# TECHNICAL APPENDIX 3: ARCHAEOLOGY & ARCHITECTURAL HERITAGE IMPACT ASSESSMENT

Colehill 110kV Substation and grid route

20/11/2025

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| Neo Environmental Ltd | |
|---|---|
| **Head Office - Glasgow:**<br>Wright Business Centre,<br>1 Lonmay Road,<br>Glasgow<br>G33 4EL<br>T 0141 773 6262<br>E: info@neo-environmental.co.uk | **Bristol Office**<br>Spaces 8th Floor<br>The Programme Building<br>Bristol<br>BS1 2NB<br>T: 01174 571 610<br>E: info@neo-environmental.ie |
| **Warrington Office:**<br>Lakeview 600, Lakeside Drive<br>Centre Park Square<br>Warrington<br>WA1 1RW<br>T: 01925 661 716<br>E: info@neo-environmental.co.uk | **Rugby Office:**<br>Valiant Suites,<br>Lumonics House, Valley Drive,<br>Swift Valley, Rugby<br>Warwickshire CV21 1TQ<br>T: 01788 297012<br>E: info@neo-environmental.co.uk |
| **Ireland Office:**<br>C/O Origin Enterprises PLC,<br>4-6 Riverwalk,<br>Citywest Business Campus<br>Dublin 24, D24 DCW0<br>T: 00 353 (1) 5634900<br>E: info@neo-environmental.ie | **Northern Ireland Office:**<br>83-85 Bridge Street<br>Ballymena,<br>Co. Antrim<br>BT43 5EN<br>T: 0282 565 04 13<br>E: info@neo-environmental.co.uk |

**Prepared For:**

Renewable Energy Systems (RES) Ltd

**Prepared By:**

Michael Briggs BSc (Hons) MSc ACIfA MIAI

| | Name | Date |
|---|---|---|
| Edited By: | Paul Neary | 20/11/2025 |
| Checked By: | Michael Briggs | 20/11/2025 |
| | **Name** | **Signature** |
| Approved By | Paul Neary | |

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# EXECUTIVE SUMMARY

3.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd on behalf of Ballyteige Solar Limited to undertake an Archaeology & Architectural Heritage Impact Assessment for a Strategic Infrastructure Development Application for a new 110kV Substation and grid route to connect into the existing Thornsberry Substation.

3.2. The desk-based assessment was conducted to ascertain all historical and archaeological information relevant to the Proposed development Site and the local area. All types of heritage assets were considered and assessed within a 2km study zone around the Proposed Development, including grid route. The size of this study zone was selected to ensure that comprehensive and informative data was collated to characterise the direct and indirect effects that the Proposed Development may have on historical and archaeological assets within the local area. Baseline information was also obtained through a site walkover survey, map regression analysis, placenames analysis, aerial photography and consultation with relevant records and databases.

3.3. There are no recorded sites within the RMP, RPS and NIAH that are within or adjacent to the Proposed Substation Site that could be physically impacted by the Proposed Development. In addition, no features of potential archaeological significance were identified within the site during the investigations, including the baseline analysis and site walkover survey. The only internal feature highlighted from the analysis was the linear line of a former drainage channel depicted on the OSI 6" historic map, which is not considered to be of archaeological importance and not sensitive to direct impacts. As such, direct effects upon known archaeological and heritage assets are anticipated to be Negligible as a result of the proposed substation, track and interconnection cables and **no specific mitigation measures will be required for the protection or recording of any known remains**. In addition, while the grid route is proposed in close proximity to recorded historic structures, such impacts are expected to be sufficiently mitigated by design.

3.4. Due to the limited archaeological potential of the Proposed Substation Site, it is recommended that no specific further **pre-determination** works would be necessary in relation to archaeology and heritage. Nonetheless, due to the potential for surviving hitherto-unknown remains, **it is recommended that as a minimum, all groundworks associated with the preparation and construction of the substation be monitored by a qualified archaeologist during the construction stage**. The implementation of an appropriate programme of archaeological works, as managed by a qualified archaeologist, would ensure that measures are in place to facilitate the preservation of hitherto-unknown sub-surface remains present within the Proposed Substation Site, either by record (including the potential for further excavation/fieldwork) or *in-situ*, as appropriate. Any required archaeological work is at the discretion of the NMS and Offaly County Council.

3.5. Indirect effects upon the surrounding heritage assets have been assessed as overall **Low** in the worst case. Therefore, **no specific mitigation is considered to be required for the reduction of any visual impacts upon heritage assets**.

# INTRODUCTION

## Background

3.1. Neo Environmental Ltd has been appointed by Renewable Energy Systems on behalf of Ballyteige Solar Limited (the "Applicant") to undertake an Archaeology and Architectural Heritage Impact Assessment (AAHIA) for a Strategic Infrastructure Development ("SID") Application for a new 110kV Substation ("Colehill 110kV Substation") and grid connection to the existing Thornsberry 110kV substation.

## Development Description

3.2. "The Proposed Development" comprises of a 110kV substation, access road, interconnection cables and grid route. The Proposed Development is to facilitate the connection of Ballyteige (PA Ref: 2198) and Derrygrogan (PA Ref: 22378 and ABP 318041-23) solar farms to the national grid. The method of connection to the national grid for the new substation will be a 110kV tail-fed connection into the existing Thornsberry Substation.

3.3. The Proposed Development will consist of:

- 1No. substation compound comprising of No.3 work areas with CCTV and associated drainage which will be enclosed by 2.6m high palisade fencing and gates:
    - 1No. Eirgrid control building, 110kV bay arrangements, 4No. lightning poles, compound road,
    - Crane hardstand, 2No. transformers and 2. No auxiliary transformers, 110kV electrical equipment, back up generator,
    - 2No. Independent Power Purchaser (IPP) control buildings and compound including toilet, 2No. grid code compliance equipment, 2No. harmonic filters, car parking and telecoms pole),
- Property boundary fencing;
- Access tracks (upgraded existing and new);
- Temporary construction compound and temporary access track,
- Temporary and permanent road re-alignment of a section of O of Wood local road;
- c.7.5km of underground 110kV cabling with joint bays, over and under watercourse crossing and a potential horizontal directional drill on access track and local roads;

- c.610m of medium voltage underground interconnection cable with associated horizontal directional drill.

3.4. Please see **Figure 103** in **Volume 2** for a layout of the Proposed Development.

## Site Description

3.5. The Proposed Development is situated within the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan, Co. Offaly.

3.6. The Colehhill 110kV Substation is proposed to be located in one relatively flat agriculture field. The proposed 7.5km grid route will run in a northeast direction from the proposed Colehill 110kV substation to the existing ESB Thornsberry 110kV substation via private land and local roads. Interconnection cables from the eastern sections of Derrygrogan Solar Farm will be installed via horizontal directional drilling on a section of an agricultural field underneath the dry canal into the proposed access and track of Colehill 110kV Substation.

3.7. The Proposed Development lies at an elevation of c. 71.7 to 77.8m AOD and covers a total area of c. 11.2 hectares. The approximate Irish Grid Reference points (ITM) of the proposed Colehill 110kV substation are X 639234 and Y 727175. Access to the proposed substation will be from the Wood of O road to the east of the Substation "Proposed Substation Site" which is the same entrance point for the consented Ballyteige Solar Farm (PA Ref: 2198).

3.8. The grid route and substation boundaries are approximately 250m and 5.8km northeast from Tullamore Town.

## Scope of the Assessment

3.9. The assessment has been produced to evaluate the cultural heritage assets and archaeological remains relevant to the Proposed Substation Site. A search of heritage assets has been carried out within a 2km study zone around the outer boundaries of the Proposed Development, including:

- World Heritage Sites
- National Monuments in State Care (NMSCs);
- Historic Gardens and Designed Landscapes (HGDLs);
- Historic buildings from the Record of Protected Structures (RPS) and the National Inventory of Architectural Heritage (NIAH);
- Architectural Conservation Areas (ACAs); and
- Sites within the Record of Monuments and Places (RMP).

3.10. This approach is in line with previous similar assessments produced by Neo Environmental for similar developments. This study zone allows assets of potentially national significance to be appropriately considered for indirect impacts, both on the assets themselves and their settings. Where appropriate, sites of exceptional value or sensitivity outside the study zone have also been assessed.

3.11. The aims of the assessment are as follows:

- To identify all known heritage assets within the study zone based on all available public resources;
- To identify the archaeological potential of the Proposed Development;
- To determine what if any level of recording will be required for any extant remains;
- To assess the significance of any direct or indirect effect of the Proposed Development on cultural heritage assets and their settings and potential archaeological remains within the study zone, from construction through to decommissioning;
- To identify mitigation measures where possible and aid in the design process to reduce the potential impacts of the proposed scheme;
- To provide recommendations for any further archaeological/heritage assessment work that should be undertaken as part of the Proposed Development.

3.12. The report is supported by the following Figures and Technical Appendices:

- Appendix 3A: Figures
    - Figure 3.1 – Heritage Assets within 2km
    - Figure 3.2 – OSI 6” Historic Map (1829 – 1842)
    - Figure 3.3 – OSI 25” Historic Map (1897 – 1913)
    - Figure 3.4 – Heritage Assets near Indicative Grid Route
- Appendix 3B: Tables
- Appendix 3C: Plates

## Statement of Authority

3.13. The assessment has been conducted by registered archaeologists with the Chartered Institute for Archaeologists (CIfA), of Associate (ACIfA) level or above and/or members of the Institute of Archaeologists of Ireland (IAI). The assessment has been conducted in accordance with the

appropriate professional guidance outlined in the Codes of Professional Conduct, Institute of Archaeologists of Ireland (adopted April 2006)[1].

3.14. Michael Briggs BSc (Hons) MSc ACIfA MIAI was the primary author of this assessment. He has undertaken a large number of cultural heritage and archaeological impact assessments for developments across the UK and Ireland, with a particular focus on renewable energy projects throughout the Republic of Ireland and Northern Ireland. He has over ten years of professional experience, including assessments from the initial stages of feasibility and heritage impacts through to complete programmes of archaeological works and discharge of conditions.

3.15. Paula Slaughter BA BSc (Hons) MSc undertook the site inspection and associated site visit report for this assessment. She is an experienced licence holder with over 19 years of experience within both Ireland and the UK, including fieldwork of all types as well as extensive management experience for numerous projects in the residential, commercial and renewable energy sectors.

Paul Neary BA H.Dip MA MSc MIEnvSc MIAI ACIFA CEnv was the primary editor and had the final sign-off on the report. Paul is dual-qualified as a Chartered Environmentalist and archaeologist. Paul has over 16 years of archaeology and heritage experience, the majority of which relates to Ireland. Paul has worked on large road projects, EIA developments and energy projects across Ireland and the UK. He is licensed to direct archaeology work in the Republic of Ireland and has also held archaeology director licenses in Northern Ireland.

[1] IAI (2006) *IAI Code of Professional Conduct*. IAI

# LEGISLATION AND PLANNING POLICY CONTEXT

## Planning and Development Act 2024

3.16. Part VIII of the Planning and Development Act 2024 outlines the statutory framework for the protection of Ireland's architectural and archaeological heritage through the planning system. It consolidates and updates the approach established under the 2000 Act and introduces refined obligations on planning authorities for both individual structures and broader historic environments.

### Protected Structures

*"A planning authority shall include in its development plan a record of protected structures, which shall contain every structure or part of a structure which is, in the opinion of the planning authority, of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest."*[2]

3.17. The protection of these assets is therefore achieved through the maintenance of a Record of Protected Structures (RPS) by each planning authority. The Act further confirms that any existing RPS compiled under the 2000 Act "shall continue in force"[3]. Protected structures encompass a broad spectrum of buildings and sites and may vary significantly in terms of their sensitivity to development. As such, assets identified within the RPS will be assessed based on their heritage value and sensitivity to potential direct and indirect effects from the Proposed Development.

### Architectural Conservation Areas

*"a development plan shall include an objective to preserve the character of a place, area, group of structures or townscape, taking account of building lines and heights," where such places are "of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or [that] contribute to the appreciation of protected structures"*[4].

3.18. These areas are designated by the planning authority to protect and manage clusters of heritage assets and their broader settings. While the primary aim of an ACA is to preserve its overall character, certain developments may result in indirect impacts particularly visual or contextual that must be considered in planning assessments. The local planning authority therefore also designates Architectural Conservation Areas (ACAs) where concentrated or important areas of heritage area present. As such, these assets will also be assessed in

[2] Planning and Development Act 2024, Section 306

[3] Ibid., Section 306(4)

[4] Ibid., Section 331(1)(a)–(b)

addition to the heritage assets it contains. While the purpose of such areas is primarily to protect the architecture and character of the immediate area, indirect impacts can sometimes cause harm to an ACA.

### Archaeological and Natural Heritage

3.19. In addition to architectural heritage, the 2024 Act strengthens the statutory framework for archaeological and natural heritage protection. Section 50 mandates that planning authorities "prepare a strategy for the conservation, protection, management and improvement of the natural, archaeological and built heritage" within their areas[5]. Under Section 87, authorities may attach planning conditions to protect features of archaeological or historical interest, including "excavation or recording of places, caves, sites, features, wrecks or objects of archaeological, geological, historical, scientific or ecological interest"[6]. Section 183 further requires that proposals likely to affect legally protected monuments be considered during the planning process[7]. Special planning control schemes may also incorporate objectives for the protection of archaeological and architectural heritage under Section 335[8].

## Project Ireland 2040

3.20. Project Ireland 2040 was adopted on 29th May 2018 as the joint publication of two main documents; the National Planning Framework and the National Development Plan. In their own words, these documents align their *"investment strategy with our strategic planning documents to, for the first time in the history of our State, create a unified and coherent plan for the country"*. Project Ireland 2040 therefore offers an overall strategy document for development within Ireland but does not contain any specific policies relating to archaeology or heritage within development management.

## Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023

3.21. The Historic and Archaeological Heritage and Miscellaneous Provisions Act[9] was signed into law on October 13th 2023, with the intention of superseding the National Monuments Acts 1930 to 2014.

3.22. Measures laid out within the document then subsequently came into effect on 31st May 2024, with such measures in place to allow for the creation and maintenance of databases for archaeological sites, architectural heritage and historic wrecks. As part of this, plans are

[5] Ibid., Section 50(1)

[6] Ibid., Section 87(1)(l)

[7] Ibid., Section 183

[8] Ibid., Section 335(2)(b)

[9] Department for Housing, Local Government and Heritage (2023) *Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023*. DHLGH: Dublin.

included for the establishment of a new 'Register of Monuments' to incorporate and supersede the existing Record of Monuments and Places (RMP). However, as this has not been created at the time of this assessment, the RMP database and the additional subsets of National Monuments under ownership or guardianship of the Minster for Housing, Local Government and Heritage, or the relevant county council, will continue to be consulted and referred to.

## Heritage Act 1995

3.23. The Heritage Act[10] seeks to promote the profile of both archaeological and architectural resources within Ireland. The Heritage Council was established in order to help achieve this and, as required by Section 2 of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999, the DAHG subsequently established the National Inventory of Architectural Heritage (NIAH) in order to undertake a nationwide survey of the Irish architectural heritage. This survey provides a comprehensive overview of the architectural resource within Ireland and is still currently ongoing. The Act also contains the following definitions within Section 2:

### Architectural Heritage

*"all structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents, and, without prejudice to the generality of the foregoing, includes railways and related buildings and structures and any place comprising the remains or traces of any such railway, building or structure"*

### Heritage Building

*"any building, or part thereof, which is of significance because of its intrinsic architectural or artistic quality or its setting or because of its association with the commercial, cultural, economic, industrial, military, political, social or religious history of the place where it is situated or of the country or generally, and includes the amenities of any such building"*

### Heritage Gardens and Parks

*"areas of natural heritage, and gardens and parks whose plant collections, design, design features, buildings, setting, style or association are of significant scientific, botanical, aesthetic or historical interest or which illustrate some aspect of the development of gardening or of gardens and parks"*

[10] OAG (1995) Heritage Act, in *Irish Statute Book*. Dublin: Stationery Office.

### Monument

*"includes the following, whether above or below the surface of the ground or the water and whether affixed or not affixed to the ground:*

*(a) Any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections,*

*(b) Any cave, stone or other natural product, whether or not forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position,*

*(c) Any, or any part of any, prehistoric or ancient –*

*(i) Tomb, grave or burial deposit, or*

*(ii) Ritual, industrial or habitation site, and*

*(d) Any place comprising the remains or traces of any such building, structure or erection, any such cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site, situated on land or in the territorial waters of the State, but does not include any building, or part of any building, that is habitually used for ecclesiastical purposes."*

## Framework and Principles for the Protection of the Archaeological Heritage

3.24. While the international and national legislation details the definitions and requirements for protection of archaeology and cultural heritage, the specifics of this protection is laid out in Part III of the Framework and Principles for the Protection of the Archaeological Heritage[11] document.

### Archaeological Assessment

*"The first option in all circumstances must be non-destructive investigation and study. Non-destructive techniques should wherever possible be used instead of destructive ones." (Section 3.2(b))*

*"Where it is considered that a Proposed Development may (due to its location, size, or nature) have archaeological implications, then an archaeological assessment should be carried out." (Section 3.6.2)*

[11] Department of Arts, Heritage and the Gaeltacht (DAHG) (1999) *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin: Stationery Office.

*"It is always essential that the report on archaeological assessment contain an archaeological impact statement describing the possible direct or in-direct effects of the Proposed Development on elements of the archaeological heritage." (Section 3.6.4)*

3.25. This impact assessment constitutes a non-destructive investigation into the possible direct and indirect impacts of the Proposed Development. A site visit will be undertaken as part of the archaeological assessment within this report. This will provide considerably more information on any existing archaeological assets present within the site boundary and inform any further assessment or mitigation strategy.

## Mitigation Requirements

3.26. If significant possible direct impacts are identified, mitigation in the form of further archaeological works may be required. In this case such works:

*"should only be carried out if it is a necessary and appropriate follow-on to the results of suitable non-destructive methods in order to secure the further progression of archaeological research, or otherwise where there is no practicable or archaeologically acceptable alternative." (Section 3.2)*

*"Whenever the archaeological heritage is affected, or proposed to be affected, by development the approach to be followed must be preservation in-situ or preservation by record through archaeological excavation and recording." (Section 3.3)*

*"There should always be a presumption in favour of avoiding developmental impacts on the archaeological heritage. Preservation in-situ must always be the first option to be considered rather than preservation by record in order to allow development to proceed, and preservation in-situ must also be presumed to be the preferred option." (Section 3.4)*

*"Where archaeological sites or monuments (or portions of such) are to be removed due to development then it is essential that the approach of preservation by record be applied." (Section 3.5)*

3.27. Therefore in the case of direct impacts upon any known or unknown archaeological resource, preservation in situ is the preferred option for mitigation, through the use of buffer zones or non-penetrative construction methods for example. Where this is deemed unviable, preservation by record must be implemented in agreement with the relevant authorities and IAI standards. Such methods may involve test excavations (Section 3.6.5(b)) where an archaeological site or monument, or sub-surface features, are thought to be directly impacted by the Proposed Development. Otherwise a system of archaeological monitoring may be sufficient where *"only slight grounds for believing that the particular location contains archaeological deposits or features" (Section 3.7.2(i)).*

## National Cultural Institutions Act (1997)

3.28. The National Cultural Institutions Act (1997)[12] does not provide any specific policies or guidance on protection of heritage and archaeology, but contains legislation on several aspects of cultural heritage, including *"Indemnities in Respect of Certain Cultural Objects"*, *"Provisions Relating to Heritage Collections"* and *"Acquisition of Certain Cultural Objects"*. The Act also establishes the bases for the National Museum, Library and Gallery of Ireland. As such, the Act does not apply directly to this assessment but provides context for other legislative and policy documents.

## Architectural Heritage (National Inventory) and National Monuments Act (1999)

3.29. The Architectural Heritage (National Inventory) and National Monuments Act (1999)[13] is another legislative document that details the legal maintenance and protection of heritage as well as the punitive measures for any violations. As such, this Act also provides context for other legislative and policy documents. However, the Act provides a definition of 'architectural heritage' as:

*"all –*

*(a) structures and buildings together with their settings and attendant grounds, fixtures and fittings,*

*(b) groups of such structures and buildings, and*

*(c) sites.*

*Which are of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest" (Section 1).*

## Best Practice Planning Guidance Report for Large Scale Solar Energy Development in Ireland[14]

3.30. This guidance document was produced in November 2023 as a set of policy and guidance recommendations published by the Irish Solar Energy Association (ISEA) to assist potential developers, stakeholders and Local Authorities in site selection, preparation of applications for planning consent and considerations relating to construction, associated infrastructure and operational procedures from a planning and environmental perspective. This includes sections on archaeology and heritage which detail how to set out policies for their protection

[12] OAG (1997) National Cultural Institutions Act, in *Irish Statute Book*. Dublin: Stationery Office.

[13] OAG (1999) Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act, in *Irish Statute Book*. Dublin: Stationery Office.

[14] Fehily Timoney (2023) *Best Practice Guidance Report on Solar Energy Development for Applicants and Planning Authorities*. Dublin: ISEA

and development management. Section 3.4.12 regarding 'Cultural Heritage and Archaeology' states:

*"A high-level review should be undertaken of all known archaeological, architectural and other cultural heritage sites which may be located within or affected by a proposed development. This can typically be undertaken by a suitably qualified archaeologist either as a desktop study or site-based constraints study. Potential vulnerable receptors that should be identified include:*

- *UNESCO World Heritage Properties and sites included on the World Heritage Tentative List;*
- *National Monuments, Recorded Monuments and other known archaeological sites included within the Sites and Monuments Record (SMR) maintained by the National Monuments Service;*
- *Wrecks and /or other underwater cultural heritage that may be affected by the development (e.g. impact on watercourses);*
- *Structures and Gardens listed in the National Inventory of Architectural Heritage (NIAH)*

*Record of Protected Structures (RPS) designated by each Local Authority in the relevant County Development Plan"*

3.31. Section 3.4.12 regarding 'Archaeology/Cultural Heritage' states:

*"Any applicant or developer should consider a suitably qualified archaeologist as part of their design team where appropriate to provide on-going advice as well as consulting with the relevant Local Authority and the NMS and Architectural and Built Heritage Unit (ABHU) of the Department (DAU) where required in areas of archaeological potential.*

*The location and design of solar farms should be informed and influenced by archaeological assessments and constraint studies to avoid impacts to known archaeological resources and features. Ideally proposed solar farms should be sited so as to avoid impacts to known archaeological sites (which could include visual impact) and take into account likely impacts on potential archaeological sites within the footprint of a solar farm development site.*

*Potential solar farm sites should also have regard to tourism and heritage assets, often in relation to visual impact and proximity to such sites. It is recommended that any developer/applicant review any designated or protected sites within a Local Authority Development Plan or National Designation or Policy".*

## Offaly County Development Plan (2021)

3.32. The Offaly County Development Plan (LDP) 2021 – 2027 was adopted on the 10th September 2021 and presents an extensive list of policies regarding development management within

the boundary of the OCC. Of these policies, BHP-01 to BHP-47 relate to built heritage and archaeology, with the following specific areas covered:

- BHP-01 – BHP-11: Protected Structures
- BHP-12 – BHP-14: Architectural Conservation Areas
- BHP-15 – BHP-21: Vernacular Buildings
- BHP-22 – BHP-27: Industrial Heritage
- BHP-28 – BHP-31: Country Houses, Gardens and Demesnes
- BHP-32: Protected Species
- BHP-33 – BHP-40: Archaeological Heritage
- BHP-41 – BHP-43: Monastic Sites
- BHP-44: Mass Rocks and Holy Wells
- BHP-45: Historic Military Fortifications and Castle Sites
- BHP-46: Funding
- BHP-47: Community Archaeology

3.33. This impact assessment will therefore consider all of the classes of archaeological and architectural heritage assets defined above in order to ensure that direct and indirect impacts upon them as a result of the Proposed Development are properly assessed, in compliance with policies and objectives at international, national and local levels.

# ASSESSMENT METHODOLOGY

## Desk Based Assessment

3.34. The desk-based assessment was conducted to ascertain all historical and archaeological information relevant to the Proposed development and the local area. All types of heritage assets were considered and assessed within a 2km study zone of the Proposed Substation Site. The size of this study zone was selected to ensure that comprehensive and informative data was collated to characterise the direct and indirect effects that the Proposed Development may have on historical and archaeological assets within the local area. The study area was drawn around the areas where development directly associated with the substation (including the entrance and interconnection HDD area) is proposed. In addition, a 100m study zone was utilised around the proposed grid route and connection cables (see **Figure 3.4: Appendix 3A**) to determine the possibility of direct impacts upon heritage assets.

3.35. Due to the nature of the records, some degree of overlap was possible, and some assets may have been repeated. However, where historic structures are recorded within both the RPS and the NIAH, efforts have been made to reduce duplication. Buildings of historic interest that are recorded within the NIAH are treated as having the same level of protection as those recorded as Protected Structures for the purposes of this assessment.

3.36. Historical databases and various archives were consulted to identify the designated assets and undertake the DBA. These assets were imported into ArcGIS Pro as shapefiles in order to determine their locations relative to the Proposed Development and produce the figures supporting this assessment. The main sources which were consulted include the:

- Record of Monuments and Places (RMP) held by the National Monuments Service (NMS);
- Sites and Monuments Record (SMR);
- National Inventory of Architectural Heritage (NIAH);
- Record of Protected Structures (RPS);
- Archaeological Survey of Ireland (ASI);
- Database of Historic Gardens and Designed Landscapes (HGDL);
- Database of Irish Excavation Reports[15];

[15] *http://www.excavations.ie/*

- Historic Maps;
- Aerial imagery via Google Earth, Bing Maps and ArcGIS Pro global mapping;
- Cambridge University Collection of Aerial Photography;
- National Collection of Aerial Photography;
- http://www.britainfromabove.org.uk/;
- Open Topographic Data Viewer (LIDAR) at https://dcenr.maps.arcgis.com/apps/webappviewer/; and
- Placenames Database of Ireland.

## Map Regression Analysis

3.37. Analysis of historic maps can reveal the changes in landuse and field boundaries in the area and can highlight potential areas of archaeological interest that may have been lost in the subsequent years. Relevant maps were consulted to undertake this analysis as part of the desk-based assessment and site walkover survey.

## Aerial Photography and Placename Assessments

3.38. To identify potential archaeological features within the Proposed Substation Site that are not recorded within the relevant databases, aerial photography of the land was examined in order to identify any cropmarks or markings within the Proposed Substation Site that may be indicative of previously unknown features.

3.39. Similarly, a placename analysis of the baronies, townlands and parishes containing the land was undertaken as this can often determine the historical landuse associated with the Proposed Substation Site even when other evidence of this usage has been lost.

## Assessment of Direct Effects

3.40. Potential direct effects during the construction phase are considered as physical disturbance of known or associated archaeological remains. These impacts can be caused through the construction processes within the footprint of the Development, including ancillary works such as access tracks. Direct impacts can affect both above ground and subsurface remains, which will both be considered within this assessment. The presence and character of any existing archaeological features will be identified within the site boundary, and the archaeological potential of the site assessed through a desk-based assessment of the surrounding archaeological resource and landscape. The significance of any impacts will be

determined by considering the construction methodology within the Proposed Substation Site and to what extent this would disturb any sub-surface remains.

## Assessment of Indirect Effects

3.41. The assets that were identified through the sources previously listed were assessed for their significance and sensitivity of their settings. The magnitude of the visual impacts upon these assets was determined by considering the views and intervisibility shared with the Proposed Development, as well as the nature, character, date, extent, setting and surviving remains of the feature where relevant. Indirect effects were then assigned using this information on the following scale:

- Major
- Major to moderate
- Moderate
- Moderate to low
- Low
- Low to negligible
- Negligible

3.42. Indirect effects of 'moderate' or above are considered significant and appropriate mitigation measures have been recommended where appropriate to lower the potential impact.

## Visual Impact Assessment

3.43. A Zone of Theoretical Visibility (ZTV) was produced to identify sites with a greater potential for being indirectly impacted by the Proposed Development. The ZTV has been overlaid on the heritage assets within the study zones, to identify those that will potentially be visually impacted by the Proposed Development during the operational phase.

3.44. Digital Terrain Modelling sourced from digital height data derived from Ordnance Survey Ireland, with the viewer height set at 2m high was used to calculate the ZTV. The produced ZTV was 'bare earth' and therefore did not account for any elements in the landscape such as trees, hedgerows, walls or buildings that may help screen views, nor account for the influences of the weather upon any views.

## Site Visit

3.45. A walkover survey was conducted at the Proposed Substation Site on 4th June 2020 as part of a survey of the wider Ballyteige solar farm proposal, while a walkover survey of the

interconnection HDD area was conducted in June 2021 as part of the adjacent Derrygrogan Solar Farm. The primary aim of the surveys were to identify any potential archaeological or historical features within the Proposed development Site that are not recorded. The land and fields within the Application Site were documented photographically along with any possible features identified. The results of the surveys also considered available information on the known designated and non-designated sites within and close to the Proposed Development Site.

## Assessment Limitations

3.46. The consulted sources contain records of known archaeological and historic features. The record is not an exhaustive record of all surviving historic environment features and does not preclude the possible existence of archaeological remains of significance within the study zone, which are at present unknown or have been added to the records recently. It was assumed that official data held by public bodies was accurate and up-to-date. However, the national datasets were only partially available during this assessment, including the locations, names and references of the RMP sites but many of which did not have their descriptions available.

## The Importance of Setting

3.47. Setting can be important to the way in which historic assets or places are understood, appreciated and experienced.

3.48. Where development is proposed it is important to identify and define the setting of the heritage asset and to assess how development might impact upon this resource. Setting often extends beyond the property boundary, or 'curtilage', of an individual historic asset into a broader landscape context. Less tangible elements can also be important in understanding the setting. These may include function, sensory perceptions or the historical, artistic, literary and scenic associations of places or landscapes. In the light of this guidance, development proposals should seek to avoid or mitigate detrimental impacts on the settings of historic assets.

# BASELINE CHARACTERISATION

3.49. The following section outlines the historical and archaeological background within the extent of the study zones and the local area. This provides a clear depiction of the context and significance of the heritage assets that could potentially be impacted by the Proposed Development. The report outlines an assessment of the direct and indirect impacts of the Proposed Development and proposed mitigation measures. The potential for disturbing any remains within the footprint of the Proposed Development has been assessed and recommendations produced for any further investigative work.

## Archaeological Period Classifications

3.50. The period classifications below provide chronological context for the archaeological assets which are discussed as part of this report.

- Mesolithic (8000BC – 4500BC)
- Neolithic (4500BC – 2500BC)
- Bronze Age (2500BC – 500BC)
- Iron Age (500BC – AD400)
- Early Christian (AD400 – AD800)
- Medieval (AD800 - AD1535)
- Post Medieval & Modern (AD1535 onwards)

## Archaeological and Cultural Heritage Assets

3.51. The full list of assets identified within their respective study zones is presented within **Table 1: Appendix 3B**. A total of five historic buildings from the NIAH/RPS and eight sites within the RMP were identified within the 2km study zone (**Figure 3.1 & 3.4: Appendix 3A**). These assets have therefore been assessed for potential indirect effects within this report. However, no NMSCs, HGDLs or ACAs were identified within the 2km study area.

3.52. The assets identified within the study zones were considered along with the results of previous archaeological work, the site visit and map regression analysis, in order to assess the archaeological potential within the Proposed Substation Site. These results informed part of the direct impacts assessment.

## Placenames Assessment

3.53. The names of townlands can sometimes have origins and meanings of historical importance and/or indicate features of interest within their boundaries that are not recorded by other means. This was done by consulting the Placenames Database of Ireland, which collates various historical sources regarding the names of townlands, in particular the Ordnance Survey Parish Namebooks[16]. While the associated grid route, that connects to the existing Thornsberry substation, travels through the townlands of Ballyteige Little, Wood of O, Corndarragh, Derrynagall or Ballydaly, Ardan and Puttaghan along the L1024 and the L1025; only the townland within the remit of the substation has been reviewed in this section. As the associated grid route is being connected to the Thornsberry substation through areas of already disturbed ground, it will therefore not encounter any hitherto unknown archaeological assets or features. As such, the placename assessment, the purpose of which is to discover possible hints to hitherto unknown archaeological assets or features within a particular townland, is made redundant in the case of townlands associated with the grid route.

3.54. The Proposed Substation Site is contained within the single townland of Ballyteige Little, the name of which is assumed to be derived from be derived from the Irish term 'Baile Thaidhg Beag', translated as Little Teige's Town. As such, no specific archaeological or heritage features are suggested by the placename.

## Map Regression Analysis

3.55. **Figure 3.3: Appendix 3A** contains the 6" historic OSI map of the site from 1829 – 1842, while **Figure 3.4: Appendix 3A** shows the 25" historic OSI map from 1897 – 1913. These maps show the progression of land use and field boundaries in the area and can highlight potential areas of archaeological interest that may have been lost in the subsequent years.

3.56. The 6" map (**Figure 3.3: Appendix 3A**) shows that land within the Proposed Substation Site was likely within agricultural usage at the time, with the only internal feature appearing to be a drainage channel running diagonally through its main extent in a southeast to northwest direction. The northwest and southwest boundaries of this field comprise the townland boundary between Ballyteige Little and Wood of O. The proposed access for the main field crosses additional areas of land that were similarly likely to be in agricultural usage and with no notable internal features.

3.57. The 25" map (**Figure 3.4: Appendix 3A**) shows that since its depiction on the 6" map, land within the Proposed Substation Site appears to remain in agricultural usage. The main alteration appears to be the diversion of the drainage channel, which was moved from its diagonal course to a course defining the southern boundary of this field. The townland boundary between Ballyteige Little and Wood of O remains unaffected and still defines the southwest and northwest boundaries of the field. Land within the proposed access similarly

[16] O'Donovan, J ex al (1836) *Ordnance Survey Parish Namebooks (OD:AL).*

remains largely unaffected, but the St Francis RC Church and associated grounds/graveyard are clearly depicted within the field adjacent to the west of the point where the proposed access meets the local road. No other features of interest are discernible.

## Aerial Photography

3.58. Since the depiction of the Proposed Substation Site on OSI historic mapping, very little change has occurred within the land other than a partial hedgerow/boundary being present along the northeast side of the main field. The other boundaries, including the townland boundary, remain unchanged. Aerial imagery from the last decade also confirms that the dominant land use has been low intensive agriculture (pasture) but with some limited amount of cultivation.

3.59. No obvious archaeological features or cropmarks of archaeological potential have been identified from a review of modern aerial photography on Google Earth, Bing Maps, World Imagery Wayback and ArcGIS Pro global mapping. However, a linear feature is discernible running along the north side of the southern boundary of the site, which is presumed to be related to the excavation of the drainage channel at this location.

3.60. No historical aerial images of land within the Proposed Substation Site were identified within the consulted sources, including the National Collection of Aerial Photography (NCAP), Cambridge University Collection of Aerial Photography (CUCAP) and Britain from Above databases.

## Lidar Data

3.61. The Geological Survey Ireland Open Topographic Data Viewer[17] was consulted for available 1m/2m DTM Lidar data of the Proposed Substation Site. However, no such data was held for land within the Proposed Substation Site, with the closest available data being for fields located to the west of the site.

## Local Archaeological Fieldwork / Previous Excavations

3.62. A search of the Database of Irish Excavation Reports[18] identified no previous archaeological fieldwork having been undertaken within or near to the Proposed Substation Site. The two nearest recorded events are a 2005 programme of test trenching (2005:1289)[19] and a 2013 programme of monitoring (2013:183)[20], both located c. 2.6km to the east-southeast of the Proposed Substation Site. As the local record of excavations does not identify any local

[17] *https://dcenr.maps.arcgis.com/apps/webappviewer/*

[18] *https://excavations.ie*

[19] *https://excavations.ie/report/2005/Offaly/0014313/*

[20] *https://excavations.ie/report/2013/Offaly/0023652/*

excavations near to the site, this record does not indicate any heightened archaeological potential within the Proposed Substation Site.

## Site Visit

3.63. An archaeological walkover survey of the lands and grid route for the wider Ballyteige solar farm proposal was conducted on 4th June 2020, while a walkover survey of the interconnection HDD area was conducted in June 2021 within Derrygrogan Solar Farm. Both surveys were undertaken by Paula Slaughter of Neo Environmental. Plates illustrating the land use, field boundaries and conditions referred to below are contained within **Plates 1 – 5: Appendix 3C**.

3.64. Access to the greenfield areas was obtained via an existing entrance and access track which is expected to require minor alterations as part of the Proposed Development. Land-use for the greenfield areas at the time was grassland used for pasture. Field boundaries consisted of a mixture of trees, ditches and hedgerows, which were noted to offer good screening potential for the site. The only exception to this was relatively open views with the adjacent field to the east, which was divided only by a very fragmented line of trees/vegetation. Land was identified to be mainly flat overall with a slight rise towards the northeast where the proposed access meets the local road.

3.65. The survey did not reveal any unknown heritage assets and no notable visibility with surrounding heritage assets was highlighted. No views with the nearby Saints Francis of Assisi and Bridget RC Church (NA02) were identified to be possible from ground level due to the intervening topography and treelines (**Plate 2: Appendix 3C**).

# ASSESSMENT OF DIRECT EFFECTS

## Known Archaeological and Heritage Assets

3.66. There are no recorded sites within the RMP, RPS and NIAH that are within or adjacent to the Proposed Substation and interconnection HDD Site that could be physically impacted by the Proposed Development. In addition, no features of potential archaeological significance were identified within the site during the investigations, including the baseline analysis and site walkover survey.

3.67. The only internal feature highlighted from the analysis was the linear line of a former drainage channel depicted on the OSI 6" historic map, which is not considered to be of archaeological importance and not sensitive to direct impacts. The townland boundary between Ballyteige Little and Wood of O, which forms the southwest and northwest boundaries of the Proposed Substation and interconnection HDD Site, is of historical interest but will not be directly impacted by the Proposed Development due to the incorporation of appropriate buffer zones within its design. As such, direct effects upon known archaeological and heritage assets are anticipated to be **Negligible**.

## Archaeological Potential

3.68. Due to the absence of any recorded archaeological or architectural features within the Proposed Substation and interconnection HDD Site, it is considered to have no internal indicators of archaeological significance. Similarly, results from the site walkover survey and analysis of historic maps, aerial imagery, lidar data and other sources likewise do not indicate any heightened probability for significant remains in the site. The only internal feature highlighted from the analysis was the linear line of a former drainage channel depicted on the OSI 6" historic map, which is not considered to be of archaeological importance.

3.69. The surrounding records within the 2km study area represent a degree of evidence for prehistoric and post-medieval activity which may have extended into the vicinity of the Proposed Substation and interconnection HDD Site. As such, while no evidence for such remains from these periods is present inside the site, this potential cannot be entirely ruled out.

## Ground Disturbance from Construction Methods

3.70. Different levels of intrusion and disturbance are anticipated for different construction elements. As such, the potential for impacting upon sub-surface remains is dependent on the type and scale of each construction element. Construction involving topsoil stripping has, in general, a lower potential for impacting upon sub-surface remains below the archaeological horizon, but retains a similar potential for encountering archaeological remains as construction involving deeper excavation work.

3.71. The majority of the Proposed Development constitutes the areas for the substation, access track and compound area, resulting in an irregular shape for overall boundary (**Figure 3 of Volume 2**). A worst-case scenario of complete disturbance of land within the proposed boundary is assumed as a result of the Proposed Development, with limited opportunities for flexible and non-intrusive construction methods.

3.72. Aerial imagery from the last decade confirms that the dominant land use has been low intensive agriculture (pasture) but with some limited amount of cultivation as well as the construction of the existing access track. As such, while modern land uses may have had the potential to impact upon the chance for survival of sub-surface remains of significance, there is no evidence that this has been done extensively over time and so there is opportunity for surviving sub-surface archaeology within the greenfield elements of the Proposed Substation and interconnection HDD Site.

3.73. Nonetheless, the limited archaeological evidence within and around the site, combined with the relatively small Proposed Substation and interconnection HDD Site size, indicates that the likelihood for the Proposed Development to encounter or impact sub-surface archaeology of significance is considered to be **Low**.

## Indicative Grid Route

3.74. In addition to the above, a 100m study zone was utilised around the proposed grid route (see **Figure 3.4: Appendix 3A**) to determine the possibility of direct impacts upon heritage assets.

3.75. No recorded sites from the databases of RMPs, ZoNs, or HGDLs were identified within this 100m study area. However, a total of three historic buildings from the NIAH were identified within the 100m study area, including:

- Saints Francis of Assisi and Bridget RC Church (NA02);
- Tong's Bridge (NA03); and
- Wood of O Bridge (NA04).

### Saints Francis of Assisi and Bridget RC Church (NA02)

3.76. The Roman Catholic Church NA02 referred to as Saints Francis of Assisi and Bridget is a 19$^{th}$ century church located to the northwest of the proposed substation, but the proposed grid route runs along the Wood of O road on the northeast side of the church grounds. The church itself is set back from the road and will not be directly impacted. However, the associated wall, railing and gates directly face onto the road with no separation. These features are mentioned within its NIAH entry and contribute to the setting of the church itself.

3.77. As they immediately adjoin the road, the wall and railings may be at potential risk of direct impacts from the cable route if excavations occur within the southwest verge of the road at this point. Such impacts would not occur intentionally as the route does not immediately

intersect, but may occur primarily through vibrations, ground stability or any accidental damage by machinery. **However, it is understood that excavations for the cable trench are proposed to be limited to the northeast verge of the Wood of O road where it passes by the church**, in order to avoid such impacts.

### Tong's Bridge (NA03)

3.78. Tong's Bridge is a 19th century, single-arch masonry bridge over the Kilbeggan branch of the Grand Canal, located on the northeast side of the Wood of O road, where the proposed grid route runs along this road. The bridge itself runs perpendicular to the road but does not intersect with it. Instead, the bridge abuts the northeast verge of the road, and its southwest extent may therefore be at potential risk of direct impacts from the cable route (primarily through vibrations, ground stability and accidental damage) if excavations occur within the northeast verge of the road at this point. **However, groundworks at this location are limited to a minor road realignment on the southwest verge of the road (see Figure 108 of the design drawings), within which the cable trench will be located. As these works are restricted to the southwest verge of the Wood of O road as it passes by Tong's Bridge**, no direct impacts are anticipated to occur.

### Wood of O Bridge (NA04)

3.79. Similar to Tong's Bridge, the Wood of O Bridge is a 19th century, single-arch masonry bridge over the Kilbeggan branch of the Grand Canal, located on the northeast side of the Wood of O road, where the proposed grid route runs along this road. The bridge itself runs perpendicular to the road but does not intersect with it. Instead, the bridge abuts the northeast verge of the road where the proposed cable route turns from its northwest-southeast section to its southwest-northeast section. The southwest extent of the bridge may therefore be at potential risk of direct impacts from the cable route if excavations occur within the northeast verge of the road at this point. As above, such impacts would not occur intentionally as the route does not immediately intersect, but may occur primarily through vibrations, ground stability or any accidental damage by machinery. **However, it is understood that excavations for the cable trench are proposed to be limited to the southwest verge of the Wood of O road where it passes by the Wood of O Bridge**, in order to avoid such impacts.

### Sub-surface Archaeology

3.80. Potential direct impacts upon sub-surface archaeology are not anticipated to occur as a result of the proposed grid route, due to its predominant confinement to existing road verges and previously disturbed ground.

# ASSESSMENT OF INDIRECT EFFECTS

3.81. The ZTV was overlain onto the heritage assets map in order to identify those which have a greater potential to be visually impacted by the Proposed Development. The ZTV does not account for intervening hedgerows, trees or built structures, which will limit the intervisibility between the building/monument and the Proposed Development.

3.82. Within their respective study zones, a total of five historic buildings from the NIAH/RPS and four sites within the RMP are located within the ZTV. These assets are therefore assessed for indirect impacts below. The ZTV, asset distances and the visual impacts assessment below are based solely on the Proposed Substation Site, as this is the only element of the Proposed Development anticipated to contain standing remains capable of visual impacts.

## Historic Buildings within the NIAH/RPS

### Protected Structures along the Kilbeggan Branch of the Grand Canal to the North and East of the Proposed Substation Site (NA01, NA03 & NA04)

3.83. There are a total of three historic bridges present along the Kilbeggan Branch of the Grand Canal that lie within the 2km study area. This branch is a later extension of the main Grand Canal route and is currently disused. As a result, the setting of this branch is considered to be somewhat less sensitive to views and intervisibility with the Proposed Development than the main Grand Canal located to the south of the Proposed Susbtation Site.

3.84. The protected structures on this canal branch comprise a group of three bridges situated to the north and east and at distances between c. 0.32 – 0.93km from the nearest points of the Proposed Substation Site. These features share the setting on the Kilbeggan Branch of the Grand Canal and therefore contain a group setting value, whereby they can contribute to each other's heritage value. As such, these features are considered to be somewhat sensitive to potential views and intervisibility with the Proposed Development but, as previously mentioned, the sensitivity of this disused branch is considered to be notably lower than that of the main Grand Canal to the south. The descriptions and appraisals within the RPS/NIAH for each of these features are presented below.

*NA01 – Odlum's Bridge*

> *"Single-arch masonry bridge, built c.1835, carrying minor road over disused Kilbeggan branch of Grand Canal. Regularly coursed limestone blocks. Semicircular profile arch. Parapets project slightly from dressed limestone spandrels. Spandrel faces curve outwards to terminate in finely dressed piers embellished with string course. Humped deck and ramped approaches. Tow rope marks on east quoins. The south-east pier is slightly damaged with repairs in mass concrete and concrete blocks. Towpath runs through the east side.*

*This bridge is of architectural merit due to the high quality of the stonework. Its setting within the landscape enhances its architectural heritage merit."*

*NA03 – Tong's Bridge*

*"Single-arch masonry bridge, built c.1835, carrying accommodation track over Kilbeggan branch of the Grand Canal. Regularly coursed, dressed limestone blocks. Soffit is of dressed stone blocks and the voussoirs are of finely dressed stone. A towpath runs through the east side.*

*Ton's Bridge is part of a series of canal bridges of high quality masonry. It is a highly visible and positive addition to the canalscape."*

*NA04 – Wood of O Bridge*

*"Single-arch masonry bridge, c.1835, carrying minor road over disused Kilbeggan branch of Grand Canal. Regularly coursed dressed limestone blocks. Semicircular profile arch. Voussoirs of finely dressed stone. Parapets project from spandrels and are of finely dressed limestone blocks. String course across face. Curved deck and ramped approaches. Towrope marks on east quoins.*

*Wood of O Bridge is of architectural merit due to the quality of its construction. It enhances the canalscape of the area."*

*Summary and Impacts*

3.85. The above descriptions show that the bridges are all contemporary structures constructed c. 1835 and all contribute to the setting of the bridges and the canalscape. This indicates that the bridges are potentially sensitive to views and intervisibility with the Proposed Substation Site, albeit to a lesser extent to those that are on the main canal as previously discussed. In particular, the record for Tong's Bridge (NA03) states that it is highly visible and may therefore be more susceptible to visual changes in the wider landscape.

3.86. Views and intervisibility with the Proposed Substation Site will be heavily screened by the presence of intervening woodland, mature treelines and vegetation. Limited views may be possible from Tong's Bridge towards the Proposed Substation Site, although no such views were identified during the site visit. Such views are therefore expected to be largely screened by the presence of the treeline along the northern field boundary of the Proposed Substation Site, but limited views and intervisibility through gaps in this boundary, or the highest extends of the Proposed Development extending above them, cannot be entirely ruled out. However, such views would include modern housing and the existing 110kV overhead line within its foreground and any partial views of the more distant proposed substation would not be considered harmful to the heritage value or setting of Tong's Bridge. Other than this, no views or intervisibility between the Proposed Development and the other bridges are expected to be possible. Indirect effects upon these protected structures are therefore anticipated to be **Low to negligible** for Tong's Bridge (NA03) and **Negligible** for Odlum's Bridge (NA01) and Wood of O Bridge (NA04).

### Saints Francis of Assisi and Bridget RC Church (NA02)

3.87. The Roman Catholic Church referred to as Saints Francis of Assisi and Bridget is a 19th century church located c. 230m to the northeast of the nearest standing element of the Proposed Development. A description and appraisal of this structure, as well as all other protected structures identified within this assessment, are contained within the Record of Protected Structures (RPS) produced as part of the Offaly County Development Plan[21]. This information for the Saints Francis of Assisi and Bridget Roman Catholic Church is as follows:

*"Detached three-bay gable-fronted single-cell Roman Catholic church, built in 1841, with semi-circular apse, side chapels and modern extensions to rear. Pitched roof with stone cross finial above front entrance. Roughcast rendered walls with nap plinth and quoins [..] Site bounded by wall with gates.*

*Saints Francis of Assis and Bridget's church is an important ecclesiastical structure in Offaly. Situated on the Kilbeggan branch of the Grand Canal, it may have provided mass for those travelling along its route."*

3.88. The church therefore derives significant value from its local setting, in particular the Grand Canal on its northeast side, which was potentially integral to its day-to-day functioning. This setting is well-defined by enveloping mature trees, which offer considerable screening effects on its southwest and southeast sides. As such, its immediate setting is defined by this curtilage and benefits the heritage value of the church. The wider setting of the church, which includes a number of modern houses along the adjacent road, is not of as much importance to its heritage value, but the fields to the southwest of the church may nonetheless contribute to this setting. The church is therefore considered to be potentially sensitive to potential views of the Proposed Development.

3.89. Views and intervisibility are expected to be completely screened at the lower levels by intervening vegetation, specifically that enveloping the curtilage of the church (see **Figure 1.4: Viewpoint 1 of Technical Assessment 1: LVIA**). As a result, only limited intervisibility will be possible from certain points and such views are expected to be restricted to the upper sections of the Proposed Development only. Indirect effects upon the church are therefore anticipated to be **Low**.

### 23rd Lock, Grand Canal (NA05)

3.90. There are a number of protected structures present along the nearby Grand Canal, but only one of which lies within the 2km study area. This is the 23rd Lock, which is located c. 1.8km to the south-southeast of the Proposed Substation Site and is described within its database entry as:

[21] Descriptions from Offaly Record of Protected Structures (County Development Plan 2014 – 2020), accessed https://www.offaly.ie/eng/Services/Heritage/Architecture/2014-2020-Protected-Structures-County-Offaly.pdf

*"Canal lock station on the Grand Canal, c. 1790, with pair of timber gates set in stone channel with limestone walls.*

*This lock forms part of a group with the related canal structures in the area. Its simple design has a pleasing symmetry and it retains much original materials and fabric making it a charming addition to the canal. The stonework of the canal along with the gates and associated mechanics have been manufactured and maintained by a skilled group of craftsmen. The number and quality of these canal related structures indicates the importance of the Grand Canal to the trade and transport network of the early nineteenth century."*

3.91. The wider structures include canal locks, lock stations, bridges and a lock keeper's house, all of which share the overall late 18th and early 19th century industrial setting on the Grand Canal. The assets therefore contain a group setting value, whereby they can contribute to each other's heritage value. As a result, the stretch of the Grand Canal in this area, including the 23rd Lock, is considered to be potentially sensitive to views with the Proposed Development.

3.92. The track running along the northern side of the canal allows for such views and intervisibility to be possible with the adjacent fields. However, more distant views northward from the canal are not nearly as possible as they are screened by mature trees and vegetation along the intervening field boundaries. As a result, no views or intervisibility between the Proposed Development and the setting of the 23rd Lock are expected to be possible. Indirect effects are therefore anticipated to be **Negligible**.

## Record of Monuments and Places

3.93. A total of four sites in the RMP lie within the 2km study zone and the calculated ZTV of the Proposed Substation Site. These sites can be used to evaluate the potential for archaeological remains within the Proposed Substation Site but in many cases can be potentially sensitive to visual impacts occurring from new development. The four relevant RMP sites are as follows:

- Cairn – unclassified (NA06), located c. 1.47km to the northeast;
- Bullaun stone (NA07), located c. 1.47km to the northeast;
- Enclosure (NA12), located 0.85km to the east-northeast; and
- Enclosure (NA13), located 1.4km to the southwest.

3.94. The database descriptions for the RMP sites indicate that the cairn NA06 has been destroyed and its position now occupied by a modern bungalow, while enclosures NA12 and NA13 are cropmark sites with no visible remains at ground level. As such, these three sites are not considered to be at all sensitive to any potential views or intervisibility with the Proposed Development. Similarly, while bullaun stone NA07 is described as being on elevated ground with good views, its setting is dominated by the adjacent modern housing and agricultural

buildings and as a result is not considered to be sensitive to possible views with the Proposed Development at this distance.

3.95. In addition to the above, no views or intervisibility between the Proposed Development and any of the RMP sites are expected to be possible due to intervening vegetation, in particular that along the canal, field boundaries and blocks of forestry. Indirect effects upon each of the RMP sites and their settings are therefore anticipated to be **Negligible**.

## Summary of Indirect Effects

3.96. There were no NMSC records identified within the 2km study zone around the Proposed Development. As such, this resource will not be impacted.

3.97. There were no HGDL records identified within the 2km study zone around the Proposed Development. As such, this resource will not be impacted.

3.98. There were five historic structures within the RPS/NIAH that are within the 2km study zone and the ZTV of the Proposed Development. Indirect effects are anticipated to be **Low** for the Saints Francis of Assisi and Bridget RC Church (NA02) and **Low to negligible** for Tong's Bridge (NA03), while indirect effects upon the remaining historic structures (NA01, NA04 & NA05) are anticipated to be **Negligible**.

3.99. There were four archaeological sites identified in the RMP that are within the 2km study zone and the ZTV of the Proposed Development. Indirect effects upon each of the four RMP sites (NA06, NA07, NA12 & NA13) are anticipated to be **Negligible**.

3.100. As the Landscape and Visual Impact Assessment concluded that no notable cumulative landscape or visual effects will occur as a result of the Proposed Development, no cumulative visual impacts are expected to occur on any of the surrounding heritage assets previously identified.

## Indicative Grid Route

3.101. As no above-ground elements are proposed as part of the underground cable route, this element will not be visible at ground level. It will therefore not result in any visual impacts during its operational stage. The construction stage activity of the Development may result in limited visual impacts to the local area, but these will be temporary in nature and will not affect the heritage value of any identified assets or their settings due to the temporary nature and low magnitude of such impacts. As such, indirect effects upon all designated and non-designated assets as a result of the proposed grid route will be **Negligible**.

# CUMULATIVE EFFECTS

3.102. Cumulative effects may occur where the combination of separate impacts resulting from different developments build up to be potentially significant. As such, where individual impacts may be minor, they may contribute to a more significant collective impact. Such impacts can be direct or indirect; however as archaeological potential within the Proposed Substation Site is considered to be low and the Proposed Development design has avoided recorded assets, **no significant additional cumulative direct effects** are anticipated.

3.103. Cumulative indirect effects upon heritage assets are primarily considered to be visual in nature and may occur where they act as receptors to more than one development with which they have visibility. However, while some degree of cumulative visual effects are expected to occur through shared views with existing or consented developments in the local landscape, these cumulative visual effects are not expected to result in any significant cumulative effects on the settings of any heritage assets.

3.104. Although nearby consented developments may result in cumulative views from third points in the landscape, no instances were identified where cumulative indirect effects resulting from this upon any specific heritage asset increased the overall indirect effects anticipated upon them. As such, overall cumulative indirect effects upon the heritage resource are anticipated to be **Low** in the worst case during the operational phase, in line with the overall indirect effects previously assessed. Consented developments identified within the surrounding area and considered for cumulative impacts are contained within **Table 1** below.

Table 1: Consented Developments within the wider area

| APPLICATION NUMBER | TYPE OF DEVELOPMENT | DEVELOPMENT DESCRIPTION | STAGE OF APP. | DECISION TYPE | DECISION | DISTANCE | DIRECTION |
|---|---|---|---|---|---|---|---|
| Offaly County Council | | | | | | | |
| 16356 | Large Residential Development | 82 NO. RESIDENTIAL UNITS (Amended by application number 20466) | Finalised | Permission | Conditional | 1.55km | WSW |
| 20465 | Residential | AMENDMENTS TO PERMITTED RESIDENTIAL DEVELOPMENT, (UNDER REG. REF. 1175 AND AS EXTENDED UNDER REG. REF. EX16007) BY THE REPLACEMENT OF | Finalised | Permission | Conditional | 1.4km | WNW |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | PERMITTED 22 NO. DWELLINGS (BUNGALOWS & DORMER BUNGALOWS) WITH 30 NO. DWELLINGS COMPRISING 4 NO. 2 STOREY 4 BEDROOM DETA | | | | | |
| 2360059 | Large Residential Development | A Large Scale Residential Development (LRD). The proposed development consists of 126 no. residential units comprised of 102 no. dwelling houses and 24 no. apartments and a childcare facility/creche. The houses are arranged as 7 no. two-story, detached | Finalised | Permission | Conditional | 1.34km | WNW |
| 20579 | BESS | A compound containing 2 no. Energy storage containers with a capacity of up to 10mw and associated transformers, inverters, a switchroom building of approximately 88m2 (containing switch and control rooms), internal cabling, electrical and communications | Finalised | Permission | Conditional | 3.5km | S |
| 218 | Solar | A 10 year planning permission for the construction of, | Finalised | Permission | Conditional | 2.7km | NNE |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | and a 40 year operation and subsequent decommissioning of, a development consisting of a 52.75 hectare solar farm and battery energy storage system and 9.32 kilometre underground electricity grid con | | | | | |
| 18167 | Grid | A grid system services facility within a total site area of 0.84 hectares, to include 1 no. Single storey electrical substation building, 1 no. Customer switchgear container, 17 no. 2mw electrical inverter/transformer station modules (skids), 10 no. Cont | Finalised | Permission | Conditional | 0.27km | E |
| 2198 | Solar | A period of 5 years to construct and complete a solar pv energy development with a total site area of 60.53 hectares, to include a single storey electrical substation building, inverter substations, modules, solar pv ground mounted on support structures, | Finalised | Permission | Conditional | 1km | S |
| 23315 | Grid | The replacement of a permitted | Finalised | Permission | Conditional | 3.2km | W |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | single storey terminal electrical station and separate permitted switchgear enclosure (both previously permitted as part of a solar farm permission by offaly county council under planning ref. 17/11) with i no. Proposed sin | | | | | |
| 2460250 | Solar | the construction of a solar PV development with an installed capacity of up to 2.6 MWdc (MEC=0) to provide electrical power to the existing distillery comprising approximately 4,100 no. photovoltaic panels on ground mounted frames within a site area of | Finalised | Permission | Conditional | 3.8km | S |
| 2460514 | Grid | A new prefabricated substation building within the existing car park to cater for 5no. electric car charging points for 10no. electric car parking spaces, along with all associated ancillary site works | Finalised | Permission | Conditional | 2.1km | S |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| N/A | Substation | Amendment to consented Ballyteige Solar Farm (PL Ref: 2198) – 50.53-hectare solar development | N/A | Permission | N/A | 0.00km | N |
| **An Bord Pleanála** | | | | | | | |
| 309488 | Biogas | A renewable biogas facility on a 2.1379 hectare site to produce renewable energy and organic fertiliser. This application included an Environmental Impact Assessment Report (EIAR). | Finalised | Permission | Conditional | 2.9km | W |
| 311101 | Nursing Home | Development of 4 storey nursing home, step down facility and rehabilitation and convalescence unit to accommodate a total of 244 bedrooms, communal spaces, dining areas, administration, ancillary service spaces and meeting and consulting rooms. Site to accommodate 197 car park spaces, new site entrance, security kiosk, pump station, plant rooms and associated site works. | Finalised | Permission | Appeal Decided | 0.1km | W |

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|---|---|---|---|---|---|---|---|
| 311741 | Large Residential Development | 349 no. residential units (196 no. houses, 153 no. apartments), creche and associated site works. | Finalised | Permission | Case is due to be decided by 18/02/2022 | 2.65km | S |
| 317318 | Large Residential Development | A large-scale residential development (LRD). Construction of 102 dwellings in a mix of houses, duplex and apartments. A Natura Impact Statement (NIS) was submitted with this application. | Finalised | Permission | Invalid Fee | 0.9km | S |
| 317341 | Residential | Construction of 95 houses. | Finalised | Permission | Conditional | 1.6km | S |
| 318041 | Solar | 10 years to construct solar energy development with ancillary development works. Solar farm will be operational for 35 years. A Natura Impact Assessment (NIS) has been submitted with this application. | Finalised | Permission | Conditional | 0km | O |
| 318339 | Large Residential Development | Construction of Large Scale Residential Development (LRD) comprising 148 residential units and creche. | Finalised | Permission | Conditional | 0.15km | SW |
| 319079 | Industrial | The construction of a sterilization technology facility | Finalised | Permission | Conditional | 2.3km | W |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | and all associated site and development works above and below ground. | | | | | |

# MITIGATION MEASURES

## Direct Effects upon Known Assets

### Proposed Substation, track and interconnection HDD area

3.105. There are no recorded sites within the RMP, RPS and NIAH that are within or adjacent to the Proposed Substation and interconnection HDD Site that could be physically impacted by the Proposed Development. In addition, no features of potential archaeological significance were identified within the site during the investigations, including the baseline analysis and site walkover survey.

3.106. The only internal feature highlighted from the analysis was the linear line of a former drainage channel depicted on the OSI 6" historic map, which is not considered to be of archaeological importance and not sensitive to direct impacts. As such, direct effects upon known archaeological and heritage assets are anticipated to be Negligible and **no specific mitigation measures will be required for the protection or recording of any known remains** in relation to the proposed substation, access tracks and cable route.

### Proposed Grid Connection Route

3.107. The proposed grid route passes by three historic buildings from the NIAH, including:

- Saints Francis of Assisi and Bridget RC Church (NA02);
- Tong's Bridge (NA03); and
- Wood of O Bridge (NA04).

3.108. The Proposed Development intends to '**mitigate by design'** the risk for any potential direct impacts, through vibrations, ground stability or accidental damage by machinery, by locating cable trenches within the road verges furthest from each asset. In order to avoid the potential for such direct impacts, the locations of the cable trenches will be:

- **Restricted to the northeast verge of the Wood of O road where it passes by Saints Francis of Assisi and Bridget RC Church (NA02)**;
- **Restricted to the southwest verge of the Wood of O road where it passes by Tong's Bridge (NA03)**; and
- **Restricted to the northeast verge of the Wood of O road where it passes by Wood of O Bridge (NA04)**.

## Archaeological Potential

3.109. Due to the absence of any recorded archaeological or architectural features within the Proposed Substation and interconnection HDD Site, it is considered to have no internal indicators of archaeological significance. Similarly, results from the site walkover survey and analysis of historic maps, aerial imagery, lidar data and other sources likewise do not indicate any heightened probability for significant remains in the site. The surrounding records within the 2km study area represent a degree of evidence for prehistoric and post-medieval activity which may have extended into the vicinity of the Proposed Substation and interconnection HDD Site. As such, while no evidence for such remains from these periods is present inside the site, this potential cannot be entirely ruled out. Nonetheless, the limited archaeological evidence within and around the site, combined with the relatively small Proposed Substation and interconnection HDD Site size, indicates that the likelihood for the Proposed Development to encounter or impact sub-surface archaeology of significance is considered to be Low.

3.110. In consideration of the above, it is recommended that no specific further pre-determination works would be necessary in relation to archaeology and heritage. Nonetheless, due to the potential for surviving hitherto-unknown remains, it is recommended that as a minimum, all groundworks associated with the preparation and construction of the substation be monitored by a qualified archaeologist during the construction stage. It is also noted that if the programme of archaeological work for the wider Ballyteige solar farm is implemented beforehand, then the more efficient approach may be to incorporate the Proposed Substation Site within the scope of this work due to its inclusion within this solar farm boundary.

3.111. The implementation of an appropriate programme of archaeological works, as managed by a qualified archaeologist, would ensure that measures are in place to facilitate the preservation of hitherto-unknown sub-surface remains present within the Proposed Substation Site, either by record (including the potential for further excavation/fieldwork) or *in-situ*, as appropriate. Any required archaeological work is at the discretion of the NMS and Offaly County Council.

## Indirect Effects

3.112. Indirect effects upon the surrounding heritage assets have been assessed as overall Low in the worst case. **Therefore no specific mitigation is considered to be required for the reduction of any visual impacts**.

# RESIDUAL EFFECTS

3.113. Direct effects upon known archaeological and heritage assets are anticipated to be Negligible as a result of the proposed substation, access tracks and cable route, and therefore no specific mitigation measures will be required for the protection or recording of any known remains. In addition, while the grid route is proposed in close proximity to recorded historic structures, such impacts are expected to be sufficiently mitigated by design. Residual direct effects will therefore be Negligible.

3.114. Following the implementation of an appropriate programme of archaeological works, as managed by a qualified archaeologist, would ensure that measures are in place to facilitate the preservation of hitherto-unknown sub-surface remains present within the Proposed Substation Site, either by record (including the potential for further excavation/fieldwork) or *in-situ*, as appropriate. As such, residual direct effects upon hitherto-unknown archaeology are anticipated to be Negligible.

3.115. As no mitigation is expected to be required for indirect effects, residual indirect effects would be considered to be unchanged at Low in the worst case.

# SUMMARY

3.116. The desk-based assessment was conducted to ascertain all historical and archaeological information relevant to the Proposed Development and the local area. All types of heritage assets were considered and assessed within a 2km study zone of the Proposed Substation. The size of this study zone was selected to ensure that comprehensive and informative data was collated to characterise the direct and indirect effects that the Proposed Development may have on historical and archaeological assets within the local area. Baseline information was also obtained through a site walkover survey, map regression analysis, placenames analysis, aerial photography and consultation with relevant records and databases.

3.117. There are no recorded sites within the RMP, RPS and NIAH that are within or adjacent to the Proposed Substation Site that could be physically impacted by the Proposed Development. In addition, no features of potential archaeological significance were identified within the site during the investigations, including the baseline analysis and site walkover survey. The only internal feature highlighted from the analysis was the linear line of a former drainage channel depicted on the OSI 6" historic map, which is not considered to be of archaeological importance and not sensitive to direct impacts. As such, direct effects upon known archaeological and heritage assets are anticipated to be Negligible as a result of the proposed substation, track and interconnection HDD area and **no specific mitigation measures will be required for the protection or recording of any known remains**. In addition, while the grid route is proposed in close proximity to recorded historic structures, such impacts are expected to be sufficiently mitigated by design.

3.118. Due to the limited archaeological potential of the Proposed Substation Site, **it is recommended that no specific further pre-determination works would be necessary in relation to archaeology and heritage**. Nonetheless, due to the potential for surviving hitherto-unknown remains, **it is recommended that as a minimum, all groundworks associated with the preparation and construction of the substation be monitored by a qualified archaeologist during the construction stage**. The implementation of an appropriate programme of archaeological works, as managed by a qualified archaeologist, would ensure that measures are in place to facilitate the preservation of hitherto-unknown sub-surface remains present within the Proposed Substation Site, either by record (including the potential for further excavation/fieldwork) or *in-situ*, as appropriate. Any required archaeological work is at the discretion of the NMS and Offaly County Council.

3.119. Indirect effects upon the surrounding heritage assets have been assessed as overall **Low** in the worst case. Therefore, **no specific mitigation is considered to be required for the reduction of any visual impacts upon heritage assets**.

# LIST OF APPENDICES

## Appendix 3A – Figures

- Figure 3.1 – Heritage Assets within 2km
- Figure 3.2 – Historic 6" OSI Map (1829 – 1842)
- Figure 3.3 – Historic 25" OSI Map (1897 – 1913)
- Figure 3.4 – Heritage Assets near Indicative Grid Route

## Appendix 3B – Tables

## Appendix 3C – Plates


An **Origin Enterprises** Company


## GLASGOW - HEAD OFFICE

Wright Business Centre, 1 Lonmay Road,
Glasgow, G33 4EL
T: 0141 773 6262

## NORTHERN IRELAND OFFICE

83-85 Bridge Street, Ballymena, Co. Antrim,
Northern Ireland, BT43 5EN
T: 0282 565 04 13

## BRISTOL OFFICE

Spaces 8th Floor
The Programme Building
The Pithay
Bristol, BS1 2NB
T: 0282 565 04 13

## DUBLIN OFFICE

C/O Origin Enterprises PLC
4-6 Riverwalk,
Citywest Business Campus
Dublin 24, D24 DCW0
T: 00 353 (1) 5634900

## RUGBY OFFICE

Valiant Office Suites
Lumonics House, Valley Drive,
Swift Valley, Rugby,
Warwickshire, CV21 1TQ
T: 01788 297012

## WARRINGTON OFFICE

Lakeview 600, Lakeside Drive
Centre Park Square
Warrington
WA1 1RW
T: 01925 984 682