UWF Grid Connection EIA Report (2019)

Volume C2: EIAR Main Report

Chapter 16: Cultural Heritage

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Figures and mapping referenced in this topic chapter can be found in **Volume C3 EIAR Figures.**

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Glossary of Terms

Term	Definition
Sensitive Aspect	Any sensitive receptor in the local environment which could be impacted by the project.
Project Design Measure	Measures for environmental protection, incorporated into the design of the project.

List of Abbreviations

Abbreviation	Full Term
RMP	Record of Monuments & Places
NIAH	National Inventory of Architectural Heritage
PD	Ecopower Project Design Environmental Protection Measure developed by members of the EIAR Team
UGC	Underground Cables
UWF	Upperchurch Windfarm

Executive Summary of the Cultural Heritage Chapter

Baseline Environment: The Slievefelim to Silvermine Mountain uplands area, is a region with a rich and diverse history of human settlement going back to prehistoric times, which is reflected in the archaeological record. The cultural heritage assessment focuses on cultural heritage sites within the geographical study areas – i.e. within construction works areas (and in some cases, within 500m of construction works areas); and within 2km of the Mountphilips Substation.

Survey Results for Sensitive Aspects in the Baseline Environment: The full development area was examined through a review of the Sites and Monuments Record, topographical files of the National Museum of Ireland, published and unpublished sources, cartographic analysis, reviews of historical and aerial mapping and thorough field walking. A full list and description of the Sites recorded/identified within the UWF Grid Connection Study Areas is included in Appendix 16.1: Detailed Description of Cultural Heritage Sites. An Architectural Heritage Impact Assessment for Anglesey Bridge was also carried out, see Appendix 16.2 Architectural Heritage Impact Assessment of Anglesey Bridge NIAH 22403905.

Recorded Legally Protected Sites relate to heritage sites recorded on the Record of Monuments & Places – i.e. RMP sites. In total there are 39 No. Recorded Legally Protected Sites within the 500m UWF Grid Connection Study Area and a total of 14 No. sites within 2km of Mountphilips Substation.

Other Recorded Sites relate to heritage sites recorded on the National Inventory of Architectural Heritage or on the NIAH Garden Survey. In total, 12 No. Other Recorded sites were recorded - 8 No. within the 500m UWF Grid Connection study areas and 8 No. sites within 2km of Mountphilips substation. Seven Sites are identified on the National Inventory of Architectural Heritage (NIAH) and five are demesnes listed on the NIAH Garden Survey.

Previously Unrecorded Sites are sites identified on historic Ordnance Survey Maps and/or recorded during field walking or from reviews of aerial photography. A total of 51 No. sites were recorded within the UWF Grid Connection Study Area. These sites mainly comprised of Lime Kilns, Wells, Quarries and Townland Boundaries, some of which may not have ever had any structural elements associated with them or are no longer standing.

Unrecorded Subsurface Sites relates to structures or artefacts which are currently undiscovered but which may potentially exist under the ground surface.

Summary of the Significance of the Impacts to Recorded Legally Protected Sites: 39 No. sites are within 500m of UWF Grid Connection construction works areas. No Recorded Legally Protected Sites are likely to be affected by construction works due to the distance of these sites from the construction works areas, which are located outside the Zone of Notification for all but 3 No. sites. However, **no destruction impacts** are any expected to these 3 no. sites due to the location of the 110kV UGC in public road pavements. In any case, project design measures include the archaeological monitoring of groundworks and excavations within 500m of RMP sites. In relation to the Operational Stage, 4 No. sites (of the 14 No.) within 2km of the operational Mountphilips Substation will have *theoretical* visibility of the new Mountphilips Substation, however due to the low lying location, there will be **no visual impact** as the substation will be completely screened from view from all of these 4 No. sites. **Cumulative effects with Other Elements** of the Whole UWF Project are not likely during construction, and have no potential to occur during the operational stage. Overall, the **whole project effect** will be **Imperceptible**.

Summary of the Significance of the Impacts to Other Recorded Sites: 8 No. Other Recorded Sites are within 500m of UWF Grid Connection construction works areas. In relation to the Operational Stage, there is 1 No. site within 2km of the operational Mountphilips Substation which will have *theoretical* visibility of the new

Mountphilips Substation. There is **no potential for complete or partial destruction** of Other Recorded Sites from groundworks for the development, due to separation distance (6 of the 8 No. of the sites); and due to the fact that Mountphilips Demense site has no extant features and has been subsumed into the modern agricultural landscape in the area; and due to no interaction with the columns or supporting structures of Anglesey Bridge. There is **no potential for visual impact** from Mountphilips Substation as the only Site which would have visibility of the new substation is the Mountphilips Demense, which as stated above, has no extant features and has been subsumed into the modern agricultural landscape**.** There is **No potential for cumulative impacts** due to the absence of Other Recorded Sites in proximity to Other Elements of the Whole UWF Project**.**

Summary Impact on Previously Unrecorded Sites: Due to the location of the 110kV UGC on paved roads outside the Mountphilips Substation site, the separation distance to Previously Unrecorded Sites and the monitoring of groundworks within 500m of an RMP or NIAH site, the potential for damage to Previously Unrecorded Sites is limited to townland boundaries at the Mountphilips Substation site where a 160m section of the Coole/Freagh townland boundary will be removed to facilitate the widening of the entrance from the public road and a 10m section of the Mountphilips/Coole townland boundary will be removed for the new permanent access road to the Substation compound. This impact is evaluated as **Imperceptible**, mainly due to the small extent of change to these boundaries. **Visual impacts are not likely to occur**, as none of the 22 No. Previously Unrecorded Sites which occur within 2km of Mountphilips Substation, will have visibility of the Substation. There is **no potential for cumulative impacts** due to the separation distance to Other Elements of the Whole UWF Project**.** Overall the **whole project effect** is evaluated as **Slight.**

Summary Impact on Unrecorded Subsurface Sites: By their nature, the magnitude of the impact of the development on Unrecorded Subsurface Sites cannot be determined at this stage. It is possible that unknown archaeological materials could be impacted upon by the UWF Grid Connection works, particularly at the Mountphilips Substation site where works will take place to remove sections of townland boundaries and where groundworks occur in the Other Recorded Site *GR3 Mount Philips Demesne*, and along the Regional Road R503 where 110kV UGC works will occur within the Zone of Notification for Recorded Legally Protected Sites; *GL18 – Ringfort (rath)* in Derryleigh, *GL28 – Enclosure* in Scraggeen and *GL34 – Mine (copper)* in Lackamore. It is considered that Unrecorded Subsurface Sites exposed during the course of construction ground works are most likely to involve levelled earthworks, backfilled cuts, and areas of large scale burning or artefact scatters. It is unlikely that any fully intact remains of special archaeological significance will be uncovered. The potential for impacts is mitigated by the provision for archaeological monitoring of all ground works relating to the construction, within 500m of an RMP or NIAH site, and the location of works taking place in extensively improved lands at Mountphilips, and within road pavement outside the Mountphilips Substation site. It is evaluated that UWF Grid Connection may cause **Slight Impacts** to Unrecorded Subsurface Sites. Furthermore, it is considered that there is **no potential for cumulative effects**, as any Unrecorded Subsurface Sites if present, will only be affected by initial groundworks. Overall the **whole project effect** is in the order of UWF Grid Connection – i.e. **Slight.**

<u>Conclusion: The UWF Grid Connection will not cause significant adverse effects to Cultural Heritage</u>.

16 Environmental Factor: Cultural Heritage

16.1 Introduction to the Cultural Heritage Chapter

16.1.1 What is Cultural Heritage?

Cultural Heritage relates to sites of archaeological, historical or architectural significance within the receiving environment. The study of Cultural Heritage, or archaeology, is the study of past societies through the material remains left by those societies and the evidence of their environment. Cultural Heritage consists of such material remains (whether in the form of sites, monuments, and historic structures or artefacts in the sense of moveable objects) and environmental evidence.

The legal definition of a Monument is defined in section 2 of the National Monuments Act 1930 as any a) artificial structure or group of structures, b) any cave, stone or other natural product, that has been carved, sculpted or worked upon or appears to have been purposely arranged, c) any part of any prehistoric/ancient tomb, grave or burial deposit, ritual, industrial or habitation site, and d) any place comprising the remains or traces of any structure, erection, cave, stone or natural product of any tomb, grave, burial deposit or ritual, industrial or habitation sites situated on land or in the territorial waters of the state. This definition is very broad and overlaps with a number of the other categories of cultural heritage such as architecture.

Archaeological objects are defined in section 2 of the National Monuments Act 1930 as "any chattel whether in a manufactured or partly manufactured or unmanufactured state which by reason of the archaeological interest attaching thereto or of its association with any Irish historical event or person has a value substantially greater than its intrinsic (including artistic) value, and the said expression includes ancient human, animal or plant remains".

Architectural heritage is defined in the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 as "(a) structures and buildings together with their settings and attendant grounds, fixtures and fittings, (b) groups of such structures and buildings, and (c) sites".

Landscape comprises the visible features of an area of land, including physical elements such as landforms, living elements of flora and fauna, abstract elements like lighting and weather conditions, but from a cultural heritage viewpoint it is the human elements and the built environment that are most significant.

Cultural heritage can vary greatly in form and date. Sites may have no visible surface features; the surface features of an archaeological site may have decayed completely or been deliberately removed but archaeological deposits and features may survive beneath the surface. Such sites may sometimes be detected as crop-marks visible from the air or have their presence indicated by the occurrence of artefact scatters in ploughed land, but in other cases may remain invisible unless uncovered through ground disturbance.

16.1.2 Overview of Cultural Heritage in the Local Environment

The UWF Grid Connection is located in the Slievefelim to Silvermine Mountain uplands area, which is a region with a rich and diverse history of human settlement going back to prehistoric times. This extended period of occupation is reflected in the archaeological record. This report focuses on cultural heritage sites within the geographical study areas – i.e. within construction works areas and in some cases, within 500m of construction works areas; and within 2km of any above ground structures associated with the project.

Within 2km of the UWF Grid Connection, a total of 111 Cultural Heritage Sites were identified and described. These included 49 No. sites listed on the Record of Monuments and Places (RMP), 7 listed on the National Inventory of Architectural Heritage Building Survey, 5 on the National Inventory of Architectural Garden Survey, and 50 sites (wells, lime kilns, houses and fords etc) shown on various editions of the historic Ordnance Survey maps.

While the spread of these monuments date from the Neolithic through to post medieval and modern times, the upland region appears to have been most intensively settled in the late Neolithic, with populations dispersing to the lower slopes during later periods (Grogan 2005, 21).

The location of the UWF Grid Connection within the Slievefelim to Silvermine Mountain uplands area is illustrated on OSI Mapping on Figure GC 16.1: Location of the UWF Grid Connection on Historical Mapping.

Figures and mapping referenced in this topic chapter can be found in Volume C3 EIAR Figures.

Note: For ease of reading and mapping, Cultural Heritage sites within the study area have been numbered as follows;

- GL – Recorded Legally Recorded Sites within the UWF Grid Connection Study Area
- GR – Other Recorded Sites within the UWF Grid Connection Study Area
- GU – Other Previously unrecorded Sites within the UWF Grid Connection Study Area

These Sites are numbered from West to East. The location of these sites as well as the Archaeological Reference number are presented on the Figures which accompany this chapter (see Volume C3: EIAR Figures).

See also Appendix 16.1: Detailed Description of Cultural Heritage Sites **(Volume C4: EIAR Appendices).**

16.1.2.1 Archaeological Surveys in the General Area of the Development

The monuments of Tipperary were surveyed in the early 1980s by the Archaeological Survey of Ireland. A review of prehistoric archaeology in Tipperary undertaken by Richard Raleigh (1985) highlighted the prehistoric richness of this North Tipperary region, while between 1992 and 1995 the North Munster Project of the Discovery Programme sought to understand settlement patterns over a vast 7000km^2 area that centred on the lower Shannon catchment (Grogan 1996). An Archaeological Inventory for County Tipperary was published in 2002 (see Farrelly and O'Brien 2002).

In 1959, Michael O'Kelly from the Department of Archaeology, University College Cork, excavated one of the most visually impressive monuments in the region, the prehistoric Wedge tomb of Baurnadomeeny (RMP TN038-009), which is located c800m north of the proposed UWF Grid Connection on the southeast face of Moherslieve (O'Kelly 1959; 1961).

These works all formed the core of the desk study portion of this report

16.1.2.2 The Mesolithic Period (7000-4000BC)

While there are no sites within the study area which can be directly attributed to this period, some 20km to the south of the study area, in the townland of Rathjordan, a small group of Early Mesolithic microliths were identified among the finds from an excavation of a ring barrow carried out in the 1940s (Woodman 1986, 10). A precise date for this material is impossible to ascertain other than it was most likely earlier than 6000 BC (Woodman 1986, 10). This might indicate that the wider region, in particular lower slopes of the western Silvermine Mountains, may have been a location for some of the earliest human settlement in the country.

16.1.2.3 The Neolithic Period (4000-2400BC)

The Neolithic period sees the first concrete evidence of human settlement in the study area. While people in the Neolithic were predominantly farmers and lived in rectangular or circular/oval shaped wooden houses, it is their megalithic tombs and cairns which leave a lasting visual impression in the landscape. A court tomb at Shanballydesmond (RMP TN038-013), c510m south of the UWF Grid Connection, is the oldest known Neolithic monument in Tipperary (Raleigh 1985). Excavations by Kelly in 1958 inside the tomb yielded six unburnt or cremated human remains and tools of flint and chert. The tomb itself sits at high point in the landscape overlooking the Bilboa River. Several other Megalithic Tombs have been identified within the study area where not enough remains to accurately attribute them to a specific period. While they are most likely later Wedge Tombs (see below), the possibility remains that they are earlier Neolithic examples.

Another probable Neolithic monument class is a cairn, and one such monuments is c1.1km north of the study area (UWF Grid Connection). This cairn, located at Baurnadomeeny, (TN038-007001), is located on the southwest of Mauherslieve and contains a cist burial (TN038-007002)

Neolithic Period: Cairn and Cist at Baurnadomeeny

16.1.2.4 The Bronze Age (2400-500BC)

The Bronze Age period is represented in the region area by several main site types: wedge tombs, barrows, standing stones, stone circles/rows and fulachta fiadh. The tradition of megalithic tomb construction in the region continued through into this Early Bronze Age period with the construction of a number of wedge tombs. These tombs date to between 2300 and 2000 BC and are often associated with the Beaker pottery of the Early Bronze Age (Newman and Halpin 2000, 9). There are a total of four examples of wedge tombs

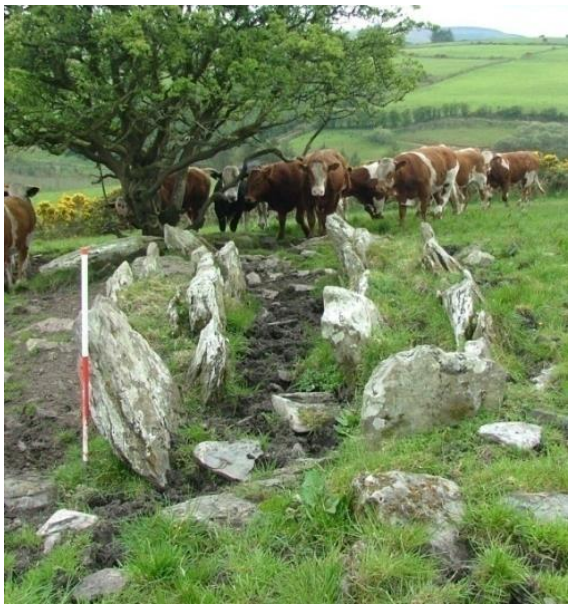
located in the area (GL47 *TN039-009*, *TN039-008*, *TN039-017* and *TN039-016*). There are also three additional megalithic tombs (TN039-050, TN039-045 and TN039-037) which have not been classified by the RMP, but most likely fall within this category. The most prominent and complete wedge tomb is located at Knockcurraghbola Commons and sits on the southern slopes of a small knoll. It is situated within the study area, 380m northwest of the UWF Grid Connection. The tomb is 7m long and decreases in height and width from southwest to northeast.

Another complex of four tombs – two of which are wedge tombs and two are possible wedge tombs – are located 1.5m southwest of the Knockcurraghbola Commons tomb are also in this townland. The first one is the most preserved of this group. These tombs were visited by the author as part of the field survey carried out for the archaeological assessment of the Upperchurch windfarm in 2012.

Elsewhere, excavations at the Baurnadomeeny Wedge tomb (c800m north of the proposed UWF Grid Connection) by O'Kelly yielded 21 burials and a range of flint tools (Raleigh 1985). A distribution analysis of the tombs of the study area and the immediate surroundings of the Silvermine Mountains revealed that these types of burial monuments were not on the summits of hills like in the Neolithic but were more generally on lower lying, sloping land. The Wedge tombs are associated with a series of rivers and streams that ultimately flow into the River Shannon, with the exception of the Knockcurraghbola Commons group, which are at the juncture where streams flow to both the Bilboa River (and on to the Shannon) and the Turraheen River, which connects with the Suir River.

Wedge Tomb in Knockcurraghbola Commons townland

Megalithic Tomb in Knockcurraghbola Commons townland



Megalithic Tomb in Knockcurraghbola Commons townland

Megalithic Tomb in Knockcurraghbola Commons townland

Megalithic Tomb in Knockcurraghbola Commons townland

Megalithic Tomb in Knockcurraghbola Commons townland

Wedge Tomb in Baurnadomeeny townland

The Middle Bronze Age period is represented in the study area by standing stones, stone rows and stone circles. There are at least 3 examples of standing stones (TN039-004002, TN039-043, and TN039-044), a stone circle (TN039-004001), and a stone row (TN039-052) from the area. Distribution and viewshed analyses (carried out in 2012 by the author) of the standing stones within and adjacent to the study area show a

striking pattern: they are overwhelmingly placed at positions which overlook the numerous rivers and streams.

Standing Stone in Knockcurraghbola Crownlands

Standing Stone in Knockcurraghbola Commons

Stone Row in Knockcurraghbola Commons

Test excavations were also carried out in the vicinity of the Stone *Row* in Knockcurraghbola Commons townland (shown in the photo directly above) by the author in 2017 as part of the EIAR studies for the UWF Related Works project. The investigation revealed nothing of archaeological significance.

A single fulacht fiadh, a type of Bronze Age site where water was heated for both domestic and ritual use, was identified within the development area (TN039-051) in Knockcurraghbola Commons townland. This was located to the south of –the Stone Row in an area completely covered by dense mature forestry.

16.1.2.5 The Iron Age (2400-500BC)

Later burial monuments come in the form of barrows. There are three examples of this monument type in the area (TN031-071, TN037-044 and TN039-035). These burial mounds are generally dated to the Late Bronze and Early Iron Age but may be earlier.

No work has been carried out on any of the examples from within the study area to more accurately date these monuments. As with the earlier megalithic examples there is a high concentration of these monuments evident in the wider landscape of the development area. One example, a well preserved bowl-barrow (Site GL13) is located *c.125*m from the UWF Grid Connection development area.

Site GL13 - Bowl Barrow from south

To make sense of the prehistoric site distribution patterns and the heavy concentration of prehistoric monuments in the upland region, Raleigh (1985) observed that mineral resources may have been an attraction for settlement. There is 1 no. mine recorded in the study area, a prehistoric copper mine 40m south of the study area in Lackamore (GL34 - TN038-020).

16.1.2.6 The Early Medieval Period (400-1100AD)

Occupation continued during the Early Medieval (c.400-1100 AD) period with a large concentration of ringforts to be found on the slopes of the Silvermine Mountains. Ringforts enclosed single farmsteads and are by far the most common medieval archaeological monument surviving in Ireland with over 47,000 examples having been identified across the island (Aalen et al. 2012, 45).

Although there are some examples dotted around the valleys in the Silvermine mountains, ringforts typically avoided upland areas. This monument type is more commonly found on flat ground and the lower slopes of river valleys. Within the study area there are a total of 9 ringforts. All bar one of these is located at the western extents of the development area.

There are also enclosures (Site GL23 TN-37-022, Site GL28 TN37-031, GL42 TN39-025001 and GL43 TN39-025002) within the study area which may be attributed to this period.

The Early Medieval period also saw the spread of Christianity across Ireland and many churches and monastic centres emerged during this period. The significance of holy wells and other sites of ritual significance, such as bullaun Stones, can be traced back to this period. While it is unclear that any of the four medieval churches from the study area have their origins in this period, within the environs of the proposed development there are three holy wells (Site GL5 TN031-010002 and Site-GL10 TN031-072) and two bullaun stones (Site GL1 TN031-009 and Site GL32 TN037-032002).

16.1.2.7 The Later Medieval Period (1179-1400AD)

The next significant archaeological period for the region followed the Anglo-Norman conquest in the late-12th century. During this period the western portion of the study area was part of the kingdom of Limerick (Empey 1985, 76). It was conquered by 1206 and the previous Gaelic order was replaced by a new feudal regime that was organised on entirely different principles (Empey 1985, 76). The Anglo-Norman conquest had a massive impact on the landscape of Ireland. With the conquest came a new architecture of power in the form of great stone castles, cathedrals and churches. These great buildings were designed and located to assert the new-found dominance of the Anglo-Normans over the landscape, the people and their traditions. Within the broader landscape of the proposed development area there are a wide array of examples of Anglo-Norman buildings, from early motte and baileys through to the subsequent masonry castles and churches.

The two churches within the study area (Site GL4 and Site GL12), possibly dating from the medieval period, provide evidence for the Anglo-Norman encroachment into the locality. Within the broader region of the Silvermine Mountains there is greater evidence of this conquest, specifically the military aspect. The castles are situated at the foothills of the mountains overlooking the Clodiagh and Owenbeg rivers but not in the upland regions, which would have remained out of Norman influence. These frontier castles (for example Site GL7, *tower house*) appear to defend a key routeway into the mountainous regions of North Tipperary.

16.1.2.8 The 'Age of Improvement' (17th-18th Century)

In the 17th-18th-centuries country estates known as demesnes emerged across the country. These had their origins in the "Age of Improvement". Demesnes consisted of designed landscapes which were usually enclosed by stone walls and were often entered through elaborate gate lodges and gateways. They often contained an area of managed woodland known as a wilderness; this included pathways for the gentry to stroll through. Trees were planted along the roads in the estate to create shelter belts and avenues along the approaches to the 'Big House'. The houses formed the centrepiece of every demesne and were generally constructed in the Palladian style which drew on aspects of Classical Roman and Greek architecture.

Within the study area, a total of five designed landscapes are shown on the first edition Ordnance Survey Maps. The Mountphilips 110kV Substation is located within the footprint of Mount Philips Demesne (GR3). Within the immediate vicinity of the substation site are two additional demesnes, Barna Demesne (GR4) and Rockvale Demesne (GU7). Practically all features associated with these sites within the vicinity of the development area are no longer extant.

16.1.2.9 Early Modern Period (1850-Present)

Agricultural farming and land improvement is evident across the majority of the study area. This is characterised by large scale land enclosure in upland areas and the presence of a significant number of smithys, lime kilns, gravel pit and quarries present in the study area.

In 1973, Ireland's accession to the E.E.C. (E.U.) and the subsequent effects of the Common Agricultural Policy (CAP) had far reaching consequences for the landscape. CAP promoted intensification and industrial-scale farming which was mainly responsible for the destruction of many of the field-boundaries marked on the first edition map of the development area. The land in the area is now a mix of improved agricultural grassland and wet grassland employed for pasture, though coniferous forest also makes up a sizeable proportion – c.30%.

16.1.3 Sensitive Aspects of the Cultural Heritage Environment included for further evaluation

Any sensitive receptor in the local environment which could be impacted by the project is a Sensitive Aspect. The following Sensitive Aspects **are included in this topic chapter** as they could be potentially impacted:

Sensitive Aspect No. 1	Recorded Legally Protected Sites	Section 16.2
Sensitive Aspect No. 2	Other Recorded Sites	Section 16.3
Sensitive Aspect No. 3	Previously Unrecorded Sites	Section 16.4
Sensitive Aspect No.4	Unrecorded Subsurface Sites	Section 16.5

Each of the above listed Sensitive Aspects are evaluated individually in Sections 16.2 to 16.5 of this Chapter.

To help readers navigate to individual sensitive aspect sections, the colour codes for each Sensitive Aspect used above are also used in the Sensitive Aspect sections Section 16.2 to 16.5. The colour-codes have been applied to section headings, tables and on side-tabs on the edge of the pages.

16.1.4 Sensitive Aspects excluded from further evaluation

No Sensitive Aspects are excluded from this topic chapter.

16.1.5 Overview of the Subject Development

The UWF Grid Connection is the subject development, being the subject of a current application to An Bord Pleanála. The main parts of the UWF Grid Connection are identified in Table 16-1 below.

Table 16-1: Subject Development – UWF Grid Connection

Project ID	The Subject Development	Composition of the Subject Development
Element 1	The Subject Development UWF Grid Connection (GC)	Mountphilips Substation Mountphilips – Upperchurch 110kV UGC Ancillary Works at Mountphilips Substation site

Note: The UWF Grid Connection is 'Element 1' of the Whole UWF Project.

A description of the location, size and design, life-cycle stages, use of natural resources, emissions and wastes, and the vulnerability to major accidents and natural disasters is provided in Chapter 5: Description of the Development – UWF Grid Connection (Volume C2 EIAR Main Report).

This EIA Report is also available on www.upperchurchwindfarmgridconnection.ie.

16.1.5.1 Changes to the development from the 2018 Application

This is the 2nd Application for UWF Grid Connection (2019 Application). The previous application (2018 Application) was refused by An Bord Pleanála in December 2018. There are changes in this 2019 UWF Grid Connection Application from the 2018 Application. These comprise;

- In this 2019 Application, the route of the 110kV UGC from Mountphilips Substation Site entrance to the Consented UWF Substation site is wholly under the public road (except for 700m under a private paved road at the Consented UWF Substation end) and is 30.5km in length. By comparison, the 2018 Application 110kV UGC route was through agricultural and forestry tracks and lands with some public road crossings and 27.5km in length.

- Mountphilips Substation is at the same location, but the footprint of the Substation Compound is increased by 15% (from 8930m^2 to 10290m^2) and the footprint of the control building is increased from 205m^2 to 375m^2. ***Note***: Details of the changes/no changes to the Mountphilips Substation Site as a result of the increased dimensions are listed in Chapter 5: Description of the Development: Section 5.1.1.1.

16.1.6 The Authors of the Cultural Heritage Chapter

This report was written by Barry Fitzgibbon (MA MIAI) and Cóilín O'Drisceoil (MA MIAI) of Kilkenny Archaeology. The report authors are members of the Irish Archaeological Institute, the professional body of archaeologists in Ireland and are also qualified as licence-eligible archaeologists under the criteria set out by the National Monuments Service and the National Museum of Ireland. Kilkenny Archaeology specializes in evaluating the impact of large-scale development on Cultural Heritage sites in the receiving environment.

A dedicated report on the conservation aspects of the Anglesey Bridge at Foildarragh, NIAH No. 22403905 was prepared by James Powell BSc MIEI CEng, built heritage consultant. James is a Chartered Engineer with a particular speciality in Applied Building Repair and Conservation.

16.1.7 Sources of Baseline Information

The information sources outlined in Table 16-2 were reviewed during desktop studies and confirmed during fieldwork in order to gather information on the baseline environment. The recommendations in the guidelines listed in the table, have been considered during the preparation of this chapter.

Table 16-2: Sources of Baseline Information for Cultural Heritage

Type	Source
Consultation	No feedback was received from consultees See Chapter 3: The Scoping Consultations, Chapter 3 Appendices for further details.

Policy & Regulations	• National Monuments Acts 1930-1994 (as amended)
	• Heritage Act 2000
	• Planning and Development Act 2000 (as amended)
	• The Architectural Heritage and Historic Properties Act, 1999.
	• European Convention on the Protection of the Archaeological Heritage (*Valetta Convention*, ratified by Ireland 1997)
	• The European Convention on the Protection of the Architectural Heritage (*Granada Convention*, ratified by Ireland in 1997).
	• ICOMOS Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005
	• Mid-West Regional Planning Guidelines 2010-2022
	• North Tipperary County Development Plan 2010-2016 (as varied),
	  ○ Policy LH16: Archaeology and Cultural Heritage
	  ○ Section 7.5.3 Architectural Heritage of Local Interest
	  ○ Policy LH15: Architectural Heritage of Local Interest

Guidelines	• 'Framework and Principles for the Protection of the Archaeological Heritage' *issued by the Dept. of Arts, Heritage, Gaeltacht and the Islands (1999)* • The National Roads Authority's (NRA) Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes (2005) • Architectural Heritage Protection Guidelines for Planning Authorities (DAHG 2011).
Desktop	Databases: • Record of Monuments and Places • Record of Protected Structures • National Inventory of Architectural Heritage • National Museum of Ireland Topographic Files All editions of the historic Ordnance Survey Maps: • First edition 1841 and the second edition 1898 1:10560 maps • Second edition 1900 Ordnance Survey map sheet • Other historic mapping, such as the Down Survey (1655) and the Griffith Valuation (1850). • Griffith's Valuation maps and valuation report • Records of Monuments and Places (RMP) constraints maps Review of Aerial Photography Mapping: • 2000 Ordnance Survey orthophotography • 2005 Ordnance Survey orthophotography • Google Earth • Bing maps aerial photos • Chapter 17: Landscape

Type	Source
	• Review of planning/ environmental information documents for the Other Elements of the Whole UWF Project as contained in Volume F of the planning application.
Fieldwork	• Field survey, walking of the works areas

16.1.8 Methodology used to Describe the Baseline Environment and to Evaluate Impacts

The methodology employed conforms to the recommendations in regard to archaeological assessments in the 'Framework and Principles for the Protection of the Archaeological Heritage' issued by the Dept. of Arts, Heritage, Gaeltacht and the Islands (1999), the *Architectural Heritage Protection Guidelines for Planning Authorities* (DAHG 2011), as well as the legislative frameworks of the *National Monuments Acts 1930-2012 (as amended)*, the *Heritage Act 2000*, The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 and the *European Convention on the Protection of the Archaeological Heritage (ratified by Ireland 1997)*.

This assessment comprised a site specific desk-based study and a field survey of the application area.

The criteria used to evaluate impacts for this cultural heritage appraisal has been derived from the National Roads Authority's (NRA) Guidelines for the Assessment of Archaeological Heritage Impacts of National Road Schemes (2005). These criteria are set out in the tables below.

Table 16-3: NRA Criteria for Determining the Quality of Cultural Heritage Impacts

Quality of Impacts	Description
Negative	A change that will detract from or permanently remove an archaeological monument from the landscape.
Neutral	A change that does not affect the archaeological heritage
Positive	A change that improves or enhances the setting of an archaeological monument

Table 16-4: NRA Criteria for Determining the Significance of Impacts on Cultural Heritage

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

16.1.9 Certainty and Sufficiency of Information Provided

The assessment of effects has a clear documentary trail of the analysis used to arrive at conclusions that demonstrably conform to peer-reviewed standards. The methodology complies with the recommendations in regard to archaeological assessments in the 'Framework and Principles for the Protection of the Archaeological Heritage' issued by the Dept. of Arts, Heritage, Gaeltacht and the Islands (1999), the *Architectural Heritage Protection Guidelines for Planning Authorities* (DAHG 2011), as well as the legislative frameworks of the *National Monuments Acts 1930-2012 (as amended)*, the *Heritage Act 2000*, The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, 1999 and the *European Convention on the Protection of the Archaeological Heritage (ratified by Ireland 1997)*.

The methods employed also complies with the requirement in section 7.5 – Built Heritage of the North Tipperary County Development Plan 2010 (as varied) to require archaeological assessment of developments in areas where previously recorded archaeological monuments are present.

In relation to this Cultural heritage evaluation, no limitations/difficulties were encountered.

16.2 Sensitive Aspect No.1: Recorded Legally Protected Sites

This Section provides a description and evaluation of Sensitive Aspect - Recorded Legally Protected Sites. Recorded Legally Protected Sites relates to sites listed on the Record of Monuments & Places (RMP) and on the Record of Protected Structures.

16.2.1 BASELINE CHARACTERISTICS of Recorded Legally Protected Sites

This Section 16.2.1 comprises the identification of the Study Area for direct or indirect effects, and a description of the context, character, importance and sensitivity of the Recorded Legally Protected Sites in the area. Trends or changes in the baseline environment are also identified.

16.2.1.1 STUDY AREA for Recorded Legally Protected Sites

The study area for Recorded Legally Protected Sites in relation to the UWF Grid Connection is described in Table 16-5 and illustrated on Figure GC 16.2: UWF Grid Connection Study Area for Recorded Legally Protected Sites (Volume C3 EIAR Figures).

Table 16-5: UWF Grid Connection Study Area for Recorded Legally Protected Sites

Study Area for Recorded Legally Protected Sites	Justification for the Study Area Extents
Construction Stage Effects; Within the footprint of the construction works area plus 500m radius surrounding the footprint of the construction works areas	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The wider study area was adopted in order to ensure that the full extent of each identified Recorded Legally Protected Site, as well as any associated, or ancillary, features or structures, could be fully appraised. It is extremely unlikely that Cultural Heritage Sites beyond this area could be impacted.
Operational Stage Visual Effects: 2km zone around the location of the Mountphilips Substation	Because of the relatively low heights of the Mountphilips Substation (including the End Masts), any visibility beyond 2km would be barely perceptible to none. The remainder of the UWF Grid Connection will either be placed below ground (110kV UGC) or will comprise the new stone road and widened entrance at Coole, which are a common occurrence in the area and will not cause any visual impacts, and for this reason these parts are not included in the operational stage study area.

16.2.1.2 Baseline Context and Character of Recorded Legally Protected Sites in the UWF Grid Connection Study Area

There are a total of 39 No. archaeological sites recorded on the Record of Monuments and Places (RMP) within 500m of construction works area for UWF Grid Connection.

There are a total of 14 No. Recorded Legally Protected sites which will be located within 2km of the operational Mountphilips Substation, 4 No. of these Sites will have theoretical visibility of the Mountphilips Substation; *GL6 - Ringfort, GL8 – Bawn and GL7 - Castle - Tower House,* and *GL13 - Bowl Barrow.*

The environment within which these monuments occur is largely rural in nature across a mix of open farmland and cultivated forestry.

The Recorded Legally Protected Sites within the UWF Grid Connection Study Area are identified in Table 16-6 below, and Figure GC 16.2: UWF Grid Connection Study Area for Recorded Legally Protected Sites.

Recorded Legally Protected Sites

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Table 16-6: Recorded Legally Protected Sites within the UWF Grid Connection Study Area

Site ID	Record of Monuments & Places Code	Classification/Type	Townland	Separation Distance
GL1	TN031-009----	Bullaun stone	Ballyard	1.6km
GL2	TN031-010001-	Church	Ballyard	1.5km
GL3	TN031-010002-	Ritual site - holy well	Ballyard	1.5km
GL4	TN031-010003-	Graveyard	Ballyard	1.5km
GL5	TN031-010004-	Font	Ballyard	1.5km
GL6	TN031-011----	Ringfort - rath	Ballyard	1.3km
GL7	TN031-048001-	Castle - tower house	Cragg	1.5km
GL8	TN031-048002-	Bawn	Cragg	1.5km
GL9	TN031-061----	Ringfort - rath	Oakhampton	1.3km
GL10	TN031-072----	Ritual site - holy well	Foildarrig	500m
GL11	TN031-070002-	Children's burial ground	Foildarrig	190m
GL12	TN031-070001-	Church	Foildarrig	180m
GL13	TN031-071----	Barrow - bowl-barrow	Foildarrig	125m
GL14	TN031-073----	Earthwork	Clonbealy	165m
GL15	TN031-079----	Souterrain	Castlewaller	520m
GL16	TN037-007----	Earthwork	Castlewaller	315m
GL17	TN037-006----	Ringfort - rath	Carrowkeale	315m
GL18	TN037-005----	Ringfort - rath	Derryleigh	8m
GL19	TN037-009----	Castle - unclassified	Derryleigh	82m
GL20	TN037-023----	House - indeterminate date	Derryleigh	405m
GL21	TN037-044----	Barrow - ring-barrow	Kilnacappagh	174m
GL22	TN037-037----	Redundant record	Kilnacappagh	154m
GL23	TN037-022----	Enclosure	Kilnacappagh	180m
GL24	TN037-018----	Ringfort - cashel	Kilnacappagh	360m
GL25	TN037-019----	Ringfort - cashel	Carrowkeale (kilvellane par.)	450m
GL26	TN037-024----	Ringfort - cashel	Derryleigh,scraggeen	160m
GL27	TN037-030----	Ringfort - cashel	Kilnacappagh	125m
GL28	TN037-031----	Enclosure	Scraggeen	40m
GL29	TN037-039001-	Redundant record	Derrygareen	150m
GL30	TN037-039002-	Redundant record	Derrygareen	180m
GL31	TN037-032001-	Ringfort - rath	Derrygareen	250m

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Site ID	Record of Monuments & Places Code	Classification/Type	Townland	Separation Distance
GL32	TN037-032002-	Bullaun stone	Derrygareen	260m
GL33	TN037-033----	Fulacht fia	Knockancullenagh	130m
GL34	TN038-020----	Mine - copper	Lackamore (kilvellane par.)	40m
GL35	TN038-006----	Megalithic tomb - wedge tomb	Reardnogy more	300m
GL36	TN038-012----	Pit-burial	Reardnogy more	80m
GL37	TN039-013----	Redundant record	Coonmore	55m
GL38	TN039-012----	Children's burial ground	Coonmore	50m
GL39	TN039-012001-	Mound	Coonmore	55m
GL40	TN039-024----	Redundant record	Foildarragh	230m
GL41	TN039-030----	Ringfort - rath	Foildarragh	165m
GL42	TN039-025001-	Enclosure	Kilcommon (templebeg par.)	220m
GL43	TN039-025002-	Enclosure	Kilcommon (templebeg par.)	270m
GL44	TN039-026----	Redundant record	Kilcommon (templebeg par.)	140m
GL45	TN039-008----	Megalithic tomb - wedge tomb	Knockmaroe	145m
GL46	TN039-050----	Megalithic tomb - unclassified	Knockcurraghbola commons	400m
GL47	TN039-009----	Megalithic tomb - wedge tomb	Knockcurraghbola commons	320m
GL48	TN039-052----	Stone row	Knockcurraghbola commons	310m
GL49	TN039-051----	Fulacht fia	Knockcurraghbola commons	200m

The variety of site types, and periods from which they originate, are indicative of the rich history of human activity, both religious and secular, in the Study Area. The 49 sites can be broken down as follows; 6 Redundant record, 4 Enclosure, 4 Ringfort - cashel, 3 Megalithic tomb - wedge tomb, 2 bullaun stones, 2 Fulachta fia, 2 Ritual site – holy wells, 2 Children's burial ground, 2 Church, 2 Earthwork, 1 Bawn, 1 Castle – tower house, 1 Graveyard, 1 Barrow - bowl-barrow, 1 Font, 1 Souterrain, 6 Ringfort - rath, 1 Castle - unclassified, 1 House - indeterminate date, 1 Barrow - ring-barrow, 1 Mine - copper, 1 Pit-burial, 1 Mound, 1 Megalithic tomb - unclassified and 1 Stone row.

Further details on the above listed Recorded Legally Protected Sites within the study area are included in Appendix 16.1: Detailed Description of Cultural Heritage Sites **(Volume C4: EIAR Appendices).**

16.2.1.3 Importance of Recorded Legally Protected Sites

Sites listed on the Record of Monuments and Places are protected under the National Monuments Acts (1934-2014). None of the sites identified are classed as National Monuments.

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16.2.1.4 Sensitivity of Recorded Legally Protected Sites

Archaeological sites can be affected by any groundworks which would partially or wholly damage the site itself or features/objects associated with the site or which may damage any associated subsurface features or structures which are no longer visible.

Some archaeological sites or monuments were most likely purposefully constructed in specific locations, on specific alignments, to take advantage of views of the surrounding landscape, celestial events and other monuments. As such the views of and from these sites are an integral part of the monuments character and could be affected by the presence of new structures in the local area.

16.2.1.5 Trends in the Baseline Environment (the 'Do-Nothing' scenario)

Increased legal protections offered to Recorded Protected Sites under the National Monuments Acts 1930-2014 has resulted in a reduction of potential damage to said sites through typical human activity in the region (e.g. forestry and farming). The sites which survive in the study area tend to be earthworks or stone structures and barring any unforeseen catastrophic natural processes, it might take thousands of years before any significant damage occurs through processes such as weathering or erosion.

16.2.1.6 Receiving Environment (the Baseline + Trends)

No trends have been identified over the course of this report which would lead to changes to the Recorded Legally Protected Sites and it is therefore assumed in this report that the baseline environment identified above will be the receiving environment.

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16.2.2 CUMULATIVE INFORMATION - Cumulative Projects & Baseline Characteristics

16.2.2.1 Cumulative Evaluation Study Areas

16.2.2.1.1 UWF Grid Connection Cumulative Evaluation Study Area

The UWF Grid Connection was evaluated for cumulative effects with other projects and the study area is set out in the table below.

UWF Grid Connection Cumulative Evaluation Study Area for Recorded Legally Protected Sites	Justification for the Study Area Extents
Cumulative Construction Stage Impacts; footprint of the UWF Grid Connection construction works area plus 1000m radius surrounding the footprint of the construction works areas	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The wider (doubled) study area was adopted in order to ensure that the full extent of each identified Recorded Legally Protected Site, as well as any associated, or ancillary, features or structures, could be fully evaluated for potential damage by UWF Grid Connection construction works within 500m and by works associated with either Other Elements or Other Projects or Activities which occur within the 1000m area.
Cumulative Operational Stage Visual Impacts: 2km zone around the location of the Mountphilips Substation, 4km to identify any Other Projects or Activities	Because of the relatively low heights of Mountphilips Substation, any visibility of the substation beyond 2km would be barely perceptible to none. The study area is doubled to 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.

The study is illustrated on Figure CE 16.2: UWF Grid Connection Cumulative Evaluation Study Area for Recorded Legally Protected Sites.

16.2.2.1.2 Whole Project Cumulative Evaluation Study Area

UWF Grid Connection is part of a whole project which comprises the following Other Elements; Element 2: UWF Related Works, Element 3: UWF Replacement Forestry, Element 4: Upperchurch Windfarm (UWF), and Element 5: UWF Other Activities. The Subject Development, UWF Grid Connection is Element 1. All five elements are collectively referred to as the Whole UWF Project in this EIA Report.

The Other Elements must be considered because UWF Grid Connection is part of a whole project. Therefore, the cumulative information and evaluations for the Other Elements of the Whole UWF Project are included in order to present the totality of the project.

A description of these Other Elements is included in this EIA Report at Appendices 5.3, 5.4, 5.5 and 5.6**,** in Volume C4 EIAR Appendices**.** Scoping of these Other Elements is presented in Section 16.2.2.2.1 below.

The Whole Project Cumulative Evaluation Study Area comprises of the UWF Grid Connection Study Area along with the study areas for Other Elements and Other Projects or Activities which are described in Table 16-7 and illustrated on Figure WP 16.2: Whole Project Study Area for Recorded Legally Protected Sites (Volume C3 EIAR Figures).

Table 16-7: Whole Project Cumulative Evaluation Study Area for Recorded Legally Protected Sites

Cumulative Project	Whole Project Cumulative Study Area Boundary	Justification for Study Area Extent
Element 2: UWF Related Works		Cumulative impacts to Cultural Heritage Sites is limited to those sites which could potentially be

Cumulative Project	Whole Project Cumulative Study Area Boundary	Justification for Study Area Extent
Element 3: UWF Replacement Forestry	500m corridor from works areas and activity locations for each Element 2km radius from above ground level structures, 4km to identify any Other Projects or Activities	affected by more than one Element of the Whole UWF Project. Because of the relatively low heights of the Telecoms Relay Pole and the Mountphilips Substation, any visibility of these structures beyond 2km would be barely perceptible to none. Any cumulative landscape character and visual amenity impacts beyond 2km will only relate to the presence of cumulative turbines in views containing the Consented UWF Turbines, the cumulative impacts of which have previously been assessed as acceptable by An Bord Pleanala. The study area is doubled to 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.
Element 4: Upperchurch Windfarm (UWF)		
Element 5: UWF Other Activities		

16.2.2.2 Scoping for Other Projects or Activities & Potential for Impacts

The evaluation of cumulative impacts to Recorded Legally Protected Sites also considered Other Projects or Activities. A scoping exercise was carried out to determine which projects or activities, if any, have potential to cause cumulative effects to Recorded Legally Protected Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project and therefore should be brought forward for evaluation in this topic chapter. A brief overview of the Other Projects or Activities and the scoping exercise by the topic authors is included in Appendix 2.1: Scoping of Other Projects or Activities for the Cumulative Evaluations (Section A2.1.4.31).

The results of this scoping exercise are that: no other projects or activities will cause cumulative effects to Recorded Legally Protected Sites with UWF Grid Connection however in order to present the totality of the project – Milestone Windfarm, Foilnaman Mast, Cummermore Communications Pole have been scoped in for evaluation of cumulative effects relating to the Other Elements.

16.2.2.2.1 Potential for Other Elements or Other Projects to cause Impacts to Recorded Legally Protected Sites

An evaluation was carried out by the topic authors of the likelihood for the Other Elements of the Whole UWF Project and for the Other Projects or Activities to cause cumulative effects to the Sensitive Aspect Recorded Legally Protected Sites. The results of this evaluation are included in Table 16-8.

The location of the Other Elements and Other Projects or Activities which are included for cumulative evaluation is illustrated on Figure WP 16.2.

Table 16-8: Results of the Evaluation of the Other Elements and Other Projects or Activities

Other Elements of the Whole UWF Project	
Element 2: UWF Related Works	Included for the evaluation of cumulative effects
Element 3: UWF Replacement Forestry	Evaluated as excluded: No likely effect/Neutral effect due to: • There are no Recorded Legally Protected Sites on the UWF Replacement Forestry lands, or within 500m of the lands,

	• The planting works will involve the manual turning of sod, and due to the absence of Sites on the lands or within 500m of the lands, damage to Recorded Legally Protected Sites is not likely to occur, • As there are no Recorded Legally Protected Sites within 500m of the lands and due to the location of the UWF Replacement Forestry in a valley rather than the top of a hill, it is considered that the visual effect of the maturing wood will be Neutral.
Element 4: Upperchurch Windfarm (UWF)	Included for the evaluation of cumulative effects
Element 5: UWF Other Activities	• Evaluated as excluded: Neutral effect/No potential for effects due to: No mechanical excavation of soils nor the erection of new structures is associated with the UWF Other Activities, therefore there is no potential for either physical or visual impacts on Recorded Legally Protected Sites.
Other Projects or Activities	
Milestone Windfarm Foilnaman Mast Cummermore Communications Pole	Yes, included for the evaluation of cumulative effects **Please Note:** Other Projects or Activities only relate to the cumulative evaluation of Other Elements of the Whole UWF Project. There is no potential for cumulative effects with the UWF Grid Connection.

16.2.2.3 Cumulative Information: Baseline Characteristics – Context & Character

16.2.2.3.1 Element 2: UWF Related Works

Within the 500m study area from UWF Related Works construction works areas, there are a total of 14 No. archaeological sites recorded on the Record of Monuments and Places (RMP). The 14 sites are identified on Figure WP 16.2, and can be broken down as follows: 4 Barrows, 1 Cist, 2 Enclosures, 1 Fulacht Fiadh, 1 Possible Field System, 4 Megalithic Tombs, and 1 Stone Row A description of, and further details for, these Recorded Legally Protected Sites can be found in the Cultural Heritage chapter of the Revised EIAR for UWF Related Works, which is included in V olume F: Reference Documents (see – Volume F2 Part 2 and F3 Part 3).

The UWF Related Works construction works area occurs within the zone of notification of one of these sites; *Site RL6*[1] *- Stone Row* (30m from a section of Internal Windfarm Cabling). Archaeological testing was carried out at this site; the test report is included as an appendix in the Revised EIAR for UWF Related Works (see – Volume F3 Part 3).

In relation to the Operational Stage, a further 10 No. of Recorded Legally Protected Sites occur between 500m and 2km, giving a total of 24 No. of Sites within the 2km study area. Of these 10 No. sites, there are 7 No. sites which will have theoretical visibility of the Telecoms Relay Pole - RL5 - Wedge Tomb, RL6 - Stone Row, RL7 - Fulacht Fiadh, RL8 - Megalithic Tomb, RL20 - Ring Barrow, RL21 - Ring Barrow and RL22 - Cist. See Figure WP 16.2.

16.2.2.3.2 Element 3: UWF Replacement Forestry

Not applicable – Element evaluated as excluded. See Section 16.2.2.2.1

16.2.2.3.3 Element 4: Already Consented Upperchurch Windfarm

The sites within 500m of the UWF are included in the description for the UWF Related Works above.

[1] RL6 is the same cultural heritage site as GL48

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In relation to visual effects, it is assumed that all 24 No. sites within the 2km study area will have theoretical visibility of the Consented UWF Turbines.

Consideration of the Passage of Time: There has been no changes to Recorded Legally Protected Sites in the Upperchurch Windfarm area, and the descriptions in the 2013 and 2014 documents remain relevant to the cumulative evaluations in this EIAR. Therefore it is considered that there has been no material changes in the baseline environment.

16.2.2.3.4 Other Projects or Activities

The existing Milestone Windfarm is located in Knockcurraghbola Crownlands, Knockcurraghbola Commons, Shevry, Graniera, Knockduff and Inchivara, and comprises of 4 no. wind turbines. The Milestone turbines will be viewed alongside the Consented UWF Turbines and across the valley from the Telecom Relay Pole.

The existing Foilnaman Mast is located on the Knockmaroe hill, c.200m from where the Telecoms Relay Pole (UWF Related Works) will be located. The existing Cummermore Communications Pole is located nearly 4km to the southwest of the Telecom Relay Pole location.

Please Note: Other Projects or Activities only relate to the cumulative evaluation of Other Elements of the Whole UWF Project. There is no potential for cumulative effects with the UWF Grid Connection.

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16.2.3 PROJECT DESIGN MEASURES for Recorded Legally Protected Sites

At the conception of the UWF Grid Connection, the design team evaluated the potential for significant impacts to the environment. Impacts will only take place where three components exist together; (1) the source of the impact (project), (2) the receptor of the impact (sensitive aspect) and (3) a pathway between the source and the sensitive aspect. The objective of mitigation measures is to avoid, prevent or reduce, one of the three components of an impact by choosing an alternative location, alternative design or an alternative process.

Potential or likely significant impacts were avoided, prevented or reduced by integrating mitigation measures into the fundamental design of the development – these are the Project Design Environmental Protection Measures, which are shortened to 'Project Design Measures' in this EIA Report.

The development as evaluated in the EIA Report incorporates the Project Design Measures.

The Project Design Measure outlined in Table 16-9 are relevant to the Environmental Factor, Cultural Heritage, and in particular to the sensitive aspect **Recorded Legally Protected Sites**.

Table 16-9: UWF Grid Connection Project Design Measures relevant to Recorded Legally Protected Sites

PD ID	Project Design Environmental Protection Measure (PD)
PD05	At the Mountphilips Substation site, construction traffic will be restricted to the construction works area and tracking across adjacent ground will not be permitted. A speed limit of 25km/hr for all traffic/machinery will be implemented at the Mountphilips Substation site. Outside of Mountphilips Substation site, all construction will be restricted to the paved road surfaces or built surfaces along the 110kV UGC. A speed limit of 50km/hr for all delivery and construction traffic will be implemented on Local Roads ('L' roads).
PD14	All initial groundworks within 500m of an RMP or NIAH site, will be monitored by an archaeologist under license from the National Monuments Service, to archaeologically record and preserve, either in situ or by record, any structures, features or objects of archaeological significance which may be encountered during the works.
PD15	Where excavations occur at culvert replacement locations along the 110kV UGC, and at the 3 No. new watercourse crossing at the Mountphilips Substation site, excavations will be monitored by an appropriately qualified archaeologist under license from the National Monuments Service, the excavated material will be examined for any evidence of archaeological material and metal detected as part of a finds retrieval strategy.

Cumulative Information: Potential or likely significant impacts caused by the Other Elements of the Whole UWF Project were avoided, prevented or reduced by incorporating Project Design Measures into the design of the UWF Related Works and into the consented design of the Upperchurch Windfarm. These Project Design Measures are included in the description of these Elements, and can be found in this EIA Report in Appendices 5.3 and 5.5, in Volume C4: EIAR Appendices.

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16.2.4 EVALUATION OF IMPACTS to Recorded Legally Protected Sites

In this Section, the likely direct and indirect effects of the UWF Grid Connection are identified and evaluated. Then the likely cumulative effects of the UWF Grid Connection together with the Other Elements of the Whole UWF Project and Other Projects or Activities are identified and evaluated.

A conceptual site model exercise was carried out to facilitate the identification of source-pathway-receptor links between the project (source) and the sensitive aspect (receptor) - Recorded Legally Protected Sites.

As a result of the exercise, some impacts were included and some were excluded.

Table 16-10: List of all Impacts included and excluded from the Impact Evaluation Table sections

Impacts Included (Evaluated in the Impact Evaluation Table sections)	***Impacts Excluded (Justification at the end of the Impact Evaluation Table sections)***
Visual Impact (operational stage)	*Complete or partial destruction (construction stage)*
	Decommissioning Effects

The source-pathway-receptor links for the included impact are described in the Impact Evaluation Table in the following section 16.2.4.1.

The source-pathway-receptor links and the rationale for excluded impacts are described in the section directly after the Impact Evaluation Table, in Section 16.2.4.2.

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16.2.4.1 Impact Evaluation Table: Visual Impact

Impact Description	
Project Life Cycle Stage:	Operational Stage
Impact Source: Above ground structures, features and works Cumulative Impact Source: Above ground structures, features and works Impact Pathway: Visibility Impact Description: The close proximity of new above-ground structures to Recorded Legally Protected Sites, may cause visual impacts to these sites, reducing the quality of the visual amenity or character or setting of a monument or site. Impact Quality: Negative	
Evaluation of the Subject Development Impact – Visual Impact	
Element 1: UWF Grid Connection – direct/indirect impact	
Impact Magnitude: Although 4 No. Recorded Legally Protected Sites are theoretically visible from the Mountphilips Substation, (*GL6 - Ringfort, GL8 – Bawn and GL7 - Castle - Tower House,* and *GL13 - Bowl Barrow)* the results of drone surveys, carried out by the authors of Chapter 17: Landscape, demonstrates that the surrounding vegetation combined with the low lying location of the substation will completely screen the new substation completely from view from all of these 4 No. sites. See Landscape Figure 17.4 (Volume C3 EIAR Figures) for photomontages of the view of Mountphilips from the L2166-10 in Coole townland	
Significance of the Impact: No Impact	
Rationale for Impact Evaluation: • There will be no inter-visibility of Mountphilips Substation with these 4 No. sites	
Element 1: UWF Grid Connection – cumulative impact	
Cumulative Impact Magnitude: Due to the separation distance (c.20km) between Mountphilips Substation and the Other Elements of the Whole UWF Project, and the Other Projects, there will be no intervisibility of Mountphilips Substation with either Other Elements or Other Projects, therefore there is no potential for cumulative impacts.	
Significance of the Impact: No Cumulative Impact	
Rationale for Impact Evaluation: • absence of intervisibility due to separation distance and topography	
Cumulative Information: Individual Evaluations of Other Elements of the Whole UWF Project	
Element 2: UWF Related Works	
Impact Magnitude: There are 7 No. sites which will have theoretical visibility of the Telecoms Relay Pole; *RL5(GL47) - Wedge Tomb, RL6(GL48) - Stone Row, RL7(GL49) - Fulacht Fiadh, RL8(GL46) - Megalithic Tomb, RL20- Ring Barrow, RL21 - Ring Barrow and RL22 - Cist.* While there is theoretical intervisibility between the Telecoms Relay Pole and the sites listed above, the character of the relay pole – being an up to 18m high wooden pole with communication equipment in the form of 2 pairs of small dishes - will mean any visual impact is negligible to non-existent, and the Pole will be similar in appearance to wooden telephone and wooden electricity poles which are common in the area.	

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Significance of the Impact: Imperceptible
Rationale for Impact Evaluation: • the small scale of the Telecoms Relay Pole • The distance to the sites, with the nearest being 1.53km • In the context of other, more noticeable, structures in the vicinity which include telecommunication masts and wind turbines.
Element 3: UWF Replacement Forestry – *N/A, evaluated as excluded, see Section 16.2.2.2.1*
Element 4: Consented Upperchurch Windfarm
Impact Magnitude: As per the EIS 2013, it was evaluated that 8 No. out of a total 101 No. Recorded Protected Sites within a 4km study area of the turbines, will have intervisibility with all 22 wind turbines
Significance of the Impact: Not Significant
Rationale for Impact Evaluation: • The Board considered that, subject to compliance with the mitigation measures set out in the 2013 EIS, the development would not have a significant effect on the environment. • The application of Condition No. 7 and Condition No.8 which protect visual amenity.
Element 5: UWF Other Activities – *N/A, evaluated as excluded, see Section 16.2.2.2.1*
Cumulative Information: Individual Evaluations of Other Projects or Activities (Note: Other Projects or Activities only relate to the cumulative evaluation of Other Elements of the Whole UWF Project. There is no potential for cumulative effects with the UWF Grid Connection.)
Other Project: Milestone Windfarm
Impact Magnitude: As per Grant of Permission for the Milestone Windfarm, the planning authorised deemed that the windfarm would not adversely impact on the visual amenities or the landscape character of the area.
Significance of the Impact: Not significant
Rationale for Impact Evaluation: • The Board considered that, subject to compliance with the mitigation measures set out in the Environmental Impact Statement, the development would not have a significant effect on the environment. • The application of Conditions which protect visual amenity.
Other Project: Foilnaman Mast
Impact Magnitude: Based on the character of the existing mast and communication pole being c.20m in height and being viewed as part of the baseline environment, it is considered that the magnitude of any visual impact is negligible.
Significance of the Impact: Imperceptible
Rationale for Impact Evaluation: • the small scale of the communication structures • in the context of other, more noticeable, structures in the vicinity which include telecommunication masts and wind turbines.
Other Project: Cummermore Communication Pole
Impact Magnitude: Based on the character of the existing mast and communication pole being c.20m in height and being viewed as part of the baseline environment, it is considered that the magnitude of any visual impact is negligible.

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Significance of the Impact: Imperceptible

Rationale for Impact Evaluation:

- the small scale of the communication structures
- in the context of other, more noticeable, structures in the vicinity which include telecommunication masts and wind turbines.

Evaluation of Other Cumulative Impacts – Visual Impact

All Elements of the Whole UWF Project

Cumulative Impact Magnitude:

Although 4 No. Recorded Legally Protected Sites are theoretically visible from the Mountphilips Substation, due to the low lying location, the substation will be completely screened from view from all of these 4 No. sites. There is no potential for cumulative visual impacts between the UWF Grid Connection and either the UWF Related Works or the Upperchurch Windfarm, given the separation distance and absence of intervisibility between the Mountphilips Substation and the Telecoms Relay Pole and the Upperchurch Windfarm.

In relation to the UWF Related Works, of the 7 No. Recorded Legally Protected Sites which will have a theoretical visibility of the Telecoms Relay Pole, all of these sites will also have theoretical visibility of the above ground structures associated with the Upperchurch Windfarm. It is considered that together the Telecoms Relay Pole and the Upperchurch Windfarm will not have a greater magnitude of impact than the Upperchurch Windfarm on its own, as the Telecoms Relay Pole will be barely noticeable in the context of the larger turbines in the area, and will be similar in appearance to wooden telephone and electricity poles which are common in the area.

Significance of the Cumulative Impact: Imperceptible

Rationale for Cumulative Impact Evaluation:

- The screening of Mountphilips Substation and absence of intervisibility with other elements of the whole project.
- The barely noticeable character of the Telecoms Relay Pole
- The barely noticeable character of the Telecoms Relay Pole and the absence of inter-visibility with the Mountphilips Substation

All Elements of the Whole UWF Project with Other Projects or Activities

Cumulative Impact Magnitude:

There is no potential for cumulative visual effects of the UWF Grid Connection with Other Projects, as the Mountphilips Substation will not be inter-visible with the Milestone Windfarm or with Foilnaman Mast or Cummermore Communications Pole.

Cumulative visual effects in relation to the UWF Related Works are limited the Telecom Relay Pole and the Upperchurch Windfarm with the Milestone Windfarm. It is considered that due to its small scale, that the addition of the Telecoms Relay Pole to the viewsheds from cultural heritage sites will not cause any additional visual effect to that already evaluated (and considered acceptable) for the Upperchurch Windfarm - which included a cumulative evaluation of the visual impact of the Upperchurch Windfarm together with the Milestone Windfarm. It is also considered that due to their small scale, any views of the Telecoms Relay Pole together with the other existing communication structures will be cumulatively neutral.

Significance of the Cumulative Impact: Imperceptible

Rationale for Cumulative Impact Evaluation:

- No inter-visibility between Mountphilips Substation and any Other Project or Activity.
- Small scale of the Telecom Relay Pole and of the existing communication structures at Foilnaman and Cummermore.

Recorded Legally Protected Sites

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- The Board considered that, subject to compliance with the mitigation measures set out in the Environmental Impact Statement, the consented Upperchurch Windfarm would not have a significant effect on the environment, either on its own or cumulatively with other windfarms in the area (which included Milestone Windfarm).

Topic: **Cultural Heritage**

16.2.4.2 Description and Rationale for Excluded (scoped out) Impacts

The source-pathway-receptor links and the rationale for impacts excluded from the Impact Evaluation Table sections are described in Table 16-11 below.

Table 16-11: Description and Rationale for Excluded Impacts to Recorded Legally Protected Sites

Key: 1: UWF Grid Connection; 2: UWF Related Works; 3: UWF Replacement Forestry; 4: Upperchurch Windfarm; 5: UWF Other Activities

Source(s) of Impacts	Project Element	Pathway(s)	Impacts (Consequence)	Rationale for Excluding (Scoping Out)
Construction Stage				
Ground-works	1, 2, 4	Mechanical or manual excavation of soil.	Complete or partial de-struction	Rationale for Excluding**: no likely impact/Neutral impact** In relation to the UWF Grid Connection: No Recorded Legally Protected Sites are likely to be affected by construction works due to the distance of these sites from the construction works areas, which are located outside the Zone of Notification for all but 3 sites - GL8 – *Ringfort (rath) in Derryleigh,* GL18 – *Enclosure in Scraggeen,* GL24 – *Mine (copper) in Lackamore.* However, the location of the UWF Grid Connection in close proximity to these sites relates to the construction of the 110kV UGC in the regional public road pavement which will avoid impacts to GL8 – *Ringfort (rath) in Derryleigh,* GL18 – *Enclosure in Scraggeen,* GL24 – *Mine (copper) in Lackamore.* In relation to UWF Related Works: No Recorded Legally Protected Sites are likely to be affected by construction works due to the distance of these sites from the construction works areas, which are located outside the Zone of Notification for all sites, with the exception of and 1 No. site near the UWF Related Works - *RL6 – Stone Row* in Knockcurraghbola Commons. Test excavations at this site encountered no features or objects of archaeological significance. In relation to the Upperchurch Windfarm, as per the EIS 2013 (See Reference Documents Volume F8 UWF 2013 EIS Section 12.3.1), all Recorded Legally Protected Sites, are located away from works areas and will not be directly or indirectly impacted by the permitted development. Furthermore, damage to currently unknown subsurface archaeology associated with these sites is not likely to occur due to both the separation distance between known sites and works areas and as the design of the subject development (see Project Design Measures Section 16.2.3) and Condition No. 20 of the Grant of Planning 2014 in relation to the Upperchurch Windfarm (See Reference Documents Volume F10), includes for the archaeological monitoring of all ground works during the construction stage. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to monitor groundworks and stop works in the affected area in the event of any archaeological features or objects being uncovered during excavation works, and will ensure that any features or objects uncovered will be preserved by record and/or preserved in situ, in consultation and under licence to the

Recorded Legally Protected Sites

Sensitive Aspect

Source(s) of Impacts	Project Element	Pathway(s)	Impacts (Consequence)	Rationale for Excluding (Scoping Out)
				National Monuments Service and the National Museum of Ireland. It should be noted that 5 No. archaeological sites recorded on the Record of Monuments and Places (RMP) are located within 500m of construction works area associated with the UWF Grid Connection and the UWF Related Works and the Upperchurch Windfarm; RL9 - Wedge Tomb, RL8 - Megalithic Tomb, RL5 - Wedge Tomb, RL6- Stone Row and RL7 - Fulacht Fia, with the exception of RL6 – evaluated for UWF Related Works above, none of these sites are in close proximity to works areas, and the monitoring of all groundworks within 500m of an RMP or NIAH site, will ensure that any features or objects being uncovered during excavation works, and will ensure that any features or objects uncovered will be preserved by record and/or preserved in situ, in consultation with the National Monuments Service and the National Museum of Ireland.
Decommissioning Stage				
Rationale for Excluding: UWF Grid Connection will not be decommissioned. In relation to Upperchurch Windfarm/UWR Related Works, no new groundworks will be required for decommissioning, with any groundworks will be limited to those areas of ground which were previously excavated during the construction stage, therefore there is no potential for direct/indirect effects on Recorded Legally Protected Sites.				

Topic: **Cultural Heritage**

16.2.5 Mitigation Measures for Impacts to Recorded Legally Protected Sites

Mitigation measures were incorporated into the UWF Grid Connection project design including the Project Design Measures. No additional mitigation measures are required as the topic authors conclude that **significant impacts are not likely to occur to Recorded Legally Protected Sites**.

16.2.6 Evaluation of Residual Impacts to Recorded Legally Protected Sites

Residual Impacts are the final or intended effects that will occur after mitigation measures have been put into place. No additional mitigation measures are required and thus the Residual Impact is the same as the Impact set out in Impact Evaluation Table sections for Recorded Legally Protected Sites above (Section 16.2.4) – i.e. **no significant adverse impacts**.

16.2.7 UWF Grid Connection Environmental Management Plan

The Project Design measures will be implemented by the Project Manager and the main Contractor during the construction stage, under the Environmental Management Plan for the UWF Grid Connection (EMP). The EMP is appended to this EIA Report as Volume D.

The EMP will be an important contract document for the main construction contractor (Contractor) who will be contractually obliged to comply with the EMP. An Environmental Clerk of Works will be appointed, who will be independent of the construction Contractor, and it will be the responsibility of the Environmental Clerk of Works to monitor the compliance of the Contractor with the EMP through liaising with the Construction Site Manager and the Project Manager, monitoring construction works on a daily basis and by carrying out regular audits on EMP compliance. The Environmental Clerk of Works will be resourced to employ a team of environmental specialists including a Site Ecologist, Site Hydrologist and an Invasive Species Specialist.

16.2.8 Summary of Impacts to Recorded Legally Protected Sites

A summary of the Impact to Recorded Legally Protected Sites is presented in Table 16-12.

Table 16-12: Summary of the impacts to Recorded Legally Protected Sites

Impact to Recorded Legally Protected Sites:	**Visual Impact**
Evaluation Impact Table	*Section 16.2.4.1*
Project Life-Cycle Stage	*Operational Stage*
UWF Grid Connection *Direct/indirect impact*	**No Impact**
UWF Grid Connection *Cumulative impact*	**No Cumulative Impact**
Element 2: UWF Related Works	Imperceptible
Element 3: UWF Replacement Forestry	No Potential for Impact - Evaluated as Excluded, see Section 16.2.2.2.1
Element 4: Upperchurch Windfarm	Not Significant
Element 5: UWF Other Activities	No Potential for Impact - Evaluated as Excluded, see Section 16.2.2.2.1
Cumulative Impact:	
All Elements of the Whole UWF Project	**Imperceptible**
All Elements of the Whole UWF Project *cumulatively with* Other Projects or Activities Milestone Windfarm Foilnaman Mast Cummermore Communications Pole	**Imperceptible**

The greyed out boxes in the above summary table relate to the cumulative information for the Other Elements of the Whole UWF Project, which are included to show the totality of the project.

Note: No cumulative information for Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Other Recorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.2.2.2).

16.3 Sensitive Aspect No.2: Other Recorded Sites

This Section provides a description and evaluation of the Sensitive Aspect - Other Recorded Sites. Other Recorded Sites relates to sites identified on the National Inventory of Architectural Heritage (NIAH) or on the NIAH Garden Survey

16.3.1 BASELINE CHARACTERISTICS of Other Recorded Sites

This Section 16.3.1 comprises the identification of the Study Area for direct or indirect effects, and a description of the context, character, importance and sensitivity of the Other Recorded Sites in the area. Trends or changes in the baseline environment are also identified.

16.3.1.1 STUDY AREA for Other Recorded Sites

The study area for Other Recorded Sites in relation to the UWF Grid Connection is described in Table 16-13 and illustrated on Figure GC 16.3: UWF Grid Connection Study Area for Other Recorded Sites (Volume C3 EIAR Figures).

Table 16-13: UWF Grid Connection Study Area for Other Recorded Sites

Study Area for Other Recorded Sites	Justification for the Study Area Extents
Construction Stage Effects; Within the footprint of the construction works area plus 500m radius surrounding the footprint of the construction works areas	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The wider study area was adopted in order to assure that the full extent of each identified Other Recorded Site, as well as any associated, or ancillary, features or structures, could be fully appraised. It is extremely unlikely that Cultural Heritage Sites beyond this area could be impacted.
Operational Stage Visual Effects: 2km zone around the location of the Mountphilips Substation	Because of the relatively low heights of the Mountphilips Substation, any visibility beyond 2km would be barely perceptible to none. The remainder of the UWF Grid Connection will either be placed below ground or will comprise stone roads which are a common occurrence in the area and will not cause any visual impacts, and for this reason these parts are not included in the operational stage study area.

16.3.1.2 Baseline Context and Character of Other Recorded Sites in the UWF Grid Connection Study Area

The majority of sites on the NIAH date from the 18th and 19th century and form part an important part of the region's built heritage. In total there are 12 No. Other Recorded Sites within the study area.

7 of the 12 No. Other Recorded Stes are identified on the National Inventory of Architectural Heritage, the remaining five are demesnes listed on the NIAH Garden Survey.

As illustrated on Figure GC 16.3, 8 No. Other Recorded Sites occur within 500m of construction works areas for UWF Grid Connection, and 8 No. Other Recorded sites occur within 2km of the proposed Mountphilips Substation. Drone surveys by the authors of Ch.17 Landscape demonstrate that there will be no visibility of the Mountphilips Substation from 7 No. of these sites, with the potential for visual impacts only occurring at *GR3 – Mount Philips Demesne*.

An overview of the Other Recorded Sites within the study area is provided in Table 16-14 below, and identified on Figure GC 16.3. Further details on the Other Recorded Sites within the study area are included in Appendix 16.1: Detailed Description of Cultural Heritage Sites (Section A16.1.2) **(Volume C4: EIAR Appendices).**

Table 16-14: Other Recorded Sites within the UWF Grid Connection Study Area

Site ID	Source	NIAH Code	Classification/Type	Townland	Separation Distance from Project
GR1	First Edition Ordnance Survey		Demesne	Cragg	1.6km
GR2	NIAH	22403113	Cragg House	Cragg	1.2
GR3	First Edition Ordnance Survey		Demesne	Mountphilips	0 within Demense
GR4	First Edition Ordnance Survey		Demesne	Barna	380m
GR5	NIAH	22403114	Oakhampton House	Oakhampton	1.1km
GR6	First Edition Ordnance Survey		Demesne	Oakhampton	850m
GR7	First Edition Ordnance Survey		Demesne	Rockvale	360m
GR8	NIAH	22311001	Charter School	Clonbealy	470m
GR9	NIAH	TN-59-R-736614	Derryleigh House	Derryleigh	100m
GR10	NIAH	22403801	Church of the Visitation	Reardnogy more	13m
GR11	NIAH	22403802	Rear Cross National School	Reardnogy more	18m
GR12	NIAH	22403905	Anglesey Bridge	Foildarragh	0m Crosses over Bridge

The five demesnes listed on the NIAH Garden Survey are likely to have their origins in the "Age of Improvement" in the 17th and 18th century. Large portions of these demesnes have been subsumed into the modern agricultural landscape and many of their characteristic features are unrecognisable.

Specifically in relation to the Mount Philips Demesne, in whose area the construction works will take place, *GR3 - Mount Philips Demesne* is described on the survey as having virtually no recognisable features visible. During field walking it was noted that this site has been subsumed into the modern agricultural landscape common to western extent of the UWF Grid Connection study area.

GR6 - House forms part of Oakhampton Demesne. *GR2 – Cragg House* and *GR8 – Charter School* are isolated in rural settings.

GR 12 – Anglesey Bridge: Built c. 1800 - 1830 by the then lord lieutenant of Ireland Lord Anglesey, Anglesey Bridge crosses the Bilboa River in the townland of Foildarragh. The bridge is marked 'Anglesey Bridge' on the first edition OS map. It comprises U-plan cut-waters to its south elevation and has dressed stone voussoirs on its arches. A stone parapet has dressed stone capping.

An Architectural Heritage report covering the conservation related aspects of the proposed development relating to Anglesey Bridge can be found in Appendix 16.2: Architectural Heritage Impact Assessment of Anglesey Bridge NIAH 22403905. **(Volume C4: EIAR Appendices).**

16.3.1.3 Importance of Other Recorded Sites

While sites listed on the NIAH are currently not afforded any legal protection, they have been identified as being an important part of Irish architectural heritage. Sites on the NIAH may be afforded legal protection in the future and a number are afforded legal protection if included in the Record of Protected Structures.

16.3.1.4 Sensitivity of Other Recorded Sites

Other Recorded Sites may be affected by any works which would partially or wholly remove any part of the structure. In addition, demesne landscapes often incorporated views of the surrounding landscape into their design. In instances where these landscapes might survive, the views may be affected by new structures, which may potentially visually impact these sites.

16.3.1.5 Trends in the Baseline Environment (the 'Do-Nothing' scenario)

There are five sites on the NIAH Building Survey (listed above), which are currently occupied or in use. As such they are well maintained and unlikely to suffer negative impact from natural processes. Changes to these structures may come by way of improvements carried out by the occupiers.

The five demesnes listed on the NIAH Garden Survey been subsumed into the modern agricultural landscape common to western extent of the development area. These have been subject to large scale intensive farming, with new farm yards, buildings and roads having been constructed. Many of the internal farm subdivisions, as shown on the historic editions of the Ordnance Survey, have been removed and landscaping features and woodland have been removed. It is probable that the NIAH Garden Survey sites identified will continue to be subsumed into the surrounding agricultural landscape and, as such, will get less and less recognisable.

16.3.1.6 Receiving Environment (the Baseline + Trends)

Any trends identified above which would lead to changes to the Other Recorded Sites is likely to only occur over a long period of time and it is therefore assumed in this report that the baseline environment identified above will be the receiving environment.

Other Recorded Sites

Sensitive Aspect

16.3.2 CUMULATIVE INFORMATION - Cumulative Projects & Baseline Characteristics

16.3.2.1 Cumulative Evaluation Study Areas

16.3.2.1.1 UWF Grid Connection Cumulative Evaluation Study Area

The UWF Grid Connection was evaluated for cumulative effects with other projects and the study area is set out in the table below.

UWF Grid Connection Cumulative Evaluation Study Area for Other Recorded Sites	Justification for the Study Area Extents
Cumulative Construction Stage Impacts; footprint of the UWF Grid Connection construction works area plus 1000m radius surrounding the footprint of the construction works areas	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The wider (doubled) study area was adopted in order to assure that the full extent of each identified Other Recorded Site, as well as any associated, or ancillary, features or structures, could be fully evaluated for potential damage by UWF Grid Connection construction works within 500m and by works associated with either Other Elements or Other Projects or Activities which occur within the 1000m area.
Cumulative Operational Stage Visual Impacts: 2km zone around the location of the Mountphilips Substation, 4km to identify any Other Projects or Activities	Because of the relatively low heights of Mountphilips Substation, any visibility of the substation beyond 2km would be barely perceptible to none. The study area is doubled to 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.

The study is illustrated on Figure CE 16.3 UWF Grid Connection Cumulative Evaluation Study Area for Other Recorded Sites.

16.3.2.1.2 Whole Project Cumulative Evaluation Study Area

UWF Grid Connection is part of a whole project which comprises the following Other Elements; Element 2: UWF Related Works, Element 3: UWF Replacement Forestry, Element 4: Upperchurch Windfarm (UWF), and Element 5: UWF Other Activities. The Subject Development, UWF Grid Connection is Element 1. All five elements are collectively referred to as the Whole UWF Project in this EIA Report.

The Other Elements must be considered because UWF Grid Connection is part of a whole project. Therefore, the cumulative information and evaluations for the Other Elements of the Whole UWF Project are included in order to present the totality of the project.

A description of these Other Elements is included in this EIA Report at Appendices 5.3, 5.4, 5.5 and 5.6**,** in Volume C4 EIAR Appendices**.** Scoping of these Other Elements is presented in Section 16.3.2.2.1 below.

Cultural Heritage

Topic

The Whole Project Cumulative Evaluation Study Area comprises of the UWF Grid Connection Study Area along with the study areas for Other Elements which are described in Table 16-15 and illustrated on Figure WP 16.3: Whole Project Study Area for Other Recorded Sites (Volume C3 EIAR Figures).

Table 16-15: Cumulative Evaluation Study Area for Other Recorded Sites

Cumulative Project	Cumulative Study Area Boundary	Justification for Study Area Extent
Element 2: UWF Related Works	500m corridor from works areas and activity locations for each Element, 1000m to identify any Other Projects or Activities	Cumulative impacts to Cultural Heritage Sites is limited to those sites which could potentially be affected
Element 3: UWF Replacement Forestry		

Cumulative Project	Cumulative Study Area Boundary	Justification for Study Area Extent
Element 4: Upperchurch Windfarm (UWF)	2km radius from above ground level structures, 4km to identify any Other Projects or Activities	by more than one Element of the Whole UWF Project. Because of the relatively low heights of the Telecoms Relay Pole and the Mountphilips Substation, any visibility of these structures beyond 2km would be barely perceptible to none. Any cumulative landscape character and visual amenity impacts beyond 2km will only relate to the presence of cumulative turbines in views containing the Consented UWF Turbines, the cumulative impacts of which have previously been assessed as acceptable by An Bord Pleanala. The study area is doubled to 1km and 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.
Element 5: UWF Other Activities		

16.3.2.2 Scoping for Other Projects or Activities & Potential for Impacts

The evaluation of cumulative impacts to Other Recorded Sites also considered Other Projects or Activities. A scoping exercise was carried out to determine which projects or activities, if any, have potential to cause cumulative effects to Other Recorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project and therefore should be brought forward for evaluation in this topic chapter. A brief overview of the Other Projects or Activities and the scoping exercise by the topic authors is included in Appendix 2.1: Scoping of Other Projects or Activities for the Cumulative Evaluations (Section A2.1.4.32).

The results of this scoping exercise are that: it is evaluated that no Other Projects or Activities are likely to cause cumulative effects with either the UWF Grid Connection or the Other Elements of the Whole UWF Project, and therefore no Other Projects or Activities are scoped in for evaluation of cumulative effects to Other Recorded Sites.

16.3.2.2.1 Potential for Other Elements or Other Projects to cause Impacts to Other Recorded Sites

An evaluation was carried out by the topic authors of the likelihood for the Other Elements of the Whole UWF Project to cause cumulative effects to the Sensitive Aspect Other Recorded Sites. The results of this evaluation are included in Table 16-16.

Table 16-16: Results of the Evaluation of the Other Elements of the Whole UWF Project

Other Elements of the Whole UWF Project	
Element 2: UWF Related Works	Evaluated as excluded: No potential for effects due to: • There are no Other Recorded Sites within 500m of the construction works areas associated with UWF Related Works, therefore construction works have no potential to cause physical effects such as partial or complete damage to this type of Cultural Heritage Site. • There are no Other Recorded Sites within 2km of the Telecom Relay Pole, therefore this new structure has no potential to cause any visual impacts to any Other Recorded Site

Element 3: UWF Replacement Forestry	Evaluated as excluded: No potential for effects due to • There are no Other Recorded Sites within the lands or within 500m of the lands, therefore there is no potential for UWF Replacement Forestry to have either physical or visual effects to this type of Cultural Heritage Site.
Element 4: Upperchurch Windfarm (UWF)	Evaluated as excluded: No potential for effects due to • As per the 2013 EIS, there are no Other Recorded Sites located in close proximity to the consented Upperchurch Windfarm. • As per the EIS 2013 (See Reference Documents Volume F8 UWF 2013 EIS Section 12.3.1), no cultural heritage sites, (including Other Recorded Sites), will be directly or indirectly impacted by the permitted development.
Element 5: UWF Other Activities	Evaluated as excluded: Neutral effect/No potential for effects due to: • No mechanical excavation of soils nor the erection of new structures is associated with the UWF Other Activities, therefore there is no potential for either physical or visual impacts to Other Recorded Sites.

16.3.2.3 Cumulative Information: Baseline Characteristics – Context & Character

16.3.2.3.1 Element 2: UWF Related Works

Not applicable – Element evaluated as excluded. See Section 16.3.2.2.1

16.3.2.3.2 Element 3: UWF Replacement Forestry

Not applicable – Element evaluated as excluded. See Section 16.3.2.2.1

16.3.2.3.3 Element 4: Already Consented Upperchurch Windfarm

Not applicable – Element evaluated as excluded. See Section 16.3.2.2.1

16.3.2.3.4 Element 5: UWF Other Activities

Not applicable – Element evaluated as excluded. See Section 16.3.2.2.1

16.3.2.3.5 Other Projects or Activities

Not applicable – No Other Projects or Activities were scoped in for evaluation of cumulative effects, see Section 16.3.2.2.

16.3.3 PROJECT DESIGN MEASURES for Other Recorded Sites

At the conception of the UWF Grid Connection, the design team evaluated the potential for significant impacts to the environment. Impacts will only take place where three components exist together; (1) the source of the impact (project), (2) the receptor of the impact (sensitive aspect) and (3) a pathway between the source and the sensitive aspect. The objective of mitigation measures is to avoid, prevent or reduce, one of the three components of an impact by choosing an alternative location, alternative design or an alternative process.

Potential or likely significant impacts were avoided, prevented or reduced by integrating mitigation measures into the fundamental design of the development – these are the Project Design Environmental Protection Measures, which are shortened to 'Project Design Measures' in this EIA Report.

The development as evaluated in the EIA Report incorporates the Project Design Measures.

The Project Design Measures outlined in Table 16-17 are relevant to the Environmental Factor, Cultural Heritage, and in particular to the sensitive aspect **Other Recorded Sites**.

Table 16-17: UWF Grid Connection Project Design Measures relevant to Other Recorded Sites

PD ID	Project Design Environmental Protection Measure (PD)
PD05	At the Mountphilips Substation site, construction traffic will be restricted to the construction works area and tracking across adjacent ground will not be permitted. A speed limit of 25km/hr for all traffic/machinery will be implemented at the Mountphilips Substation site. Outside of Mountphilips Substation site, all construction will be restricted to the paved road surfaces or built surfaces along the 110kV UGC. A speed limit of 50km/hr for all delivery and construction traffic will be implemented on Local Roads ('L' roads).
PD14	All initial groundworks within 500m of an RMP or NIAH site, will be monitored by an archaeologist under license from the National Monuments Service, to archaeologically record and preserve, either in situ or by record, any structures, features or objects of archaeological significance which may be encountered during the works.
PD15	Where excavations occur at culvert replacement locations along the 110kV UGC, and at the 3 No. new watercourse crossing at the Mountphilips Substation site, excavations will be monitored by an appropriately qualified archaeologist under license from the National Monuments Service, the excavated material will be examined for any evidence of archaeological material and metal detected as part of a finds retrieval strategy.

16.3.4 EVALUATION OF IMPACTS to Other Recorded Sites

In this Section, the likely direct and indirect effects of the UWF Grid Connection and the likely cumulative effects of the Other Elements of the Whole UWF Project are identified and evaluated.

A conceptual site model exercise was carried out to facilitate the identification of source-pathway-receptor links between the project (source) and the sensitive aspect (receptor) - Other Recorded Sites.

As a result of the exercise, no impacts were included – all impacts were excluded.

Table 16-18: List of all Impacts included and excluded from the Impact Evaluation Table sections

Impacts Included (Evaluated in the Impact Evaluation Table sections)	***Impacts Excluded (Justification at the end of the Impact Evaluation Table sections)***
No Impacts Included for Evaluation	*Complete or partial destruction (construction stage)*
	Visual Impact (operational stage)
	Decommissioning stage

The source-pathway-receptor links and the rationale for excluded impacts are described next in Section 16.3.4.1.

16.3.4.1 Description and Rationale for Excluded (scoped out) Impacts

The source-pathway-receptor links and the rationale for impacts excluded from the Impact Evaluation Table sections are described in Table 16-19 below.

Table 16-19: Description and Rationale for Excluded Impacts to Other Recorded Sites

Key: 1: UWF Grid Connection; 2: UWF Related Works; 3: UWF Replacement Forestry; 4: Upperchurch Windfarm; 5: UWF Other Activities

Source(s) of Impacts	Project Element	Pathway	Impacts (Consequences)	Rationale for Excluding (Scoping Out)
Construction Stage				
Ground-works	1	Mechanical or manual excavation of soil.	Complete or partial destruction	Rationale for Excluding: No potential for impacts/No likely impacts, In relation to the UWF Grid Connection, a total of 8 No. Other Recorded Sites within 500m of UWF Grid Connection construction works areas. The UWF Grid Connection works occur within the boundary of 2 sites- Demesne (GR3) and Bridge (GR12). *GR3 - Mount Philips Demesne*, is a designed landscape recorded on the NIAH Garden Survey and is described on the survey as having virtually no recognisable features visible. During field walking it was noted that this site has been subsumed into the modern agricultural landscape in the area. Therefore, it is considered that there is no potential for significant impacts to *GR3 - Mountphilips Demesne*. *In relation to GR12 – Anglesey Bridge*, this bridge is located on the Regional Road R503, the 110kV UGC will be installed in the road pavement over the bridge and there will be no interaction with the columns or supporting structures of the bridge. Some works may be required to the bridge parapets which are currently broken and cracked. This work will be carried out as per specifications drawn up by a suitably qualified conservation engineer, based on best practice standard construction methodologies for conservation works (*Architectural Heritage Protection Guidelines for Local Authorities (2011)* and confirmed by the Architectural Heritage Advisory Service of the Department of Culture, Heritage and the Gaeltacht under Part IV of the Planning and Development Act 2000 (as amended) and the Planning and Development Regulations 2001 (as amended). An Architectural Heritage Impact Assessment of Anglesey Bridge can be found in Appendix 16.2: Architectural Heritage Impact Assessment of Anglesey Bridge NIAH 22403905. 2 Other Recorded Sites are within 20m of the construction work, these Sites relate to *GR10 - Church of the Visitation*, *GR11 - Rear Cross National School*, based on site investigations, it is considered that UWF Grid Connection works in close proximity to these sites relates to the construction of the 110kV UGC in public road pavement and impacts to these 2 sites are not expected to occur.

Other Recorded Sites

Sensitive Aspect

Source(s) of Impacts	Project Element	Pathway	Impacts (Consequences)	Rationale for Excluding (Scoping Out)
				The remaining 4 No. Other Recorded Sites are located at distances greater than 100m from UWF Grid Connection construction works and there is no likelihood for impacts to occur. Furthermore, damage to currently unknown subsurface archaeology associated with the 6 Other Recorded Sites (which are located outside the construction works area boundaries) is not likely to occur due to both the separation distance between known sites and works areas and as the design of the UWF Grid Connection (see Project Design Measures - Section 16.3.3), includes for the archaeological monitoring of all ground works within 500m of an RMP or NIAH site, during the construction stage. This will allow for an on-site archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to monitor groundworks and stop works in the affected area in the event of any archaeological features or objects being uncovered during excavation works, and will ensure that any features or objects uncovered will be preserved by record and/or preserved in situ, in consultation with the National Monuments Service and the National Museum of Ireland.
Operational Stage				
Above-ground structures	1	Visibility	Visual Impact	Rationale for Excluding: No potential for impact In relation to the UWF Grid Connection, only the Mountphilips Substation (control building up to 8m in height, with associated lattice towers extending to 18m) has the potential to cause visual effects, 8 No. sites occur within 2km of Mountphilips Substation- *GR1 – Cragg Demesne,* GR2 - *Cragg House, GR3 – Mountphilips Demesne, GR4 – Barna Demesne,* GR5 - *Oakhampton House, GR6 – Oakhampton Demesne, GR7 – Rockvale Demesne and* GR8 - *Charter School.* Drone surveys by the authors of Ch.17 Landscape demonstrate that there will be no visibility of the Mountphilips Substation from 7 No. of these sites, and the remaining site; *GR3 – Mount Philips Demesne* has been completely subsumed into the modern agricultural landscape and above surface features no longer exist, therefore it cannot be affected by visual impacts. See also Landscape Figure 17. 4 (Volume C3 EIAR Figures) for photomontages of the view of Mountphilips from the L2166-10 in Coole townland
Decommissioning Stage				
Rationale for Excluding: UWF Grid Connection will not be decommissioned.				

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16.3.5 Mitigation Measures for Impacts to Other Recorded Sites

Mitigation measures were incorporated into the UWF Grid Connection project design, including the Project Design Measures. No additional mitigation measures are required as the topic authors conclude that **there no impacts are likely** to occur to Other Recorded Sites as a consequence of the UWF Grid Connection.

16.3.6 Evaluation of Residual Impacts to Other Recorded Sites

Residual Impacts are the final or intended effects that will occur after mitigation measures have been put into place. No additional mitigation measures are required and thus the Residual Impact is the same as the Impact set out in Section 16.3.4.1 – i.e. **no impacts are likely to occur**.

16.3.7 UWF Grid Connection Environmental Management Plan

The Project Design measures will be implemented by the Project Manager and the main Contractor during the construction stage, under the Environmental Management Plan for the UWF Grid Connection (EMP). The EMP is appended to this EIA Report as Volume D.

The EMP will be an important contract document for the main construction contractor (Contractor) who will be contractually obliged to comply with the EMP. An Environmental Clerk of Works will be appointed, who will be independent of the construction Contractor, and it will be the responsibility of the Environmental Clerk of Works to monitor the compliance of the Contractor with the EMP through liaising with the Construction Site Manager and the Project Manager, monitoring construction works on a daily basis and by carrying out regular audits on EMP compliance. The Environmental Clerk of Works will be resourced to employ a team of environmental specialists including a Site Ecologist, Site Hydrologist and an Invasive Species Specialist.

16.3.8 Summary of Impacts to Other Recorded Sites

A summary of the Impact to Other Recorded Sites is presented in Table 16-20.

Table 16-20: Summary of the impacts to Other Recorded Sites

Impact to Other Recorded Sites:	**No impact**
Evaluation	*Section 16.3.4.1*
Project Life-Cycle Stage	*All*
UWF Grid Connection *Direct/indirect impact* *Cumulative Impact*	**No Potential for Impacts / No Likely Impacts**
Element 2: UWF Related Works	No Potential for Impacts - Evaluated as Excluded, see Section 16.3.2.2.1
Element 3: UWF Replacement Forestry	No Potential for Impacts - Evaluated as Excluded, see Section 16.3.2.2.1
Element 4: Upperchurch Windfarm	No Potential for Impacts - Evaluated as Excluded, see Section 16.3.2.2.1
Element 5: UWF Other Activities	No Potential for Impacts - Evaluated as Excluded, see Section 16.3.2.2.1
Cumulative Impact:	
Whole UWF Project Effect	**No Potential for Impacts / No Likely Impacts**

The greyed out boxes in the above summary table relate to the cumulative information for the Other Elements of the Whole UWF Project, which are included to show the totality of the project.

Note: No cumulative information for Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Other Recorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.3.2.2).

16.4 Sensitive Aspect No.3: Previously Unrecorded Sites

This Section provides a description and evaluation of the Sensitive Aspect - Previously Unrecorded Sites. Previously Unrecorded Sites are sites identified on historic Ordnance Survey Maps and/or recorded during field walking or from reviews of aerial photography.

16.4.1 BASELINE CHARACTERISTICS of Previously Unrecorded Sites

This Section 16.4.1 comprises the identification of the Study Area for direct or indirect effects, and a description of the context, character, importance and sensitivity of the Previously Unrecorded Sites in the area. Trends or changes in the baseline environment are also identified.

16.4.1.1 STUDY AREA for Previously Unrecorded Sites

The study area for Previously Unrecorded Sites in relation to the UWF Grid Connection is described in Table 16-21 and illustrated on Figure GC 16.4: UWF Grid Connection Study Area for Previously Unrecorded Sites (Volume C3 EIAR Figures).

Table 16-21: UWF Grid Connection Study Area for Previously Unrecorded Sites

Study Area for Previously Unrecorded Sites	Justification for the Study Area Extents
Construction Stage Effects; Within the footprint of construction works areas. The study area is extended to 100m at certain locations which have features of potentially significant interest or importance.	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The wider study area was adopted in order to ensure that the full extent of each identified Cultural Heritage Site, as well as any associated, or ancillary, features or structures, could be fully appraised. It is extremely unlikely that Previously Unrecorded Cultural Heritage Sites beyond this area could be impacted.
Operational Stage Visual Effects: 2km zone around the location of the Mountphilips Substation	Because of the relatively low heights of the Mountphilips Substation, any visibility beyond 2km would be barely perceptible to none. The remainder of the UWF Grid Connection will either be placed below ground or will comprise a new stone roads which are a common occurrence in the area and will not cause any visual impacts, and for this reason these parts are not included in the operational stage study area.

16.4.1.2 Baseline Context and Character of Previously Unrecorded Sites in the UWF Grid Connection Study Area

The majority of the Previously Unrecorded Sites with the Slievefelim to Silvermines upland area date from the post medieval or early modern periods and reflect a wide variety of human rural activity. Examples include infrastructural, religious, agricultural and domestic sites. The sites mainly comprised of Lime Kilns, Wells, Quarries and Townland Boundaries, many of which may not have ever had any structural elements associated with them or are no longer standing.

Cartographic analysis, aerial photography and a thorough field survey identified a total of 165 No. additional Previously Unrecorded Sites within the study area relating to the UWF Grid Connection. While these were all mapped over the course of this report, only 51 No. Previously Unrecorded Sites were deemed to have potential significance, and are included for evaluation in this Section 16.4.4.

The 51. No. Previously Unrecorded Sites are identified on Table 16-22 below and on Figure 16.4: UWF Grid Connection Study Area for Previously Unrecorded Sites. A more detailed description is provided in Appendix 16.1: Detailed Description of Cultural Heritage Sites: **Volume C4 EIAR Appendices**.

Table 16-22: Previously Unrecorded Sites within the UWF Grid Connection Study Area

Site ID	Source	Classification/Type	Townland	Separation Distance from Project
GU1	First Edition Ordnance Survey	Pond	Mountphilips	654m
GU2	25 Inch Ordnance Survey	House	Mountphilips	259m
GU3	25 Inch Ordnance Survey	Ford	Oakhampton	10m
GU4	First Edition Ordnance Survey	Bridge	Mountphilips	955m
GU5	First Edition Ordnance Survey	House	Coole	358m
GU6	25 Inch Ordnance Survey	Stepping Stones	Barna	1.01km
GU7	First Edition Ordnance Survey	Demesne	Coole	215m
GU8	25 Inch Ordnance Survey	House	Killeen	1.53km
GU9	25 Inch Ordnance Survey	Lodge	Barna	699m
GU10	25 Inch Ordnance Survey	House	Barna	740m
GU11	First Edition Ordnance Survey	Gate Lodge	Foildarrig	593m
GU12	25 Inch Ordnance Survey	Stepping Stones	Foildarrig	784m
GU13	25 Inch Ordnance Survey	House	Foildarrig	956m
GU14	First Edition Ordnance Survey	Mill	Rockvale	1km
GU15	First Edition Ordnance Survey	Bridge	Rockvale	1km
GU16	First Edition Ordnance Survey	House	Mackney (Bourke)	1.45km
GU17	First Edition Ordnance Survey	School	Clonbealy	2km
GU18	First Edition Ordnance Survey	Demesne	Clonbealy	1.7km
GU19	First Edition Ordnance Survey	Demesne	Newport	1.9km
GU20	25 Inch Ordnance Survey	Smithy	Touknockane	2km
GU21	25 Inch Ordnance Survey (1905)	Ford	Castlewaller	0m
GU22	25 Inch Ordnance Survey (1905)	Foot Bridge	Castlewaller	10m
GU23	First Edition Ordnance Survey (1838)	Spring	Castlewaller	20m
GU24	First Edition Ordnance Survey (1838)	Spring	Castlewaller	60m
GU25	25 Inch Ordnance Survey (1905)	Ford	Castlewaller	0m
GU26	25 Inch Ordnance Survey (1905)	Foot Stick	Castlewaller	10m
GU27	25 Inch Ordnance Survey (1905)	Well	Cooldrisla	19m
GU28	25 Inch Ordnance Survey (1905)	Lime Kiln	Kilnacappagh	23m

Site ID	Source	Classification/Type	Townland	Separation Distance from Project
GU29	25 Inch Ordnance Survey (1905)	Lime Kiln	Derrygareen	18m
GU30	25 Inch Ordnance Survey (1905)	Well	Knockancullenagh	33m
GU31	25 Inch Ordnance Survey (1905)	Lime Kiln	Knockancullenagh	5m
GU32	25 Inch Ordnance Survey (1905).	Lime Kiln	Lackamore	55m
GU33	25 Inch Ordnance Survey (1905).	Lime Kiln	Lackamore	48m
GU34	First Edition Ordnance Survey (1838)	Shaft	Tooreenbrien Upper	25m
GU35	First Edition Ordnance Survey (1838)	Lackamore Lodge	Tooreenbrien Upper	70m
GU36	First Edition Ordnance Survey (1838)	Lackamore Post Office	Tooreenbrien Upper	10m
GU37	First Edition Ordnance Survey (1838)	Ford	Tooreenbrien Lower	22m
GU38	25 Inch Ordnance Survey (1905)	Well	Shanballyedmond	18m
GU39	First Edition Ordnance Survey (1838)	Creamery	Reardnogy More	10m
GU40	First Edition Ordnance Survey (1838)	Smithy	Reardnogy More	10m
GU41	25 Inch Ordnance Survey (1905).	Constabulary Barrack	Reardnogy More	30m
GU42	25 Inch Ordnance Survey (1905)	Well	Reardnogy More	48m
GU43	25 Inch Ordnance Survey (1905)	Well	Reardnogy More	86m
GU44	25 Inch Ordnance Survey (1905)	Well	Reardnogy More	12m
GU45	25 Inch Ordnance Survey (1905)	Lime Kiln	Baurnadomeeny	55m
GU46	25 Inch Ordnance Survey (1905)	Well	Baurnadomeeny	30m
GU47	First Edition Ordnance Survey (1838)	Smithy	Foildarragh	25m
GU48	First Edition Ordnance Survey (1838)	Kilcommon Creamery	Foildarragh	40m
GU49	First Edition Ordnance Survey (1838)	Constabulary Barrack	Kilcommon	25m
GU50	First Edition Ordnance Survey (1838)	Townland Boundary	Mountphilips/Coole	0m
GU51	First Edition Ordnance Survey (1838)	Townland Boundary	Coole/Freagh	0m

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Of the 51 No. Previously Unrecorded Sites, 29 no. are within the 100m study area. 22 No. are within the 2km study area around Mountphilips Substation, with 12 no. of the 22.no sites having theoretical visibility of the Mountphilips Substation. These 12 no. sites, which are evaluated for visual impacts caused by the new substation are: GU1 -Pond, GU2 - House, GU5- House, GU7 - Demesne, GU8 House, GU9 - Lodge, GU10 - House, GU11- Lodge, Site GU16 - House, Site GU17 – School, Site GU18 - Demesne and GU20 – Smithy. Drone surveys by the authors of Ch.17 Landscape demonstrate that there will be no visibility of the Mountphilips Substation from any of these sites.

The 110kV UGC is routed along the Anglesey Road (formerly known as the 'New Line Road'), which was constructed on behalf of the then Lord Lieutenant, Henry Paget 1st Marquis of Anglesey, in 1838 by the

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Commissioner of Valuation, surveyor and engineer Sir Richard John Griffith. The road, complete with milestones, was built to link Thurles with Newport. Previously Unrecorded Sites GU27 to GU49 are located alongside this road. Thirteen culverts have been also been identified along the Anglesey Road (R503), which may require replacement. These culverts have been documented but are not considered to be of archaeological importance.

16.4.1.3 Importance of Previously Unrecorded Sites

While none of these sites are subject to any legal protection, nor are they uncommon structures in the Irish landscape, they form an integral part of the cultural heritage landscape and are indicative of the long history of human activity within the study area.

16.4.1.4 Sensitivity of Previously Unrecorded Sites

Previously Unrecorded Sites may be affected by any groundworks which would partially or wholly remove any part of the structure. Because the majority of Previously Unrecorded Sites were not designed with specific views in mind, nor were they incorporated into a wider landscape of cultural heritage sites, they are unlikely to be sensitive to negative visual impacts arising from the construction of above ground structures.

An exception to this may relate to previously unrecorded demesne, house or lodge sites. These would only be sensitive in instances where the historic fabric is still largely intact and there are clear sightlines with said above-ground structures.

16.4.1.5 Trends in the Baseline Environment (the 'Do-Nothing' scenario)

Previously unrecorded sites are not subject to any legal protections and as such many have fallen out of use and into ruin, been demolished or subsumed into the modern agricultural and forestry landscapes. During field work it was found that many of the sites identified from the historic editions of the Ordnance Survey are no longer extant. It is considered that the gradual degradation or destruction of Unrecorded Upstanding Cultural Heritage sites will continue.

16.4.1.6 Receiving Environment (the Baseline + Trends)

Any trends identified above which would lead to changes to the Previously Unrecorded Sites is likely to only occur over a long period of time and it is therefore assumed in this report that the baseline environment identified above will be the receiving environment.

16.4.2 CUMULATIVE INFORMATION - Cumulative Projects & Baseline Characteristics

16.4.2.1 Cumulative Evaluation Study Areas

16.4.2.1.1 UWF Grid Connection Cumulative Evaluation Study Area

The UWF Grid Connection was evaluated for cumulative effects with other projects and the study area is set out in the table below.

UWF Grid Connection Cumulative Evaluation Study Area for Previously Unrecorded Sites	Justification for the Study Area Extents
Cumulative Construction Stage Impacts; footprint of the UWF Grid Connection construction works area plus 200m radius surrounding the footprint of the construction works areas Cumulative Operational Stage Visual Impacts: 2km zone around the location of the Mountphilips Substation, 4km to identify any Other Projects or Activities	Groundworks, and their potential to directly impact any Cultural Heritage Site, are restricted to the immediate footprint of the development area. The study area is doubled to 200m, to identify Other Elements or Other Projects or Activities which have potential to cause cumulative effects with UWF Grid Connection. Because of the relatively low heights of Mountphilips Substation, any visibility of the substation beyond 2km would be barely perceptible to none. The study area is doubled to 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.

The study is illustrated on Figure CE 16.4 UWF Grid Connection Cumulative Evaluation Study Area for Previously Unrecorded Sites.

16.4.2.1.2 Whole Project Cumulative Evaluation Study Area

UWF Grid Connection is part of a whole project which comprises the following Other Elements; Element 2: UWF Related Works, Element 3: UWF Replacement Forestry, Element 4: Upperchurch Windfarm (UWF), and Element 5: UWF Other Activities. The Subject Development, UWF Grid Connection is Element 1. All five elements are collectively referred to as the Whole UWF Project in this EIA Report.

The Other Elements must be considered because UWF Grid Connection is part of a whole project. Therefore, the cumulative information and evaluations for the Other Elements of the Whole UWF Project are included in order to present the totality of the project.

A description of these Other Elements is included in this EIA Report at Appendices 5.3, 5.4, 5.5 and 5.6**,** in Volume C4 EIAR Appendices**.** Scoping of these Other Elements is presented in Section 16.4.2.2.1 below.

The Whole Project Cumulative Evaluation Study Area comprises of the UWF Grid Connection Study Area along with the study areas for Other Elements which are described in Table 16-23 and illustrated on Figure WP 16.4: Whole Project Study Area for Previously Unrecorded Sites (Volume C3 EIAR Figures).

Table 16-23: Whole Project Cumulative Evaluation Study Area for Previously Unrecorded Sites

Cumulative Project	Cumulative Study Area Boundary	Justification for Study Area Extent
Element 2: UWF Related Works	200m corridor from works areas and activity locations for each Element 2km radius from above ground level structures,	Cumulative impacts to Cultural Heritage Sites is limited to those sites which could potentially be affected by more than one Element of the Whole UWF Project. The study area is doubled to 200m, to identify Other Projects or Activities which have potential to cause cumulative effects.
Element 3: UWF Replacement Forestry		
Element 4:		

Cumulative Project	Cumulative Study Area Boundary	Justification for Study Area Extent
Upperchurch Windfarm (UWF) Element 5: UWF Other Activities	4km to identify any Other Projects or Activities	Because of the relatively low heights of the Telecoms Relay Pole and the Mountphilips Substation, any visibility of these structures beyond 2km would be barely perceptible to none. Any cumulative landscape character and visual amenity impacts beyond 2km will only relate to the presence of cumulative turbines in views containing the Consented UWF Turbines, the cumulative impacts of which have previously been assessed as acceptable by An Bord Pleanála. The study area is doubled to 4km, to identify Other Projects or Activities which have potential to cause cumulative effects.

16.4.2.2 Scoping for Other Projects or Activities & Potential for Impacts

The evaluation of cumulative impacts to Previously Unrecorded Sites also considered Other Projects or Activities. A scoping exercise was carried out to determine which projects or activities, if any, have potential to cause cumulative effects to Previously Unrecorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project and therefore should be brought forward for evaluation in this topic chapter. A brief overview of the Other Projects or Activities and the scoping exercise by the topic authors is included in Appendix 2.1: Scoping of Other Projects or Activities for the Cumulative Evaluations (Section A2.1.4.33).

The results of this scoping exercise are that: it is evaluated that no Other Projects or Activities are likely to cause cumulative effects with either the UWF Grid Connection or the Other Elements of the Whole UWF Project, and therefore no Other Projects or Activities are scoped in for evaluation of cumulative effects to Previously Unrecorded Sites.

16.4.2.2.1 Potential for Other Elements or Other Projects to cause Impacts to Previously Unrecorded Sites

An evaluation was carried out by the topic authors of the likelihood for the Other Elements of the Whole UWF Project to cause cumulative effects to the Sensitive Aspect Previously Unrecorded Sites. The results of this evaluation are included in Table 16-24.

The location of, and study area boundary associated with, the Other Elements which are included for cumulative evaluation is illustrated on Figure WP 16.4.

Table 16-24: Results of the Evaluation of the Other Elements of the Whole UWF Project

Other Elements of the Whole UWF Project	
Element 2: UWF Related Works	Included for the evaluation of cumulative effects
Element 3:UWF Replacement Forestry	Evaluated as excluded: Neutral effect/No potential for effects due to • There is no potential for damage to the Foilnaman/Knockcurraghbola Commons townland boundary, as no works are required to this boundary. • No other Previously Unrecorded Sites were mapped on the UWF Replacement Forestry lands during field surveys or desktop review, therefore there is no potential for any physical damage to any other Previously Unrecorded Sites. • In relation to visual effects from the maturing woodland; there are 3 Previously Unrecorded Sites (2 wells and a quarry) which will have theoretical visibility of

	the new woodland, however as these sites lack archaeological, cultural or historical significance it is considered that the maturing wood will cause Neutral visual effects.
Element 4: Upperchurch Windfarm (UWF)	Included for the evaluation of cumulative effects
Element 5: UWF Other Activities	Evaluated as excluded: Neutral effect/No potential for effects due to: • No mechanical excavation of soils nor the erection of new structures is associated with the UWF Other Activities, therefore there is no potential for either physical or visual impacts to Previously Unrecorded Sites.

16.4.2.3 Cumulative Information: Baseline Characteristics – Context & Character

It should be noted that 18 No. Previously Unrecorded Sites are located within the study area associated with the UWF Grid Connection and the UWF Related Works and the Upperchurch Windfarm; all of these fall within the category of well, or lime kiln or townland boundary.

16.4.2.3.1 Element 2: UWF Related Works

Cartographic analysis, aerial photography and a thorough field survey identified a total of 41 No. Previously Unrecorded Sites within the study area relating to the UWF Related Works. While these were all mapped over the course of the preparation of the EIA Report for UWF Related Works, only 1 No. Previously Unrecorded Sites (RU1, House), was deemed to have potential significance, was numbered, listed and described in detail in the complete table of sites, which can be found in Appendix 16.1: Detailed Description of Cultural Heritage Sites. RU1 *House* is 1.7km from the UWF Grid Connection construction works boundary. The Internal Windfarm Cabling crossings townland boundaries at 19 No. locations.

In relation to the Operational Stage, there are 21 No. sites which will have theoretical visibility of the Telecoms Relay Pole; 1 No. of these is a lime kiln, 4 No. are gravel pits/quarries, 16 No. are springs/wells.

16.4.2.3.2 Element 3: UWF Replacement Forestry

Not applicable – Element evaluated as excluded. See Section 16.4.2.2.1

16.4.2.3.3 Element 4: Already Consented Upperchurch Windfarm

The 41 No. Previously Unrecorded Sites, identified for the UWF Related Works are also relevant to the Upperchurch Windfarm construction works areas and the Consented UWF Turbines.

Consideration of the Passage of Time: There has been no changes to Previously Unrecorded Sites in the Upperchurch Windfarm area, and the descriptions in the 2013 and 2014 documents remain relevant to the cumulative evaluations in this EIAR. Therefore it is considered that there has been no material changes in the baseline environment.

16.4.2.3.4 Other Projects or Activities

Not applicable – No Other Projects or Activities were scoped in for evaluation of cumulative effects, see Section 16.4.2.1.

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16.4.3 PROJECT DESIGN MEASURES for Previously Unrecorded Sites

At the conception of the UWF Grid Connection, the design team evaluated the potential for significant impacts to the environment. Impacts will only take place where three components exist together; (1) the source of the impact (project), (2) the receptor of the impact (sensitive aspect) and (3) a pathway between the source and the sensitive aspect. The objective of mitigation measures is to avoid, prevent or reduce, one of the three components of an impact by choosing an alternative location, alternative design or an alternative process.

Potential or likely significant impacts were avoided, prevented or reduced by integrating mitigation measures into the fundamental design of the development – these are the Project Design Environmental Protection Measures, which are shortened to 'Project Design Measures' in this EIA Report.

The development as evaluated in the EIA Report incorporates the Project Design Measures.

The Project Design Measure outlined in Table 16-25 is relevant to the Environmental Factor, Cultural Heritage, and in particular to the sensitive aspect **Previously Unrecorded Sites**.

Table 16-25: UWF Grid Connection Project Design Measures relevant to Previously Unrecorded Sites

PD ID	Project Design Environmental Protection Measure (PD)
PD05	At the Mountphilips Substation site, construction traffic will be restricted to the construction works area and tracking across adjacent ground will not be permitted. A speed limit of 25km/hr for all traffic/machinery will be implemented at the Mountphilips Substation site. Outside of Mountphilips Substation site, all construction will be restricted to the paved road surfaces or built surfaces along the 110kV UGC. A speed limit of 50km/hr for all delivery and construction traffic will be implemented on Local Roads ('L' roads).
PD14	All initial groundworks within 500m of an RMP or NIAH site, will be monitored by an archaeologist under license from the National Monuments Service, to archaeologically record and preserve, either in situ or by record, any structures, features or objects of archaeological significance which may be encountered during the works.
PD15	Where excavations occur at culvert replacement locations along the 110kV UGC, and at the 3 No. new watercourse crossing at the Mountphilips Substation site, excavations will be monitored by an appropriately qualified archaeologist under license from the National Monuments Service, the excavated material will be examined for any evidence of archaeological material and metal detected as part of a finds retrieval strategy.

Cumulative Information: Potential or likely significant impacts caused by the Other Elements of the Whole UWF Project were avoided, prevented or reduced by incorporating Project Design Measures into the design of the UWF Related Works and into the consented design of the Upperchurch Windfarm. These Project Design Measures are included in the description of these Elements, and can be found in this EIA Report in Appendices 5.3 and 5.5 in Volume C4: EIAR Appendices.

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16.4.4 EVALUATION OF IMPACTS to Previously Unrecorded Sites

In this Section, the likely direct and indirect effects of the UWF Grid Connection are identified and evaluated. Then the likely cumulative effects of the UWF Grid Connection together with the Other Elements of the Whole UWF Project are identified and evaluated.

A conceptual site model exercise was carried out to facilitate the identification of source-pathway-receptor links between the project (source) and the sensitive aspect (receptor) - Previously Unrecorded Sites.

As a result of the exercise, some impacts were included and some were excluded.

Table 16-26: List of all Impacts included and excluded from the Impact Evaluation Table sections

Impacts Included (Evaluated in the Impact Evaluation Table sections)	***Impacts Excluded (Justification at the end of the Impact Evaluation Table sections)***
Damage to townland boundaries (construction stage)	*Complete or partial destruction on other Previously Unrecorded Sites (i.e. not townlands) (construction stage)*
	Visual Impact (operational stage)
	Decommissioning Effects

The source-pathway-receptor links for the impact included are described in the Impact Evaluation Table in the next section – Section 16.4.4.1.

The source-pathway-receptor links and the rationale for excluded impacts are described in the section directly after the Impact Evaluation Table, in Section 16.4.4.2.

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16.4.4.1 Impact Evaluation Table: Damage to townland boundaries

Impact Description	
Project Life Cycle Stage:	Construction stage

Impact Source: Initial groundworks during the construction phase
Cumulative Impact Source: Initial groundworks during the construction phase
Impact Pathway: Excavation or removal of townland boundaries

Impact Description: Likely impacts to Previously Unrecorded Sites are limited to the mechanical or manual excavation of and temporary or permanent removal of small sections of townland boundaries at both site access points (UWF Grid Connection and UWF Related Works) and to install cables or roads along works areas (UWF Related Works). Often modern townland boundaries have origins going back to the medieval period or earlier, where they might have acted as extents for manors or ancient landholdings. Whilst there is no evidence to this effect for the townland boundaries in question, any associated structures or ditches may contain archaeologically significant material which may be damaged or removed during ground works.

Impact Quality: Negative

Evaluation of the Subject Development Impact – Damage to Townland Boundaries

Element 1: UWF Grid Connection – direct/indirect impact

Impact Magnitude:
The potential for damage to townland boundaries is limited to the Mountphilips Substation site.

The construction of the UWF Grid Connection will involve the removal of a 160m section of the Coole/Freagh townland boundary at the widened entrance to Mountphilips Substation site off the Local Road L2166-10. In addition a 10m section of the Mountphilips/Coole townland boundary will be removed for the new permanent access road to the Mountphilips Substation compound.

During field investigations, nothing of archaeological significance was found at any of these locations.

Significance of the Impact: Imperceptible

Rationale for Impact Evaluation:

- Small scale and limited extent of damage to townland boundaries, limited to 2 boundaries
- Over the course of the field inspection there was no indication of any obvious features of archaeological significance associated with the affected townland boundaries.
- The townland boundaries in the area have been subject to continuous alterations, demolition and removal as a result of housing, agriculture and forestry in recent times.
- The design of the development (see section 16.4.3) includes a provision for archaeological monitoring of all ground works relating to the construction, within 500m of an RMP or NIAH site. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to archaeologically record and preserve, either *in situ* or *by record*, any structures, features or objects of archaeological significance which may be encountered during the works.

Element 1: UWF Grid Connection – cumulative impact

Cumulative Impact Magnitude: There is no potential for cumulative impacts, as UWF Grid Connection will not cause any damage to townland boundaries in the Upperchurch Windfarm/UWF Related Works area.

Significance of the Impact: No Cumulative Impact

Rationale for Impact Evaluation:

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- Separation distance from Other Elements of the Whole UWF Project

Cumulative Information: Individual Evaluations of Other Elements of the Whole UWF Project

Element 2: UWF Related Works

Impact Magnitude:
The construction of the UWF Related Works will involve the temporary removal of c.55m of boundary at 12 No. of townland boundaries and the permanent removal of c.15m at 3 No. townlands boundaries along the route of the Internal Windfarm Cabling, Haul Route Works and Realigned Windfarm Road locations.
3 no. of these points are through existing farm/forestry gates or farm/forestry roads, and 12 no. are new boundary crossing points.

During field investigations, nothing of archaeological significance was found at any of these locations.

Significance of the Impact: Slight

Rationale for Impact Evaluation:

- Only a very small portion (up to 10m) of the total extent of any particular townland boundary is to be affected by the UWF Related Works.
- Over the course of the field inspection there was no indication of any obvious features of archaeological significance associated with the affected townland boundaries.
- The townland boundaries in the region have been subject to continuous alterations, demolition and removal as a result of development, agriculture and forestry in recent times.
- The design of the development (see section 16.4.3) includes a provision for archaeological monitoring of all ground works relating to the construction. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to archaeologically record and preserve, either *in situ* or *by record*, any structures, features or objects of archaeological significance which may be encountered during the works.

Element 3: UWF Replacement Forestry – *N/A, evaluated as excluded, see Section 16.4.2.1.1*

Element 4: Consented Upperchurch Windfarm

Impact Magnitude:
In total there will involve the permanent removal of c.60m at 7 No. townlands boundaries along the Upperchurch Windfarm roads. 3 no. of these points are through existing farm/forestry gates or farm/forestry roads. And 4 no. are new boundary crossing points

Significance of the Impact: Not Significant

Rationale for Impact Evaluation:

- The Board considered that, subject to compliance with the mitigation measures set out in the Environmental Impact Statement, the development would not have a significant effect on the environment.
- The application of Condition No. 20 which will protect unknown subsurface archaeology.

Element 5: UWF Other Activities – *N/A, evaluated as excluded, see Section 16.4.2.1.1*

Evaluation of Other Cumulative Impacts – Damage to Townland Boundaries

Whole UWF Project Effect

Cumulative Impact Magnitude:
A total of 55m of boundary will be temporary removed at 12 No. townland boundaries and 235m of boundary will be permanently removed at 10 No. of townland boundaries (10m of which overlap at 2 No. boundaries between the Upperchurch Windfarm and the UWF Related Works) to accommodate the construction of the Whole UWF Project.

Previously Unrecorded Sites

Sensitive Aspect

None of these boundaries are of archaeological significance.
Significance of the Cumulative Impact: Slight
Rationale for Cumulative Impact Evaluation: • Only a very small portion of the total extent of any particular townland boundary is to be affected by construction works. • Over the course of the field inspection there was no indication of any obvious features of archaeological significance associated with the affected townland boundaries. • The townland boundaries in the region have been subject to continuous alterations, demolition and removal as a result of development, housing, agriculture and forestry in recent times. • The design of the development (see section 16.4.3) includes a provision for archaeological monitoring of all ground works relating to the construction, within 500m of an RMP or NIAH site. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to archaeologically record and preserve, either *in situ* or *by record*, any structures, features or objects of archaeological significance which may be encountered during the works.

Note: No cumulative evaluation of Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Previously Unrecorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.4.2.2).

Topic

Cultural Heritage

16.4.4.2 Description and Rationale for Excluded (scoped out) Impacts

The source-pathway-receptor links and the rationale for impacts excluded from the Impact Evaluation Table sections are described in Table 16-27 below.

Table 16-27: Description and Rationale for Excluded Impacts to Previously Unrecorded Sites

Key: 1: UWF Grid Connection; 2: UWF Related Works; 3: UWF Replacement Forestry; 4: Upperchurch Windfarm; 5: UWF Other Activities

Source(s) of Impacts	Project Element	Pathway(s)	Impacts (Consequences)	Rationale for Excluding (Scoping Out)
Construction Stage				
Ground-works	1, 2, 4	Mechanical or manual excavation	Complete or partial destruction of other Previously Unrecorded Sites (i.e. not townland boundaries)	Rationale for Excluding: Neutral Impact, The 110kV UGC crosses two fords at GU21 and GU25 at W8 and W9, however the 110kV UGC will be drilled under the existing bridges at these locations and no impacts are likely to occur. 13 No. old masonry culverts along the Anglesey Road may require replacement during works, these culverts are not considered to be of archaeological importance. Damage to other Previously Unrecorded Sites are not likely to occur due to separation distance, and the monitoring of groundworks within 500m of an RMP or NIAH site, as part of project design for UWF Grid Connection. In relation to the Other Elements, archaeological monitoring of works form part of the project design measures for UWF Related Works and Condition No. 20 of the Grant of Planning 2014 in relation to the Upperchurch Windfarm. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to monitor groundworks and stop works in the affected area in the event of any archaeological features or objects being uncovered during excavation works, and will ensure that any features or objects uncovered will be preserved by record and/or preserved in situ, in consultation with the National Monuments Service and the National Museum of Ireland.
Operational Stage				
Above-ground structures	1, 2, 4	Visibility	Visual Impact	Rationale for Excluding: No likely impact/No cumulative impacts: In relation to the UWF Grid Connection, only the Mountphilips Substation has the potential to cause visual effects and within 2km there are 12 No. sites which would have theoretical visibility of the Substation, however, drone surveys by the authors of Ch.17 Landscape demonstrate that realistically there will be no visibility of the Substation from any of these sites. There will be no intervisibility of the Mountphilips Substation with Upperchurch Windfarm or UWF Related Works. In relation to the UWF Related Works - only the Telecoms Relay Pole has the potential to cause visual effects and 21 No. Previously Unrecorded Sites have theoretical visibility of the relay pole, (1 No. of these is a lime kiln, 4 No. are gravel pits/quarries, 16 No. are

Source(s) of Impacts	Project Element	Pathway(s)	Impacts (Consequences)	Rationale for Excluding (Scoping Out)
				springs/wells), however these sites lack archaeological, cultural or historical significance and it is considered that they are not sensitive to visual effects.
Decommissioning Stage				
Rationale for Excluding: UWF Grid Connection will not be decommissioned. In relation to Upperchurch Windfarm/UWR Related Works, no new groundworks will be required for decommissioning, with any groundworks will be limited to those areas of ground which were previously excavated during the construction stage, therefore there is no potential for effects on Previously Unrecorded Sites.				

16.4.5 Mitigation Measures for Impacts to Previously Unrecorded Sites

Mitigation measures were incorporated into the UWF Grid Connection project design, including the Project Design Measures. No additional mitigation measures are required as **no significant adverse impacts** are concluded by the topic authors as likely to occur to Previously Unrecorded Sites as a consequence of the UWF Grid Connection.

16.4.6 Evaluation of Residual Impacts to Previously Unrecorded Sites

Residual Impacts are the final or intended effects that will occur after mitigation measures have been put into place. No additional mitigation measures are required and thus the Residual Impact is the same as the Impact set out in Impact Evaluation Table sections for Previously Unrecorded Sites above (Section 16.4.4) – i.e. **no significant adverse impacts**.

16.4.7 UWF Grid Connection Environmental Management Plan

The Project Design measures will be implemented by the Project Manager and the main Contractor during the construction stage, under the Environmental Management Plan for the UWF Grid Connection (EMP). The EMP is appended to this EIA Report as Volume D.

The EMP will be an important contract document for the main construction contractor (Contractor) who will be contractually obliged to comply with the EMP. An Environmental Clerk of Works will be appointed, who will be independent of the construction Contractor, and it will be the responsibility of the Environmental Clerk of Works to monitor the compliance of the Contractor with the EMP through liaising with the Construction Site Manager and the Project Manager, monitoring construction works on a daily basis and by carrying out regular audits on EMP compliance. The Environmental Clerk of Works will be resourced to employ a team of environmental specialists including a Site Ecologist, Site Hydrologist and an Invasive Species Specialist.

16.4.8 Summary of Impacts to Previously Unrecorded Sites

A summary of the Impact to Previously Unrecorded Sites is presented in Table 16-28.

Table 16-28: Summary of the impacts to Previously Unrecorded Sites

Impact to Previously Unrecorded Sites:	**Damage to townland boundaries**
Evaluation Impact Table	*Section 16.4.4.1*
Project Life-Cycle Stage	*Construction Stage*
UWF Grid Connection *Direct/indirect impact*	**Imperceptible**
UWF Grid Connection *Cumulative impact*	**No Cumulative Impact**
Element 2: UWF Related Works	Slight
Element 3: UWF Replacement Forestry	No Potential for Impact - Evaluated as Excluded, see Section 16.4.2.2.1
Element 4: Upperchurch Windfarm	Not Significant
Element 5: UWF Other Activities	No Potential for Impact - Evaluated as Excluded, see Section 16.4.2.2.1
Cumulative Impact:	
Whole UWF Project Effect	**Slight**

The greyed out boxes in the above summary table relate to the cumulative information for the Other Elements of the Whole UWF Project, which are included to show the totality of the project.

Note: No cumulative information for Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Previously Unrecorded Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.4.2.2).

16.5 Sensitive Aspect No.4: Unrecorded Subsurface Sites

This Section provides a description and evaluation of the Sensitive Aspect - Unrecorded Subsurface Sites. Unrecorded Subsurface Sites relates to structures or artefacts which are currently undiscovered but which may potentially exist under the ground surface.

16.5.1 BASELINE CHARACTERISTICS of Unrecorded Subsurface Sites

This Section 16.5.1 comprises the identification of the Study Area for direct or indirect effects and a description of the context, character, importance and sensitivity of the Unrecorded Subsurface Sites in the area. Trends or changes in the baseline environment are also identified.

16.5.1.1 STUDY AREA for Unrecorded Subsurface Sites

The study area for Unrecorded Subsurface Sites in relation to the UWF Grid Connection is described in Table 16-29 and illustrated on Figure GC 16.5: UWF Grid Connection Study Area for Unrecorded Subsurface Sites (Volume C3 EIAR Figures).

Table 16-29: UWF Grid Connection Study Area for Unrecorded Subsurface Sites

Study Area for Unrecorded Subsurface Sites	Justification for the Study Area Extents
Footprint of construction works areas where groundworks will take place.	Any previously Unrecorded Subsurface Sites beyond this area will remain unexposed and there cannot be evaluated.

16.5.1.2 Baseline Context and Character of Unrecorded Subsurface Sites in the UWF Grid Connection Study Area

As this type of sensitive cultural heritage receptor is currently undiscovered, neither the context nor the character of any Unrecorded Subsurface Sites, which may potentially exist under the ground surface, can be described in this report. The Slievefelim to Silvermine Mountains upland area is a region with a rich and diverse history of human settlement going back to prehistoric times, with c.680 known monuments, recorded on the Record of Monuments and Places within the broader upland area. While the spread of these monuments date from the Neolithic through to post medieval and modern times, the upland region appears to have been most intensively settled in the late Neolithic, with populations dispersing to the lower slopes during later periods (Grogan 2005, 21).

At Mountphilips Substation site, because the land has been subject to intensive agriculture, it is considered that Unrecorded Subsurface Sites exposed during the course of construction ground works are most likely to involve levelled earthworks, back filled ditches or slot trenches cut directly into the natural subsoil, or areas of large scale burning such as you might find at a Fulacht Fiadh site. There is also the possibility for other site types being exposed, including (but not limited to) artefact scatters, objects such as pottery, stone and bronze axes, foundations of buried structures, burials, and trackways.

Along the 110kV UGC route, outside of the Mountphilips Substation site, the potential for Unrecorded Subsurface Sites being exposed during construction works have more potential to occur along sections of the R503 Regional Road (Anglesey Road) where the 110kV UGC works will occur within the Zone of Notification for GL18 – *Ringfort (rath) in Derryleigh,* GL28 – *Enclosure in Scraggeen and* GL34 – *Mine (copper) in Lackamore*, than at other locations along the 110kV UGC route.

16.5.1.3 Importance of Unrecorded Subsurface Sites

Subsurface features or structures of archaeological significance are subject to protection under the National Monuments Acts (1930-2004).

16.5.1.4 Sensitivity of Unrecorded Subsurface Sites

Unrecorded Subsurface Sites may be completely or partially damaged or destroyed by the manual or mechanical excavation of soil. Because of the lack of upstanding, or above ground, remains these sites are unlikely to be sensitive to any visual impacts with proposed above ground structures.

16.5.1.5 Trends in the Baseline Environment (the 'Do-Nothing' scenario)

It is considered that while it is unlikely that there would be any change to the Unrecorded Subsurface Cultural Heritage sites within the application site, the possibility exists that Unrecorded Subsurface Sites may be uncovered by further agricultural activity or afforestation in the area.

16.5.1.6 Receiving Environment (the Baseline + Trends)

No trends have been identified which are likely to lead to changes to the Unrecorded Subsurface Sites and it is therefore assumed in this report that the baseline environment identified above will be the receiving environment.

16.5.2 CUMULATIVE INFORMATION - Cumulative Projects & Baseline Characteristics

16.5.2.1 Cumulative Evaluation Study Areas

16.5.2.1.1 UWF Grid Connection Cumulative Evaluation Study Area

The UWF Grid Connection was evaluated for cumulative effects with other projects and the study area is set out in the table below.

UWF Grid Connection Cumulative Evaluation Study Area for Unrecorded Subsurface Sites	Justification for the Study Area Extents
Footprint of works areas where groundworks will take place.	Groundworks, and their potential to directly impact Unrecorded Subsurface Sites, are restricted to the immediate footprint of the development area. It is extremely unlikely that Sites beyond this area could be impacted.

The study is illustrated on Figure CE 16.5 UWF Grid Connection Cumulative Evaluation Study Area for Unrecorded Subsurface Sites.

16.5.2.1.2 Whole Project Cumulative Evaluation Study Area

UWF Grid Connection is part of a whole project which comprises the following Other Elements; Element 2: UWF Related Works, Element 3: UWF Replacement Forestry, Element 4: Upperchurch Windfarm (UWF), and Element 5: UWF Other Activities. The Subject Development, UWF Grid Connection is Element 1. All five elements are collectively referred to as the Whole UWF Project in this EIA Report.

The Other Elements must be considered because UWF Grid Connection is part of a whole project. Therefore, the cumulative information and evaluations for the Other Elements of the Whole UWF Project are included in order to present the totality of the project.

A description of these Other Elements is included in this EIA Report at Appendices 5.3, 5.4, 5.5 and 5.6**,** in Volume C4 EIAR Appendices**.** Scoping of these Other Elements is presented in Section 16.5.2.2.1 below.

The Whole Project Cumulative Evaluation Study Area comprises of the UWF Grid Connection Study Area along with the study areas for Other Elements which are described in Table 16-30 and is illustrated on Figure WP 16.5: Whole Project Study Area for Unrecorded Subsurface Sites (Volume C3 EIAR Figures).

Table 16-30: Cumulative Evaluation Study Area for Unrecorded Subsurface Sites

Cumulative Project	Cumulative Study Area Boundary	Justification for Study Area Extent
Element 2: UWF Related Works	Footprint of works areas where groundworks will take place.	Groundworks, and their potential to directly impact Unrecorded Subsurface Sites, are restricted to the immediate footprint of the development area. It is extremely unlikely that Sites beyond this area could be impacted.
Element 3: UWF Replacement Forestry		
Element 4: Upperchurch Windfarm (UWF)		
Element 5: UWF Other Activities		

16.5.2.2 Scoping for Other Projects or Activities & Potential for Impacts

The evaluation of cumulative impacts to Unrecorded Subsurface Sites also considered Other Projects or Activities. A scoping exercise was carried out to determine which projects or activities, if any, have potential to cause cumulative effects to Unrecorded Subsurface Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project and therefore should be brought forward for evaluation in this topic chapter. A brief overview of the Other Projects or Activities and the scoping exercise by the topic authors is included in Appendix 2.1: Scoping of Other Projects or Activities for the Cumulative Evaluations (Section A2.1.4.34).

The results of this scoping exercise are that: it is evaluated that no Other Projects or Activities are likely to cause cumulative effects with either the UWF Grid Connection or the Other Elements of the Whole UWF Project, and therefore no Other Projects or Activities are scoped in for evaluation of cumulative effects to Unrecorded Subsurface Sites.

16.5.2.2.1 Potential for Other Elements or Other Projects to cause Impacts to Unrecorded Subsurface Sites

An evaluation was carried out by the topic authors of the likelihood for the Other Elements of the Whole UWF Project to cause cumulative effects to the Sensitive Aspect Unrecorded Subsurface Sites. The results of this evaluation are included in Table 16-31.

The location of the Other Elements which are included for cumulative evaluation is illustrated on Figure WP 16.5.

Table 16-31: Results of the Evaluation of the Other Elements of the Whole UWF Project

Other Elements of the Whole UWF Project	
Element 2: UWF Related Works	Included for the evaluation of cumulative effects
Element 3: UWF Replacement Forestry	Evaluated as excluded: No likely effect due to: • The UWF Replacement Forestry will comprise the planting by hand of 6ha of agricultural lands to native woodland. Ground works during planting will involve minor, manual turning of the sod which are unlikely to expose any subsurface structures, features or objects of archaeological significance, therefore there is no likelihood of damage occurring to any Unrecorded Subsurface Sites. • In relation to visual effects from the maturing woodland; it is unlikely that a monument will be uncovered during planting works, rather that Unrecorded Subsurface Sites (if any) will are likely to be small artefacts, levelled earthworks or backfilled cuts. These types of archaeology are considered unlikely to be sensitive to visual effects.
Element 4: Upperchurch Windfarm (UWF)	Included for the evaluation of cumulative effects
Element 5: UWF Other Activities	Evaluated as excluded: No potential for effects due to: • No mechanical excavation of soils nor the erection of new structures is associated with the UWF Other Activities, therefore there is no potential for either physical or visual impacts to Unrecorded Subsurface Sites.

16.5.2.3 Cumulative Information: Baseline Characteristics – Context & Character

16.5.2.3.1 Element 2: UWF Related Works

Because of the increased likelihood of Unrecorded Subsurface Sites in the vicinity of known archaeological monuments, archaeological test excavations were carried out 1 No. location along the UWF Related Works construction works areas where construction works will pass within the Zone of Notification for Site 83 – Stone Row (17E173) in Knockcurraghbola Commons. Nothing of archaeological significance was encountered during these test excavations. The test report is included as an appendix in the Revised EIAR for UWF Related Works (see – Reference Documents - Volume F3 Part 3).

16.5.2.3.2 Element 3: UWF Replacement Forestry

Not applicable – Element evaluated as excluded. See Section 16.5.2.2.1

16.5.2.3.3 Element 4: Already Consented Upperchurch Windfarm

The consented Upperchurch Windfarm is not located within close proximity to any known archaeological monuments.

Consideration of the Passage of Time: There has been no changes to Unrecorded Subsurface Sites in the Upperchurch Windfarm area, and the descriptions in the 2013 and 2014 documents remain relevant to the cumulative evaluations in this EIAR. Therefore it is considered that there has been no material changes in the baseline environment.

16.5.2.3.4 Element 5: UWF Other Activities

Not applicable – Element evaluated as excluded. See Section 16.5.2.2.1

16.5.2.3.5 Other Projects or Activities

Not applicable – No Other Projects or Activities were scoped in for evaluation of cumulative effects, see Section 16.5.2.2.

16.5.3 PROJECT DESIGN MEASURES for Unrecorded Subsurface Sites

At the conception of the UWF Grid Connection, the design team evaluated the potential for significant impacts to the environment. Impacts will only take place where three components exist together; (1) the source of the impact (project), (2) the receptor of the impact (sensitive aspect) and (3) a pathway between the source and the sensitive aspect. The objective of mitigation measures is to avoid, prevent or reduce, one of the three components of an impact by choosing an alternative location, alternative design or an alternative process.

Potential or likely significant impacts were avoided, prevented or reduced by integrating mitigation measures into the fundamental design of the development – these are the Project Design Environmental Protection Measures, which are shortened to 'Project Design Measures' in this EIA Report.

The development as evaluated in the EIA Report incorporates the Project Design Measures.

The Project Design Measure outlined in Table 16-32 are relevant to the Environmental Factor, Cultural Heritage, and in particular to the sensitive aspect **Unrecorded Subsurface Sites**.

Table 16-32: UWF Grid Connection Project Design Measures relevant to Unrecorded Subsurface Sites

PD ID	Project Design Environmental Protection Measure (PD)
PD05	At the Mountphilips Substation site, construction traffic will be restricted to the construction works area and tracking across adjacent ground will not be permitted. A speed limit of 25km/hr for all traffic/machinery will be implemented at the Mountphilips Substation site. Outside of Mountphilips Substation site, all construction will be restricted to the paved road surfaces or built surfaces along the 110kV UGC. A speed limit of 50km/hr for all delivery and construction traffic will be implemented on Local Roads ('L' roads).
PD14	All initial groundworks within 500m of an RMP or NIAH site, will be monitored by an archaeologist under license from the National Monuments Service, to archaeologically record and preserve, either in situ or by record, any structures, features or objects of archaeological significance which may be encountered during the works.
PD15	Where excavations occur at culvert replacement locations along the 110kV UGC, and at the 3 No. new watercourse crossing at the Mountphilips Substation site, excavations will be monitored by an appropriately qualified archaeologist under license from the National Monuments Service, the excavated material will be examined for any evidence of archaeological material and metal detected as part of a finds retrieval strategy.

Cumulative Information: Potential or likely significant impacts caused by the Other Elements of the Whole UWF Project were avoided, prevented or reduced by incorporating Project Design Measures into the design of the UWF Related Works and into the consented design of the Upperchurch Windfarm. These Project Design Measures are included in the description of these Elements, and can be found in this EIA Report in Appendices 5.3 and 5.5 in Volume C4: EIAR Appendices.

16.5.4 EVALUATION OF IMPACTS to Unrecorded Subsurface Sites

In this Section, the likely direct and indirect effects of the UWF Grid Connection are identified and evaluated. Then the likely cumulative effects of the UWF Grid Connection together with the Other Elements of the Whole UWF Project are identified and evaluated.

A conceptual site model exercise was carried out to facilitate the identification of source-pathway-receptor links between the project (source) and the sensitive aspect (receptor) - Unrecorded Subsurface Sites.

As a result of the exercise, some impacts were included and some were excluded.

Table 16-33: List of all Impacts included and excluded from the Impact Evaluation Table sections

Impacts Included (Evaluated in the Impact Evaluation Table sections)	***Impacts Excluded (Justification at the end of the Impact Evaluation Table sections)***
Complete or partial destruction (construction stage)	*Visual Impact (operational stage)*
	Decommissioning Stage Effects

The source-pathway-receptor links for the impact included are described in the Impact Evaluation Table in the next section – Section 16.5.4.1.

The source-pathway-receptor links and the rationale for excluded impacts are described in the section directly after the Impact Evaluation Table, in Section 16.5.4.2.

16.5.4.1 Impact Evaluation Table: Complete or partial destruction

Impact Description	
Project Life Cycle Stage:	Construction stage

Impact Source: Initial groundworks during the construction phase.
Cumulative Impact Source: Initial groundworks during the construction phase.
Impact Pathway: excavation of soil

Impact Description: In the event of ground works for the development encountering Unrecorded Subsurface Cultural Heritage Sites, these works could result in the complete or partial destruction of said sites.

Impact Quality: Negative

Evaluation of the Impact of the Subject Development – Complete or partial destruction

Element 1: UWF Grid Connection – direct/indirect impact

Impact Magnitude:
By their nature, the magnitude of the impact of the development on Unrecorded Subsurface Sites cannot be determined at this stage. It is possible that previously unknown archaeological materials could be impacted upon by the UWF Grid Connection works, particularly at the Mountphilips Substation site due to the excavation of grassland and the overlap with Other Recorded Site *GR3 Mount Philips Demesne*; at the townland boundaries at the Mountphilips Substation site entrance (Coole/Freagh - GU51) and along the new access road to the substation (Mountphilips/Coole - GU50); and along the Regional Road R503 where 110kV UGC works will occur within the Zone of Notification for Recorded Legally Protected Sites; *GL18 – Ringfort (rath)* in Derryleigh, *GL28 – Enclosure* in Scraggeen and *GL34 – Mine (copper)* in Lackamore. Unrecorded Subsurface Sites are unlikely to be discovered during excavations for other sections of the 110kV UGC given the location of the 110kV within paved roadways.

Because much of the study area around Mountphilips Substation has been subject to intensive agriculture, it is considered that Unrecorded Subsurface Sites exposed during the course of construction ground works are most likely to involve levelled earthworks, backfilled cuts, and areas of large scale burning or artefact scatters. It is unlikely that any fully intact remains of special archaeological significance will be uncovered.

The design of the development (see Project Design Measures - section 16.5.3) includes a provision for archaeological monitoring of all ground works relating to the construction, within 500m of an RMP or NIAH site. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to archaeologically record and preserve, either *in situ* or *by record*, any structures, features or objects of archaeological significance which may be encountered during the works.

Significance of the Impact: Slight

Rationale for Impact Evaluation:

- The unknown extent of Unrecorded Subsurface Sites.
- The location of 110kV UGC predominately within public roads;
- The dominant land uses in the area, agriculture and forestry and public roads, which will mean that it will be unlikely that any fully intact remains of special archaeological significance will be uncovered.
- The monitoring of all initial groundworks within 500m of an RMP or NIAH site, by an on-site archaeologist, under license.

Element 1: UWF Grid Connection – cumulative impact

Cumulative Impact Magnitude: There is potential for cumulative effects of UWF Grid Connection with UWF Related Works along the L2264-50 and 6188-0 where UWF Grid Connection 110kV UGC works overlap with the UWF Related Works Haul Route Works (H8-H12) along the above listed roads. However the UWF Grid Connection

is within the pavement of the public road whereas UWF Related Works haul route works are in the public road verge or adjacent to the public road and therefore the footprint of the works do not overlap. There is also potential for cumulative effects where UWF Related Works Internal Windfarm Cabling will be constructed over the 110kV UGC (crosses over the 110kV UGC at 2 locations) on the public road, however this is in the context of works taking place in road pavement, and further it is considered that there is no potential for cumulative effects, as any previously Unrecorded Subsurface Sites if present, will only be affected by initial groundworks.

Significance of the Impact: No Cumulative Impact

Rationale for Impact Evaluation:

- Unrecorded subsurface sites can only be impacted upon by initial groundworks and not by subsequent ground-works.

Cumulative Information: Individual Evaluations of Other Elements of the Whole UWF Project

Element 2: UWF Related Works

Impact Magnitude:

By their nature, the magnitude of the impact of the development on Unrecorded Subsurface Sites cannot be determined at this stage. It is possible that previously unknown archaeological material could be impacted upon by the UWF Related Works, particularly given the high number of Cultural Heritage Sites in their environs. Because much of the study area has been subject to intensive agriculture and later forestry planting, it is considered that Unrecorded Subsurface Sites exposed during the course of construction ground works are most likely to involve levelled earthworks, backfilled cuts, and areas of large scale burning or artefact scatters. It is unlikely that any fully intact remains of special archaeological significance will be uncovered.

The design of the development (See UWF Related Works Project Design Measures, Reference Documents Volume F2 Part 2 Section 16.5.3) includes a provision for archaeological monitoring of all ground works relating to the construction. This will allow for an onsite archaeologist, in consultation with the National Monuments Service and the National Museum of Ireland, to archaeologically record and preserve, either *in situ* or *by record*, any structures, features or objects of archaeological significance which may be encountered during the works.

Significance of the Impact: Slight

Rationale for Impact Evaluation:

- The unknown extent of Unrecorded Subsurface Sites, in the context of the extent of Cultural Heritage Sites in the surrounding area
- The dominant land uses in the area, agriculture and forestry, which will mean that it will be unlikely that any fully intact remains of special archaeological significance will be uncovered.
- The monitoring of all groundworks by an on-site archaeologist, under license.

Element 3: UWF Replacement Forestry – *N/A, evaluated as excluded, see Section 16.5.2.1.1*

Element 4: Consented Upperchurch Windfarm

Impact Magnitude: Over the course of the 2013 EIS, it was deemed that known Cultural Heritage Sites would not be directly or indirectly impacted by the permitted development. However, the possibility existed that previously unknown subsurface features associated with these sites it may result the complete or partial destruction of said sites.

Significance of the Impact: Slight

Rationale for Impact Evaluation:

- The Board considered that, subject to compliance with the mitigation measures set out in the Environmental Impact Statement, the development would not have a significant effect on the environment.
- The application of the 2014 Grant of Permission, Condition No. 20, which will protect unknown subsurface ar-chaeology.

Element 5: UWF Other Activities – *N/A, evaluated as excluded, see Section 16.5.2.1.1*

Unrecorded Subsurface Sites

Sensitive Aspect

Evaluation of Other Cumulative Impacts – Complete or partial destruction
Whole UWF Project Effect
Cumulative Impact Magnitude It is considered that there is no potential for cumulative effects, as any unrecorded subsurface sites if present, will only be affected by initial groundworks – i.e. by the UWF Grid Connection works or the UWF Related Works or the Upperchurch Windfarm only. The whole project effect will be in the order of the UWF Grid Connection in the Mountphilips Substation site and along the R503, and in the order of the UWF Related Works in the Upperchurch area.
Significance of the Cumulative Impact: Slight
Rationale for Cumulative Impact Evaluation: • Unrecorded subsurface sites can only be impacted upon by initial groundworks and not by subsequent ground-works.

Note: No cumulative evaluation of Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Unrecorded Subsurface Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.5.2.2).

Topic

Cultural Heritage

16.5.4.2 Description and Rationale for Excluded (scoped out) Impacts

The source-pathway-receptor links and the rationale for impacts excluded from the Impact Evaluation Table sections are described in Table 16-34 below.

Table 16-34: Description and Rationale for Excluded Impacts to Unrecorded Subsurface Sites

Key: 1: UWF Grid Connection; 2: UWF Related Works; 3: UWF Replacement Forestry; 4: Upperchurch Windfarm; 5: UWF Other Activities

Source(s) of Impacts	Project Element	Pathway(s)	Impacts (Consequences)	Rationale for Excluding (Scoping Out)
Operational Stage				
Above-ground structures	1, 2, 4	Visibility	Visual Impact	Rationale for Excluding: No likely Impact. It is unlikely that a monument will be uncovered during construction works, rather that small artefacts, levelled earthworks or backfilled cuts are likely to be uncovered. These types of archaeology are considered unlikely to be sensitive to visual effects.
Decommissioning Stage				
Rationale for Excluding: UWF Grid Connection will not be decommissioned, therefore there is no potential for effects. In relation to Upperchurch Windfarm/UWR Related Works, no new groundworks will be required for decommissioning, with any groundworks will be limited to those areas of ground which were previously excavated during the construction stage, therefore there is no potential for effects on Unrecorded Subsurface Sites.				

16.5.5 Mitigation Measures for Impacts to Unrecorded Subsurface Sites

Mitigation measures were incorporated into the UWF Grid Connection project design, including the Project Design Measures. No additional mitigation measures are required as **no significant adverse impacts** are concluded by the topic authors as likely to occur to Unrecorded Subsurface Sites as a consequence of the UWF Grid Connection.

16.5.6 Evaluation of Residual Impacts to Unrecorded Subsurface Sites

Residual Impacts are the final or intended effects that will occur after mitigation measures have been put into place. No additional mitigation measures are required and thus the Residual Impact is the same as the Impact set out in Impact Evaluation Table sections for Unrecorded Subsurface Sites above (Section 16.5.4) – i.e. **Slight impacts**.

16.5.7 UWF Grid Connection Environmental Management Plan

The Project Design measures will be implemented by the Project Manager and the main Contractor during the construction stage, under the Environmental Management Plan for the UWF Grid Connection (EMP). The EMP is appended to this EIA Report as Volume D.

The EMP will be an important contract document for the main construction contractor (Contractor) who will be contractually obliged to comply with the EMP. An Environmental Clerk of Works will be appointed, who will be independent of the construction Contractor, and it will be the responsibility of the Environmental Clerk of Works to monitor the compliance of the Contractor with the EMP through liaising with the Construction Site Manager and the Project Manager, monitoring construction works on a daily basis and by carrying out regular audits on EMP compliance. The Environmental Clerk of Works will be resourced to employ a team of environmental specialists including a Site Ecologist, Site Hydrologist and an Invasive Species Specialist.

16.5.8 Summary of Impacts to Unrecorded Subsurface Sites

A summary of the Impact to Unrecorded Subsurface Sites is presented in Table 16-35.

Table 16-35: Summary of the impacts to Unrecorded Subsurface Sites

Impact to Unrecorded Subsurface Sites:	**Complete or partial destruction**
Evaluation Impact Table	*Section 16.5.4.1*
Project Life-Cycle Stage	*Construction*
UWF Grid Connection Impact	**Slight**
UWF Grid Connection *Cumulative impact*	**No Cumulative Impact**
Element 2: UWF Related Works	Slight
Element 3: UWF Replacement Forestry	No Potential for Impact - Evaluated as Excluded, see Section 16.5.2.2.1
Element 4: Upperchurch Windfarm	Slight
Element 5: UWF Other Activities	No Potential for Impact - Evaluated as Excluded, see Section 16.5.2.2.1
Cumulative Impact:	
Whole UWF Project Effect	**Slight**

The greyed out boxes in the above summary table relate to the cumulative information for the Other Elements of the Whole UWF Project, which are included to show the totality of the project.

Note: No cumulative information for Other Projects or Activities is included in the table above, because no Other Projects or Activities were evaluated as having potential to cause cumulative effects to Unrecorded Subsurface Sites with either the UWF Grid Connection or the Other Elements of the Whole UWF Project (see Section 16.5.2.2).

Unrecorded Subsurface Sites

Sensitive Aspect

Topic

Cultural Heritage

16.6 Reference List

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Topic: **Cultural Heritage**