained eye.

It is in fact unknown whether intervisibility ever played a role in the siting of these monuments and it is likely that for much of their existence the cairns were obscured by native woodlands. There is no evidence that the visual amenity of these cairns or their intervisibility was perceived to be a part of their significance in pre-history nor is it perceived to be so at the present time. They remain undated and such there is little definitive we can say about their cultural context.

Due to the large distances separating the proposed turbines from the cairns (the closest is c.1km from the nearest cairn – a far greater distance than would be considered reasonable for a low visibility monument), none will be directly impacted by the Ardderroo development and neither will their local setting.

In contrast to much larger cairns found elsewhere in Connemara such as those at Knocknarea and Carn Seefin, which stand several metres high and transform the profiles of the hills on which they sit the Ardderroo cairns are not prominent features in the landscape and intervisibility between them is poor.

The cairns are low visibility monuments, surviving as small mounds with a low visual profile, with GA067-025 and GA067-030 being the most visible. They were built in a profoundly different environment to that which exists today. Much of the uplands were covered in a dense forest of native pine trees (the stumps of which are visible in cutaway bog throughout the area) during the late Neolithic and Bronze Age. Subsequently, the area was covered by a layer of blanket bog which will have entombed many of the cairns. It is unknown whether the cairns were intervisible at the time of construction (they remain undated but are likely to have a broad range of dates stretching over c.3,000 years) or whether their siting was influenced by their intervisibility (if any) in antiquity. The intervisibility of the cairns is not perceived to be part of their significance at the present time among the local population.

GA067-030 is the best defined of the cairns but has a telecommunications mast, equipment cabins and access road constructed in close proximity within five metres to it. The mast dominates any views of this cairn.

Turbines will not be visible between cairns GA067-025 and -030, -030 and -031, -031 and -029. Where turbines will be visible within a view between two cairns they will not prevent or block the view but will form part of it. The setting of the monuments has already been changed by plantation forestry which dominates much of this area along with associated road construction as well as by other wind farm developments under construction. In consideration of all of the above the visual impact on the setting of the cairns is deemed to be slight.
12.5.2 Architectural and Cultural Heritage

Architectural heritage is a non-renewable resource. The overall objective of this assessment of potential impacts of the proposed development is to ensure that where a potential impact has been identified, that it can be mitigated against to ensure that
the built heritage will be available for future generations. The potential impacts on the built heritage are assessed here.

12.5.2.1 Potential Direct Impacts on the Architectural & Cultural Heritage

Direct Impact refers to a ‘physical impact’ on a structure. The construction phase of the development consists largely of earthmoving activities such as peat and soil removal for access roads, hardstand areas, turbine foundations, compounds and substation. This may have a number of potential negative impacts on the known architectural heritage. These are outlined below with the suggested mitigation measures.

12.5.2.1.1 Impact of Construction Traffic / Ground Works on Known Recorded and Newly Detected Architectural Heritage Features

The tracking of large machinery within the construction site boundary and peat/soil removal for access roads, turbines, etc has the potential to directly impact on known structures if present within a site.

Townland Boundaries

The townland boundaries in the study area are largely co-extensive with the site boundaries or are rivers. There are only three locations where townland boundaries are traversed by the proposed works within the development site; the bridge over the Owen Boliska River (Letter/Finnaun), the turbine access road extending between T10 and T15 (Letter/Ardderroo), and the new access road onto the N59 (Doon/Knockranny).

Mitigation

A wade survey shall be carried out at the site of the proposed river crossing on the Owen Boliska. The results of the wade survey shall determine if any further mitigation is required. Any upstanding and/or sub-surface remains of the townland boundary on the route of the access roads shall be recorded during the course of archaeological monitoring.

Buildings

No impact. No buildings will be affected by works associated with the proposed development. Letter lodge will be under the control of the wind farm developer and will be maintained in its current good state. It is not highly visible and does not offer a high visual amenity.

Mitigation

Potential direct impact has already been mitigated by design after the location of buildings was highlighted to the project design team and constrained out of consideration for the siting of turbines and associated works.

Clachans/Sub-Clachans

No Impact. None of the identified clachans will be affected by the works associated with the proposed development. Letter clachan is the only clachan which offers any visual amenity from exiting or proposed access roads. The highest visual amenity of Letter ‘clachan’ is from the road approaching from the east. This view will be preserved. It is proposed to leave the core of Letter clachan (plus a buffer of 5m) permanently clear felled and open to view as part of the recreation and amenity proposals for the development [Section 4.6 of this EIAR]. The clachan will be fenced off with light stockproof fencing to discourage entry.
Mitigation
Potential direct impact has already been mitigated by design after the location and extent of the clachans was highlighted to the project design team and constrained out of consideration for the siting of turbines and associated works. A full photographic record and condition survey of Letter clachan shall be carried out prior to the operational phase of the windfarm.

Weir/Stepping Stones
No Impact. Potential direct impact has already been mitigated by design after the location of the structures was highlighted to the project design team and constrained out of consideration for the siting of turbines and associated works.

Mitigation
Potential direct impact has already been mitigated by design after the location of the weir and stepping stones was highlighted to the project design team and constrained out of consideration for the siting of turbines and associated works.

Field Walls
There are a number of old field walls pertaining to the buildings, clachans and sub-clachans located on the development site. These walls are roughly constructed using field stones and boulders. Their construction undoubtedly served the dual purpose of clearing and enclosing the lands deemed suitable for grazing, cultivation and planting. Field walls that will be impacted by the proposed works include those located on the site of the proposed substation east of Letter Lodge. These walls are contemporary with the lodge, which was most likely built in the early 19th century, and represent the enclosure of marginal lands in the immediate vicinity of the house. Other field walls impacted by the development include a field wall west of Letter clachan which will be impacted by the proposed temporary construction compound and a field wall in Doon which will be breached by the proposed new access road from the N59. The field wall in Letter is contemporary with the clachan, dating it to the 18th or early 19th century. It is currently within forestry plantation. The field wall in Doon is likely of similar date as it is of similar type though it does not appear on the first edition ordnance survey map. It crosses open bogland linking the outfields of Knockranny Oughter with those of Doon Village. The walls have a relatively low architectural or cultural heritage value other than as representative examples of the enclosure of marginal lands in a barren, mountainous landscape.

Mitigation
Any field walls to be removed or breached to be recorded by means of photographic and written descriptions prior to removal and their removal will be archaeologically monitored.

Protected Structures
No Impact. No protected structures will be affected by works associated with the proposed development

12.5.2.2 Potential Indirect impacts on the Architectural & Cultural Heritage
Indirect Impacts are where a feature or site of architectural heritage merit or their setting is located in close proximity to a proposed development. Indirect impacts here are mainly concerned with visual impacts and impacts that occur associated with secondary activities associated with the main development such as construction traffic along haul routes, cabling for the grid connection. Consultation of the RPS and NIAH sites has shown that the proposed transport route will not traverse any structures listed in these resources.
12.6 Cumulative Impacts
It is not expected that there will be any cumulative impact associated with the proposed development in combination with other existing, permitted or proposed developments as listed in Section 2.6. As the Proposed Development will not have any significant effects on archaeology or cultural heritage, as outlined in the above section, then no significant cumulative impacts are anticipated.

12.7 Summary of Mitigation Measures
The following provides a consolidated list of mitigation measures, as outlined in Section 12.5, that are required to minimise the potential impacts of the proposed development and limit them to an acceptable level. The following mitigation measures are recommended in the interest of safeguarding the archaeological and architectural heritage of the study area.

- A 30m buffer zone will be established by an archaeologist around monument GA067-021 and the monument fenced off prior to construction works. No ground works, tracking of machinery or storage of spoil will take place within the buffer zone.
- Archaeological monitoring of ground works (to include roads, substation, turbine hardstands, bases, borrow pits and cable trenching) will be undertaken at the construction stage of the development. The archaeological monitoring will be undertaken with the benefit of a licence from the DAHG.
- A written and photographic record of field walls that will be impacted by the development.
- A wade survey shall be carried out at the site of the proposed river crossing on the Owen Boliska.
- The archaeologist should be allowed at least 4-5 weeks to obtain an archaeological licence for the testing and/or monitoring prior to the commencement of the development. If archaeological features or finds are encountered during site works, the archaeologist shall report the findings to the relevant authorities to discuss a suitable means of preservation of the features (preservation by record or in situ may be required). A report on the monitoring will be submitted to the Local Authorities and DAHG.

12.8 Conclusion
This report was carried out as an Archaeological, Architectural and Cultural Heritage Impact Assessment to be submitted as part of the EIAR to accompany a planning application for a proposed wind farm development at Ardderloo, Co. Galway. The assessment included desktop research and a programme of field walking to identify areas of archaeological/architectural/cultural heritage potential. Recorded Monument GA067-021 is located within the site study area. The monument is located 300m from the nearest infrastructure and consequently no direct impacts on the monument are anticipated. It is proposed to establish a 30m buffer zone around the monument in order to highlight its presence during the construction phase of the development. No new archaeological sites were encountered during field inspection. Archaeological monitoring of all ground works at the construction phase of development should be carried out in order to avoid any potential direct or indirect impacts on sub-surface archaeological finds, features or deposits which may exist on the site.
'Predicted Impacts' are defined as the impacts which are expected to occur as a result of the development proposal (Guidelines on the information to be contained in Environmental Impact Statements 2002, 23). No direct 'predicted' impacts should occur as part of the development once the necessary mitigation measures are put in place. No proposed turbines are located directly adjacent to any recorded monument, and therefore the visual impact of the proposed turbines on the setting of the lone on site recorded monument will not be significant. It is not possible, however, to alleviate or negate visual impacts where turbines may be visible from recorded monuments. No monuments are located directly adjacent to any proposed turbines. In this regard, the predicted impacts are likely to be slight to imperceptible. There will be a slight visual impact on the group of cairns in that the setting will be altered but not to a significant degree.

It can be concluded, based on the above identification of potential impacts and proposed mitigation measures, that the proposed wind energy development will not have a significant effect on Archaeology and Cultural Heritage.