

Sure Partners Limited

ARKLOW BANK WIND PARK
PHASE 2
**ONSHORE GRID
INFRASTRUCTURE**

**ENVIRONMENTAL IMPACT
ASSESSMENT REPORT**

VOLUME II

Chapter 14 Landscape & Visual

ARUP

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Renewables

Contents

	Page	
14	Landscape and Visual	1
14.1	Introduction	1
14.2	Methodology	1
14.3	Receiving Environment	8
14.4	Characteristics of the Proposed Development	16
14.5	Likely Significant Effects	18
14.6	Mitigation Measures and Monitoring	25
14.7	Cumulative Effects	27
14.8	Residual Effects	29
14.9	References	32

14 Landscape and Visual

14.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) has been prepared by Brady Shipman Martin on behalf of Sure Partners Limited (SPL) and provides an assessment of the landscape and visual impacts of the proposed Arklow Bank Wind Park Phase 2 Onshore Grid Infrastructure (hereafter the ‘proposed development’).

The proposed development comprises a number of distinct but related parts, including:

- Landfall for two offshore export cable circuits from the High Water Mark (HWM) to two Transition Joint Bays (TJB) at Johnstown North, located approximately 4.5km northeast of Arklow Harbour,
- Connection by two underground 220kV high voltage alternating current cable circuits, and fibre optic cables over a distance of c. 6km, from the landfall to the new onshore 220kV substation,
- A new onshore 220kV substation, to be located at Shelton Abbey, north of the Avoca River, approximately 2.1km northwest of Arklow town consisting of two connected compounds:
 1. The transmission compound with the infrastructure to physically connect to the NETN, and
 2. The connection compound with the infrastructure to allow the connection of the windfarm in accordance with EirGrid grid code requirements.
- Flood defence improvement works to the existing Avoca River Business Park flood defences located c. 500m west of the substation site;
- A 220kV overhead line connection from the new 220kV substation at Shelton Abbey to the existing 220kV transmission network located c. 200m from the substation site.

The detailed description of the proposed development is provided in **Chapter 5 Description of Development**.

14.2 Methodology

14.2.1 Relevant Legislation, Policy and Guidelines

The assessment has been carried out with reference to the following legalisation, policy and guidelines:

Legislation

- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment;
- Planning and Development Act 2000, as amended;
- Planning and Development Regulations 2001, as amended; and
- European Landscape Convention 2000.

Policy

- Wicklow County Development Plan 2016-2022; and
- Arklow and Environs Local Area Plan 2018-2024.

Guidelines

- Environmental Protection Agency (EPA, 2017). Guidelines on the Information to be contained in Environmental Impact Assessment Reports. Draft;
- Environmental Protection Agency (EPA, 2015). Advice Notes for preparing Environmental Impact Statements. Draft;
- Landscape Institute and the Institute of Environmental Management and Assessment (LI/IEMA, 2013) Guidelines for Landscape and Visual Impact Assessment, 3rd edition, (GLVIA);
- Landscape Institute (LI, 2018) Technical Information Note 05/2017 (Revised 2018) on Townscape Character Assessment (TCA);
- Department of Housing, Planning and Local Government (DHPLG, 2018) Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (GEIA); and
- Landscape Institute (LI, 2019) Technical Guidance Note 06/2019 on Visual Representation of Development Proposals, (VPDP).

14.2.2 Assessment of Landscape and Visual Effects

The assessment of landscape and visual impacts has had regard to the Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports prepared by the Environmental Protection Agency (2017) and to the EIA Directive 2011/92/EU (as amended by Directive 2014/52/EU) on the assessment of the effects of certain public and private projects on the environment.

Assessment of landscape effects and visual effects are two separate but closely related aspects, where:

- Landscape effects relate to the effects of a proposed development on the physical characteristics of the landscape and its resulting character and quality; and

- Visual effects relate to the effects on views experienced by visual receptors (e.g. residents, footpath users, tourists etc.) and on the visual amenity experienced by those people.

Assessment of potential landscape and visual effects is a two-stage process that involves:

- Classifying the sensitivity of the receiving environment; and
- Describing and classifying the magnitude of change in the environment resulting from the proposed development.

These factors are combined to provide a classification of significance of effects for the impact assessment.

14.2.2.1 Landscape Effects

Landscape effects describe the impact on the fabric or structure of a landscape or landscape character. The assessment of landscape effects firstly requires the identification of the components of the landscape.

The landscape components are also described as landscape receptors and comprise the following:

- Individual landscape elements or features;
- Specific aesthetic or perceptual aspects; and
- Landscape character, or the distinct, recognisable and consistent pattern of elements (natural and manmade) in the landscape that makes one landscape different from another.

The assessment will identify the interaction between these components and the proposed development during construction and operation. The condition of the landscape and any trends of change and relevant policy framework will also be taken into account.

Sensitivity of Landscape Receptors

The sensitivity of a landscape receptor is determined by employing professional judgment to consider and assess the identified value of the landscape and its susceptibility to the type of change or development proposed.

Table 14.1: Landscape Sensitivity

Sensitivity	Susceptibility	Value
Very High	Exceptional landscape quality, no or limited potential for substitution. Key elements/features well known to the wider public. The landscape receptor is of very high susceptibility to the proposed development and has little or no tolerance to change.	Nationally/internationally designated/valued landscape, or key elements or features of national/internationally designated landscapes.

Sensitivity	Susceptibility	Value
High	Strong/distinctive landscape character; absence of landscape detractors. The landscape receptor is of high susceptibility to the proposed development and has low tolerance to change.	Regionally/nationally designated/valued countryside and landscape features or landscapes judged to be of equivalent value using clearly stated and recognised criteria.
Medium	Some distinctive landscape characteristics; few landscape detractors. The landscape receptor is of medium susceptibility to the proposed development and has medium tolerance to change.	Locally or regionally designated/valued countryside and landscape features or landscapes judged to be of equivalent value using clearly stated and recognised criteria
Low	Absence of distinctive landscape characteristics; presence of landscape detractors. The landscape receptor is of low susceptibility to the proposed development and has high tolerance to change.	Undesignated landscapes and landscape features which have little value to local communities.
Negligible	Absence of positive landscape characteristics. Significant presence of landscape detractors. The landscape receptor is of negligible susceptibility to the proposed development and has very high tolerance to change.	Undesignated landscapes and landscape features which have no particular scenic qualities or are in poor condition or altered by presence of intrusive manmade structures.

Magnitude of Change to the Landscape

Magnitude of change is an expression of the size or scale of change in the landscape, the geographical extent of the area influenced, and the duration and reversibility of the resultant effect.

The duration of the effects are short-term lasting 0-5 years; medium term lasting 5-10 years, long-term lasting 10-20 years; and permanent lasting more than 20 years.

Table 14.2: Magnitude of Change

Magnitude of impact	Definition
Large	Total loss or addition or very substantial loss or addition of key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of dominant elements which are uncharacteristic with the attributes of the receiving landscape.
Medium	Partial loss or addition of or moderate alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of elements that may be prominent but may not necessarily be substantially uncharacteristic with the attributes of the receiving landscape.
Small	Minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development

Magnitude of impact	Definition
	landscape) and or introduction of elements that may not be uncharacteristic with the surrounding landscape.
Negligible	Very minor loss or addition of or alteration to one or more key elements/features/patterns of the baseline (i.e. pre-development landscape) and/or introduction of elements that are not uncharacteristic with the surrounding landscape approximating to a 'no-change' situation.
None	No loss, alteration or addition to the receiving landscape resource.

14.2.2.2 Visual Effects

Visual effects relate to how a development will be seen within the landscape, and whether the development is integrated, balanced or incongruous within the visual setting and context. Visual effects can be adverse, neutral or beneficial.

Visual effects are experienced by people, or visual receptors, and the degree to which they will be affected by changes as a result of the proposed development depends on many factors including:

- The importance of the location as may be reflected by designations or by the numbers of people who experience the view;
- The nature of receptors, who may be residents, workers, passing through, or visiting, and who may experience the view momentarily, for longer periods, or frequently;
- The nature and extent of changes that may be viewed openly or intermittently in the local or wider context; and,
- Accessibility of the viewpoint.

Sensitivity of Visual Receptors

The sensitivity of a landscape receptor is determined by combining judgments in relation to the susceptibility of the receptor to the type of change, and to the value attached to particular views.

Table 14.3: Sensitivity of Visual Receptors

Sensitivity	Viewer susceptibility	Value of views
Very High	Visitors drawn to a particular view (usually a designated landscape), including those who have travelled to experience the views. These viewers have very high susceptibility.	Views of internationally designated landscape, or in a countryside/land or widely known/famous views.
High	Residents. People engaged in quiet outdoor recreation where landscape is an important part of the experience.	Views of nationally designated countryside/land.

Sensitivity	Viewer susceptibility	Value of views
	These viewers have high susceptibility.	
Medium	Observers enjoying the countryside from vehicles on quiet/promoted routes. People engaged in outdoor sport or recreation which may involve appreciation of views (e.g. cyclists, golfers). These viewers have medium susceptibility.	Views of designated countryside/land.
Low	People engaged in outdoor sport or recreation which does not involve appreciation of views. These viewers have low susceptibility.	Views of undesignated countryside/land.
Negligible	People at work where the setting is not important to the quality of working life. Road users (commuters) where the view is incidental to the journey. These viewers have negligible susceptibility.	Undesignated landscapes and landscape features which have no particular scenic qualities or are in poor condition or altered by presence of intrusive manmade structures.

Magnitude of Visual Impact

The criteria for defining magnitude of impact on visual receptors are defined in **Table 14.4**.

Table 14.4: Magnitude of Visual Impact

Magnitude of impact	Definition
Large	Complete or very substantial change in view. Change dominant involving complete or very substantial obstruction of existing view or complete change in character and composition of baseline, e.g. through removal of key elements.
Medium	Moderate change in view which may involve partial obstruction of existing view or partial change in character and composition of baseline (i.e. pre-development view) through the introduction of new elements or removal of existing elements. Change may be prominent but would not substantially alter scale and character of the surroundings and the wider setting. Composition of the view would alter. View character may be partially changed through the introduction of features which, though uncharacteristic, may not necessarily be visually discordant.
Small	Minor change in baseline (i.e. pre-development view). Change would be distinguishable from the surroundings whilst composition and character would be similar to the pre change circumstances.
Negligible	Very slight change in baseline (i.e. pre-development view). Change barely distinguishable from the surroundings. Composition and character of view substantially unaltered.

Magnitude of impact	Definition
None	No alteration to the existing view.

14.2.2.3 Significance of Effects

The significance of the effect upon landscape and visual receptors is arrived at by combining judgements in relation to the sensitivity of the receptor to change and to the magnitude of the impact and is presented in **Table 14.5** below.

Table 14.5: Matrix for the assessment of the significance of the effect.

	Magnitude of Impact					
	No Change	Negligible	Small	Medium	Large	
Sensitivity of receptor	Negligible	None	Negligible	Negligible or Minor	Negligible or Minor	Minor
	Low	None	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
	Medium	None	Negligible or Minor	Minor	Moderate	Moderate or Major
	High	None	Minor	Minor or Moderate	Moderate or Major	Major or Profound
	Very High	None	Minor	Moderate or Major	Major or Profound	Profound

Table 14.6: Significance of effect criteria.

Significance	Landscape Resource	Visual Resource
Profound	Where proposed changes would be uncharacteristic and/or would significantly alter a landscape of exceptional landscape quality (e.g. internationally designated landscapes), or key elements known to the wider public of nationally designated landscapes (where there is no or limited potential for substitution nationally).	Where proposed changes would be uncharacteristic and/or would significantly alter a view of remarkable scenic quality, within internationally designated landscapes or key features or elements of nationally designated landscapes that are well known to the wider public.
Major	Where proposed changes would be uncharacteristic and/or would significantly alter a valued aspect of (or a high quality) landscape.	Where proposed changes would be uncharacteristic and/or would significantly alter a valued view or a view of high scenic quality.
Moderate	Where proposed changes would be noticeably out of scale or at odds with the character of an area.	Where proposed changes to views would be noticeably out of scale or at odds with the existing view.
Minor	Where proposed changes would be at slight variance with the character of an area.	Where proposed changes to views, although discernible, would only be at slight variance with the existing view.

Significance	Landscape Resource	Visual Resource
Negligible	Where proposed changes would have an indiscernible effect on the character of an area.	Where proposed changes would have a barely noticeable effect on views/visual amenity.
None	Where the project would not alter the landscape character of the area.	Where the project would retain existing views.

14.3 Receiving Environment

The site of the proposed 220kV substation is located west of the M11 and just north of the Avoca River, the R747 and the Dublin-Rosslare railway line.

The route for the proposed underground 220 kV circuit starts at the landfall at Johnstown North, leading south westwards across a series of agricultural fields, field boundaries and local roads, continuing past the Kilbride Industrial Estate and under the M11 motorway to the 220kV substation and NETN connection. A short section, c. 75m in length, of flood embankment improvement works is proposed just upstream of the substation site area and on the northern side of the Avoca River. See **Figure 14.1** below.

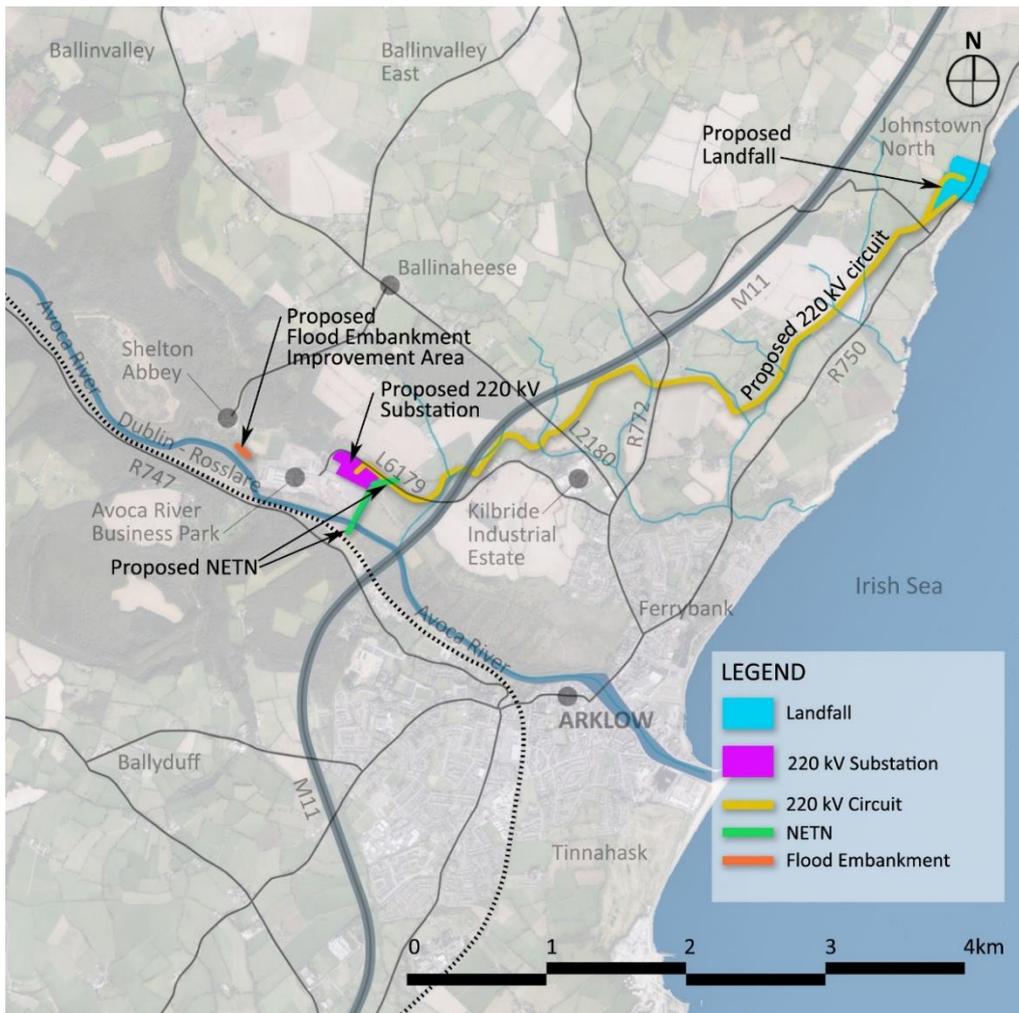


Figure 14.1: Site Location Context (Background Mapping Source: Bing Maps)

14.3.1 Landfall Context

The proposed landfall at Johnstown North comprises part of two undulating agricultural fields along the western side of the coast road behind the sea cliffs and otherwise surrounded by farmland in pasture. The boundary with the coast road is c. 300m in length and comprises a mix of gorse, scrub and bramble vegetation and the terrain within the fields rises gently from the road.

The landfall extends to the High Water Mark (HWM) along the coast however the cable connections between the fields and the coast will be underground and constructed by Horizontal Directional Drilling (HDD).

14.3.2 Cable Route Context

The proposed cable will be underground for its entire length, and the majority of the route will traverse agricultural lands, with five public road and eight watercourse crossings. Within agricultural lands, the cables will pass beneath multiple dividing field boundaries, including at roads and watercourses, and defined by either trees, hedgerows or fencing. **Figure 14.2** below indicates the boundaries with vegetation that cross the route of the proposed cables.

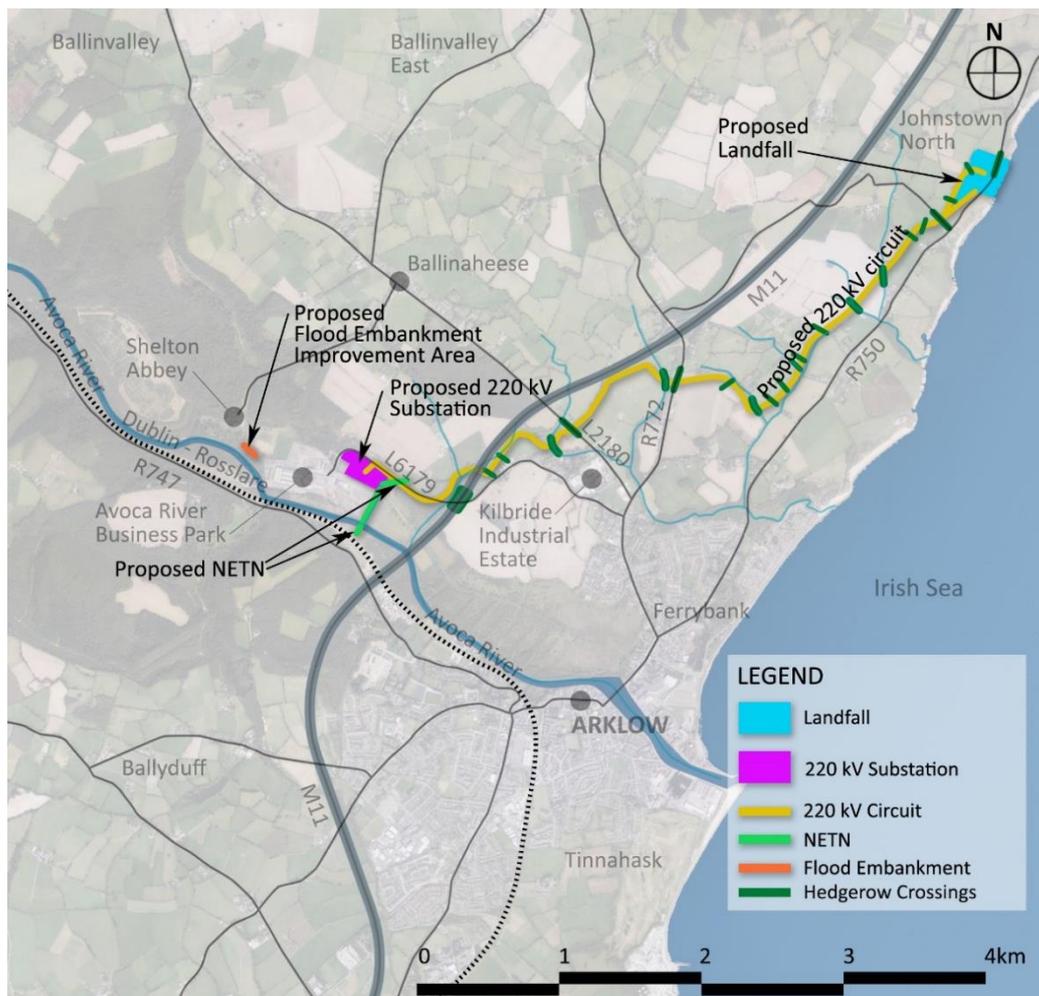


Figure 14.2: Vegetation boundaries crossing proposed cable route (Background Mapping Source: Bing Maps)

The landscape character is mostly one of gently undulating agricultural lands that lie east of the motorway and at the outskirts of Arklow town and leading to the coast. Vegetation comprising trees and hedgerows define a mix of small to medium sized fields, with the more mature and dense areas of woodland typically follow watercourses. There are a number of farm properties together with a cluster of dwellings and occasional individual dwellings in the locality.

Kilbride Industrial Estate is located between the outskirts of Arklow town and the motorway, and the Arklow substation is located just north of Kilbride on the western side of the Dublin Road.

Along the Kilbride Road, immediately east of the motorway, the stone walled ground of Kilbride Church (in ruins) includes an elevated historic graveyard with a distinctive pyramidal stone mausoleum. The *Howard Mausoleum* is dated 1785 and is a protected structure (RPS No. 16404006).

14.3.3 220 kV Substation Site Context

The site of the proposed 220 kV substation is part of the former Shelton Abbey Demesne that occupied the low lying (3.0 to 6.0m OD) floor of the Avoca River Valley, and on the northern side of the river corridor.

Shelton Abbey is a late 18th century mansion and protected structure (RPS No. 16404005). It is located towards the western extent of the former demesne that originally extended eastwards along the Avoca River as far as the Arklow Town Marsh where a pathway continued through the marsh to Arklow.

Shelton Abbey Demesne was sold in the early 1950's and NET Irish Fertiliser Industries (IFI) developed a substantial fertiliser manufacturing facility on the flat and low lying eastern part of the demesne. Shelton Abbey became an open prison in the early 1970s.

The IFI facility was closed in 2003 and was mostly dismantled, leaving the prilling and drying towers and a number of smaller structures together with extensive areas of flat tarmac marshalling and storage areas. Today, the western portion of these lands comprises a range of high ridged industrial sheds associated with Holfeld Plastics. A wood processing facility operates in the eastern portion of the lands, and a moderate sized electricity substation is located centrally along the northern side of the lands. Shelton Abbey continues to operate as an open prison.

The Avoca River, the R747 Vale Road, and the Dublin to Rosslare railway line run along the southern side of the valley. There are two dwellings c. 500m to the west, and a halting site to the southeast just before the motorway.

The industrial lands are accessed via the L6179 from Kilbride and over the M11 motorway and there is presently a c. 20m wide strip of mixed woodland along the northern part of the site area and adjoining the local road. To the east of the site area, leading towards the M11, the local road is lined on both sides by mixed woodland of varying depths and maturity.

Terrain to the immediate north of the industrial lands comprises the steep northern side of the valley, rising to c. 40m OD and mostly in mature woodland. The landscape then levels out to become a more gently sloping agricultural landscape. The southern side of the valley is also characterised by steeply sloping woodlands. A secondary wooded valley leads southwards from the Avoca River valley to Glenart Castle which is an early 19th century country house and gardens in private ownership and is a protected structure (RPS No. 16404001).

To the west, leading towards Woodenbridge, the valley narrows considerably and the richly wooded valley slopes rise to 100m OD and more creating a strong sense of enclosure to the valley. To the east, towards Arklow town and the coast, the landscape opens up and becomes much flatter, with the Arklow Town Marsh and Arklow on the northern and southern sides of the river.

The elevated M11 motorway spans the Avoca River valley just east of the industrial lands. High voltage electricity towers and overhead lines are also noticeable in the landscape, with the larger 220 kV line crossing the valley just west of the motorway via a series of tall overhead line support towers.

The proposed substation site will occupy the north eastern part of the industrial lands, adjoining the existing substation, and set against the base of the steep northern face of the valley, c. 800m east of Shelton Abbey. A pair of 110 kV overhead lines run from the existing substation in a north-easterly direction to the main Arklow substation close to the Kilbride Industrial Estate on the northern side of Arklow. There is an existing planning permission for the development of a data centre facility on the eastern part of the site, Reg. Ref: 18/940.

14.3.4 National Electricity Transmission Network (NETN) Connection Context

An overhead line (OHL) connection from the new proposed 220kV transmission compound to the existing 220kV NETN will be required. This connection will be via a 'loop in' arrangement consisting of a northern loop-in to the transmission network of approximately 270m and a southern loop-in to the transmission network of approximately 350m in length. The southern connection will extend south across the Avoca River where an existing 220kV tower is currently situated.

The receiving environment of the NETN is the same as that of the 220kV substation.

14.3.5 Landscape Planning Context

The proposed development is within the administrative area of Wicklow County Council, and development is guided by the Wicklow County Development Plan 2016-2022, (WCDP).

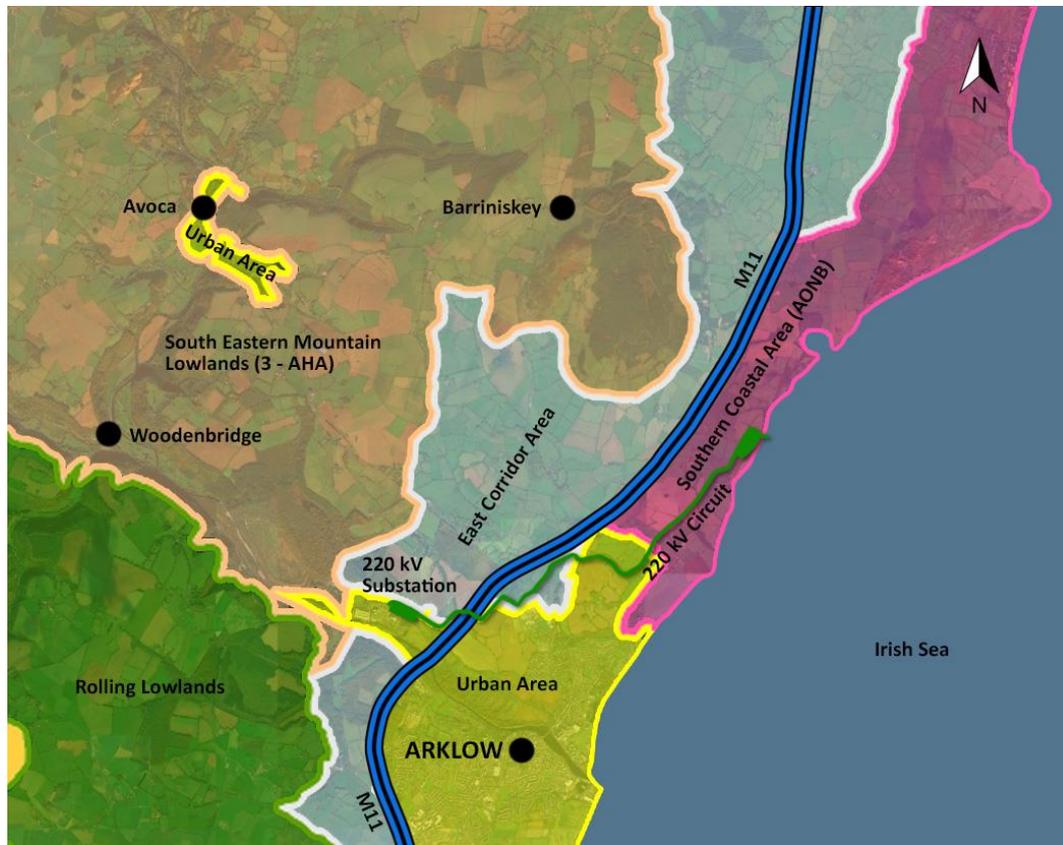


Figure 14.3: Landscape Category Areas (Source: WCDP 2016-2022, Map 10.13)

The WCDP, Appendix 5, Landscape Assessment, identifies a hierarchy of six distinct Landscape Categories throughout the County and within those, 15 Landscape Character Areas (LCAs).

The proposed development falls within three Landscape Categories. The proposed 220 kV substation and NETN site is within the *Urban Area* category and bordering the *East Corridor Area* category. The southern portion of the cable route runs through sections of the *Urban Area* category and of the *East Corridor Area* category, and the northern portion including the landfall site is within the *Southern Coastal Area (AONB)* category.

The settlement hierarchy of the WCDP designates Arklow town as a Level 3 settlement, or large Growth Town II and as such is within Landscape Category No. 6, or *Urban Area*, that applies to all settlements of Level 1-6 defined in the Wicklow Settlement Hierarchy.

Section 4.5.6 of the WCDP Landscape Assessment states that *‘In terms of landscape classification, these settlements have already been deemed suitable for development (of the type allowed by the settlement strategy and the development standards of this plan) and the impacts on the wider landscape of such development has already been deemed acceptable’*. Table 1 describes the characteristics of Urban Areas *‘As per the provision of the County Development Plan and the provisions of any Local Area, Town or Settlement plan for each area.’*

The Arklow and Environs Local Area plan 2018-2024 identifies the former IFI factory site at Shelton Abbey as an *‘Employment Opportunity Site’* given its strategic infrastructure assets.

The *East Corridor Area* category comprises the M11 corridor and for the most part runs through the more low lying and accessible tracts of land. It is the main connection between the major towns along the east coast of the County and is considered to be of *Medium Vulnerability*.

The *Southern Coastal Area* (AONB) category is described as comprising *‘...lands south of Wicklow Town extending as far as south of Arklow Rock. The coastal area is dominated by low boulder clay headlands interspersed with small shingly coves and extensive sandy beaches and dunes, the most well-known being at Brittas and Clogga. Along the way are rocky cliffs at Wicklow, Mizen and Arklow Heads. The area provides for a continuous prospect and numerous views from the coast road out to sea. Sand dunes are a dominant feature of the ‘soft’ coastline. The area has a rich coastal biodiversity of habitats and species protected through National and EU designations at Maherabeg Dunes and Buckroneys Brittas Dunes and Fen (NHA and SAC) and Arklow Rock/Askintinny NHA. This landscape area is important not just from a landscape or habitat perspective, but also as an increasingly important area for recreational activities, the development and promotion of which must be managed appropriately’*.

It is noted that the eastern boundary of the *South Eastern Mountain Lowlands* category Area of High Amenity is at Shelton Abbey and this area extends to the west and north to include the undulating mountain lowlands and valleys at Woodenbridge, and Avoca, and beyond to Aughrim and Rathdrum.

14.3.6 Views and Prospects

The WCDP 2016-2022, **Figure 10.14**, Views of Special Amenity of Special Interest, identifies 48 specific view locations that are of special amenity or interest. VP No. 23 is the only such view within the visual context of the proposed development and is from the N11 c. 1.5km north of Johnstown North and is a view towards the sea and coast.

Figure 10.15 of the same document also identifies routes with prospects of special amenity value or special interest.

There are a number of these within c. 5km radius of the proposed development including parts of the N11 and Coast Road, roads around Barriniskey, Woodenbridge and Avoca, and also along part of the L2180 Beech Road to the north of the proposed substation site.

These are shown on **Figure 14.4** below.

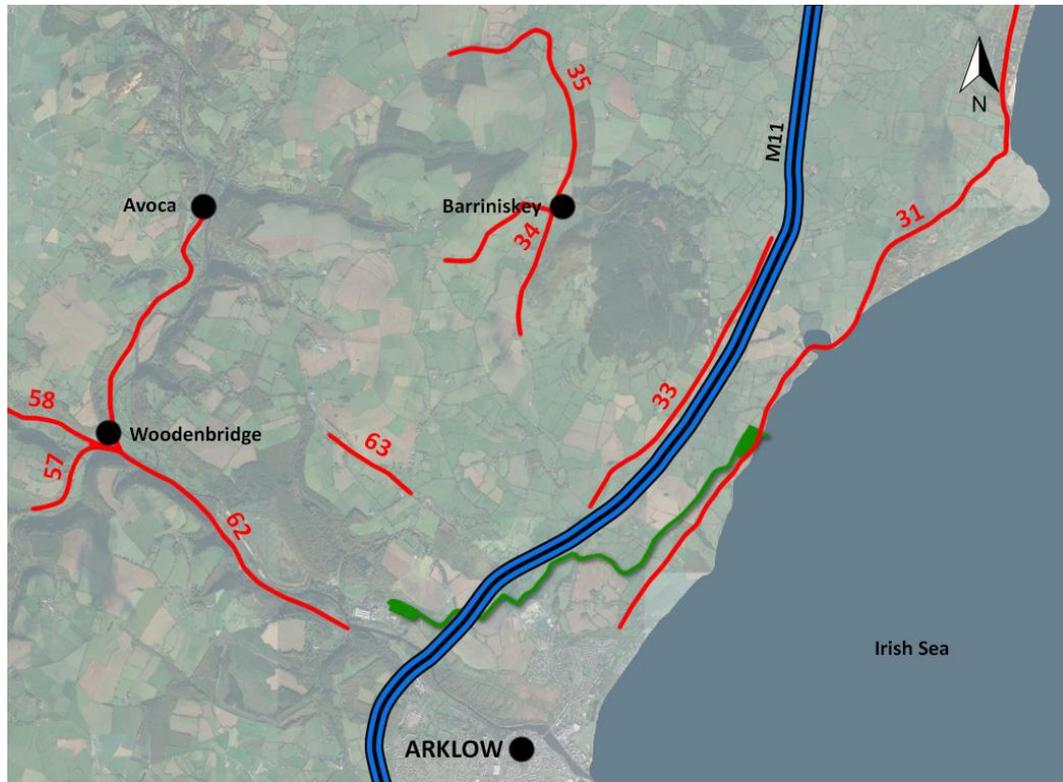


Figure 14.4: Prospects of Special Amenity Value or Special Interest (Source: WCDP Map 10.15)

No.	Description
31	R750 Wicklow to Arklow. Prospect towards sea from Coast Road
33	N11 south of Scratanagh Cross Road. Prospect of Ballymoyle Hill
34	L6171 and L2172 at Barraniskey, Arklow. Prospects of Webbs River Valley and Arklow
35	L2172 and L6167 at Crone Upper, Redcross. Prospect to Northeast and east towards Wicklow head and coast
57	L2197 at Coollgarrow. Prospect of Goldmine River valley.
58	R747 from Woodenbridge to Coates Bridge, Auhtrim. Prospect extending from Woodenbridge with tree lined valley and good river focus
62	R747 Vale of Avoca east of Woodenbridge. Prospect of both sets of Vale of Avoca including Avoca River Valley
63	L-2180-48 from Raheen to Sheepwalk. Prospect of Vale of Avoca

14.3.6.1 Other Designations

There are no Tree Protection Orders (TPOs), proposed Natural Heritage Areas (pNHAs), Special Areas of Conservation (SAC) or Special Protection Areas (SPAs) directly pertaining to the proposed development areas.

Shelton Abbey Demesne is an historic designated landscape, NIAH Site ID No. 4251. The majority of the lands have been substantially modified, and the NIAH survey notes that '*a factory complex now dominates this site*'.

14.3.6.2 Landscape and Visual Significance and Sensitivity

Landfall Site

The proposed landfall at Johnstown North comprises part of two undulating agricultural fields along the western side of the coast road behind the sea cliffs and otherwise surrounded by farmland in pasture. The site also extends under the coast road and to the High Water Mark however the cable connections will be installed underground using Horizontal Directional Drilling. The boundary with the coast road is c. 300m in length and comprises a mix of gorse, scrub and bramble vegetation and the terrain within the fields rises gently from the road.

The site area lies within the *Southern Coastal Area (AONB)* landscape category and is considered to be of high landscape sensitivity and of medium visual significance.

220 kV Cable Circuits

The proposed 220 kV cable circuits are routed through agricultural lands and small settlement areas towards the coast. The cable circuits will be entirely underground, with minimal expression above ground in the form of manhole covers, signage and localised access tracks.

Along the 6.0km route, landscape sensitivity varies from low towards the associated substation development to high as it enters the *Southern Coastal Areas* landscape category to terminate at Johnstown North. Visual receptor sensitivity also ranges from low to high as it passes through industrial and infrastructural areas, through settlements and to the coastal area.

Immediately west of the M11, approaching the 220 kV substation and NETN connection site, the local road is lined on both sides by mixed woodland of varying depths and maturity.

220 kV Substation and NETN Connection

The proposed development of the 220 kV substation and NETN connection will be located on lands within the eastern part of an established brownfield industrial facility. The substation development will occupy the northern portion of this site area, with the NETN connection at the eastern side of the compound, and will be set against the steep wooded terrain of the valley behind it.

The formation level of the development sites is c. 3.3m OD. The face of the valley behind it rises to 40m OD with substantial woodland cover and the terrain then continues to rise gently to over 50m OD. The southern side of the valley rises to similar levels. It is more heavily modelled and undulating than the northern side but has more expansive and dense woodland cover.

To the west, the valley quickly becomes more enclosed and remote from the industrial area, and to the east, the elevated motorway and overhead line infrastructure clearly signal the transition from the mountain and rolling lowlands to the urban area of Arklow.

By virtue of its low setting within the valley, the proposed substation and NETN connection is substantially secluded from the wider and more elevated landscape to the north and south and the Avoca River Valley leading westwards is quickly enclosed by a combination of wooded valley faces and the twisting nature of the river and road leading through it.

The Vale Road and the Dublin to Rosslare railway line run along the southern side of the valley past the industrial lands, and the presence of the lands does become apparent as the Vale Road approaches the lands as taller structures, overhead line towers and the motorway overbridge start coming into view. The site is most visible from the elevated M11 motorway to the east and particularly from the northbound carriageway, however the open portion of the bridge span is less than 300m and observers are normally travelling at motorway speeds.

The sites of the proposed 220 kV substation and NETN connection are within the *Urban Area* landscape category, have established industrial uses and are considered to be of low landscape sensitivity and low to medium visual significance.

14.4 Characteristics of the Proposed Development

14.4.1 Landfall Site

The landfall site will be located at Johnstown North and will provide an underground connection between the onshore and offshore infrastructure. Development will include:

- Temporary works including establishment to include two temporary construction compounds of c. 70m x 70m (HDD compound) and 125m x 120m (temporary cable construction compound) and associated access to support HDD operations and construction of the north eastern end of the onshore cable respectively and including temporary cut and fill levelling works;
- Excavation, stockpiling and construction of two underground Transition Joint Bays each comprising a concrete chamber of c. 20.0m x 5.0m x 2.5m deep and 2 No. surface manhole access covers;
- Decommissioning of site compounds and reinstatement of disturbed landscape and vegetation together with planting of 16,000m² of biodiversity enhancement planting in adjacent to the HDD compound.

Full details of the proposed landfall facility are included in **Chapter 5 Description of Development**.

14.4.2 220kV Cables

The proposed 220kV cable circuits will be installed underground for a distance of c. 6.0km, using primarily open cut trenching methodologies, or, where the cable circuits cross particular roads and watercourses, Horizontal Directional Drilling (HDD) will be used. Development will include:

- Open cut trenching of pairs of trenches within an overall temporary cable construction corridor that will typically be 30m wide to accommodate construction of the trenches, temporary stockpiling, working areas, and haulage and access routes, and leaving a typically 15.0m wide permanent access wayleave;
- Where trenches pass through field boundaries incorporating trees or hedgerows, localised tree felling and hedgerow removal will be required to facilitate construction.
- Underground joint bays at c. 700m intervals, comprising an underground concrete chamber c. 6.0m x 2.5m x 2.0m with a surface manhole access cover. There will be 10 joint bays per cable circuit, or a total maximum of 20 joint bays.
- Each joint bay will also have an associated communications chamber comprising a c. 1.5m x 1.1m x 0.9m deep concrete chamber with a surface manhole access cover.
- HDD will only be used locally where open cut trenching is not appropriate and will involve horizontal drilling and reaming of a borehole and pull-back of a duct for each cable circuit. Cables will typically be from 5m to 20m apart, and drilling depth will vary depending on location up to a maximum depth of c. 25m.
- The M11 crossing will be constructed using either HDD or via the existing underpass. If HDD is used, the HDD compound will require clearance of an area of c. 4,000m² of immature woodland along the northern side of the access road from Kilbride to the Avoca River Park Industrial Estate.
- Reinstatement of excavated surfaces, and re-planting of vegetation.
- Planting of deep-rooted plants or construction of buildings is precluded.
- Construction of permanent access tracks for construction and maintenance phases.

Full details of the proposed cable circuits are included in **Chapter 5 Description of Development**.

14.4.3 220 kV Substation

The proposed substation will occupy approximately 4ha. site within the north eastern part of the existing industrial facility.

Development will include:

- Removal of existing hard surface and compaction of underlying ground;
- Clearance of mixed woodland and vegetation along site boundaries;
- Build up of site area (including remediation strategy) with geotextile membranes and granular fill material and incorporating drainage and finishing layers to establish a suitable formation base at up to 3.8m OD for the substation facility;
- A connection compound incorporating a 220 kV Gas Insulated Switchgear (GIS) substation building c.50.0m x 23.75m and 15.9m high 61.0m x 18.5m and 17.0m high, 2 No. Static Synchronous Compensator buildings, up to c. 10.0m in height, each with control buildings and transformers, lightning arrestor masts up to 30.m high, a 50.0m high telecommunications mast, and other transformers, filters and regulation equipment;
- A transmission compound incorporating a 220 kV GIS substation building c. 61.0m x 18.5m and 17.0m high, and associated house transformer, generators and MV unit substation, together with 2 No. 220kV towers up to 40.0m high to facilitate 'looping in' of the existing 220 kV overhead line to the east of the site to connect to the proposed substation;
- Associated site development works including perimeter security fencing and lighting and CCTV;
- Surface water attenuation is incorporated into the sub base build up and will discharge into the existing surface water drainage ditches and canal;
- Localised raising of an existing flood defence embankment c. 500m upstream and for a length of c. 75.0m to increase the flood defence level from the existing level of c. 5.8m OD to c. 6.5m OD

Full details of the proposed substation are included in **Chapter 5 Description of Development**.

14.4.4 NETN Connection

The proposed NETN connection will occupy an area from north east of the existing industrial facility, immediately east of the 220kV substation and extend south to lands across the Avoca River. Development will include:

Replacement of 2 No. existing overhead line towers with 2 No. new 220kV overhead line towers up to 40.0m high and diversion of cables to loop into the transmission compound and connect to existing towers to the north and south. Full details of the proposed NETN connection are included in **Chapter 5 Description of Development**.

14.5 Likely Significant Effects

New development has the potential to impact on the immediate site environs or the surrounding site context, or both.

The quality of impacts can be positive, neutral or negative, and the significance of impacts is determined by the particular characteristics of the development and the existing context.

The proposed development will involve the construction of a substantial 220 kV substation and associated NETN connection within an established industrial context, together with c. 6.0km underground cable circuits connecting the new substation to the underground Transition Joint Bays at the landfall at Johnstown North.

Landscape and visual effects are discussed below, during construction, in operation and at decommissioning.

14.5.1 ‘Do-Nothing’ Effects

In the scenario where the proposed development does not proceed as planned, none of the effects as set out in this chapter would occur. Under the ‘do nothing’ scenario, the landscape receiving environment would remain as described in **Section 14.3** and no significant effects would arise.

14.5.2 Construction Phase

Construction is anticipated to start in 2023 and finish in 2024 subject to planning approval and obtaining the relevant permits and licences. Further information on anticipated timelines can be found in **Chapter 6 Construction Strategy**.

Landfall Site

Construction activity that may give rise to landscape or visual impacts will include:

- Site establishment to include two temporary construction compounds of c. 70m x 70m and c. 125m x 120m to support HDD operations and construction of the eastern end of the onshore cable respectively and including temporary cut and fill levelling works;
- Security fencing, hoarding, temporary access tracks, site offices, welfare facilities, material handling and storage facilities, bunded fuel stores and vehicle parking areas;
- Excavation, stockpiling and construction of two underground Transition Joint Bays each comprising a concrete chamber of c. 20.0m x 5.0m x 2.5m deep and 2 No. surface manhole access covers;
- HDD drilling underground and undersea to facilitate connection of the offshore export cables to the onshore infrastructure;
- Operation of construction machinery and vehicles;
- Temporary traffic management facilities on the coast road;
- Construction vehicle movements associated with import and export of materials;
- Installation of cables;

- General construction activity including personnel and vehicles;
- Back filling excavations using stock piled material;
- Decommissioning of site compounds and reinstatement of disturbed landscape and vegetation; and
- Re-grading fields to original profiles and preparation for seeding and reinstatement of disturbed landscape and vegetation.

220 kV Cable Circuits

Construction activity associated with the installation of the 220kV cable circuits that may give rise to landscape or visual impacts will include:

- Site compound establishment, including temporary construction compounds, together with associated welfare and administration facilities, storage compounds, lighting, vehicle parking and associated access tracks;
- Establishment of temporary cable construction corridors and access tracks including felling of trees and hedgerows at boundaries where required;
- Establishment of temporary fencing along the route;
- Excavation and stockpiling for the joint bays and for HDD drilling areas;
- Excavation and stockpiling for trenches;
- Clearance of c. 4,000m² of immature woodland for the M11 crossing HDD compound;
- Operation of HDD compounds;
- Operation of construction machinery;
- Temporary traffic management facilities on public roads;
- Construction vehicle movements associated with import and export of materials;
- Installation of cables in trenches and chambers;
- General construction activity including personnel and vehicles;
- Back filling excavations using stock piled material;
- Making good disturbed grounds and preparation for seeding and planting;
- Reinstatement landscaping.

220 kV Substation and NETN Connection

Construction activity at the proposed substation and NETN connection that may give rise to landscape or visual impacts will include:

- Site establishment including contractors compound, security fencing together with associated welfare and administration facilities, storage compounds, lighting, vehicle parking and associated access tracks;
- Clearance of perimeter mixed woodland and vegetation;

- Site clearance to include removal and disposal of existing tarmac surface;
- Compaction of sub base materials to prepare for new substation platform;
- Construction of substation platform to include installation of layers of gas and surface water drainage material with geotextile separating membranes (remediation strategy), and installation of final top layer;
- Raising the level of the existing flood defence embankment upstream of the substation site including import and construction of materials along the c. 75m length of the embankment;
- Erection of steel frames and structures associated with building and other infrastructure components;
- Erection of two new overhead line towers associated with the NETN connection within the substation site;
- Decommissioning of two existing 220kV towers east and south east of the substation site and existing span between these towers;
- Erection of two new 220kV towers north east and south east of the substation site;
- Re-stringing activities associated with NETN connection;
- Completion of building structures to include facades and roofs;
- Installation of equipment in buildings and compound areas;
- Operation of construction machinery including cranes;
- Construction vehicle movements associated with import and export of materials;
- General construction activity including personnel and vehicles.

Effects on Landscape Character

The landfall facility will be located within the designated *Southern Coastal Area (AONB)* category which is of high landscape sensitivity. Construction will be localised to the landfall site area however in that context will be large in magnitude giving rise to short term, localised, major and adverse effects on landscape character. It is noted however that the landfall facility compounds are enclosed within distinct fields and will be surrounded by a hoarding.

Construction of the proposed 220kV underground cable circuits will give rise to minor short term localised direct adverse effects on landscape character by virtue of the removal of trees and hedgerows where the route crosses roadside and field boundaries and of disturbance from construction activity within the landscape. The linear nature of the installation is such that construction activity will be localised and rolling, with the more substantial activity being focussed on the underground chambers and the HDD sites and including the clearance of the immature woodland area for the M11 HDD compound. Effects on landscape character will be short term, localised, negative and ranging from minor to moderate.

The site access and construction compound directly opposite the grounds of Kilbride Church (in ruins) and *Howard Mausoleum* (RPS No. 16404006) will result in short-term major adverse effects on the setting of the historic site.

Construction of the proposed 220 kV substation and NETN connection will give rise to short term and substantially localised effects on landscape character. Within the local context of an established industrial facility, the magnitude of development is considered medium. Construction activity including movement of construction vehicles and gradual emergence of structures will result in localised disturbance, however, effects on landscape character are considered minor and negative/neutral. Raising the existing flood embankment will give rise to temporary localised disturbance along the northern face of the existing embankment however these works will be minor and neutral.

In the wider landscape setting, and by virtue of the site area being substantially secluded within the Avoca River Valley, effects on landscape character are considered negligible or minor and neutral.

Effects on Views

The landfall facility will be located within the designated *Southern Coastal Area (AONB)* category, however is will be localised to the specific site area that is of medium visual sensitivity. The magnitude of works relative to the site will be large giving rise to short term, localised, moderate adverse effects on views. It is noted that the landfall facility temporary construction compounds are on the inland side of the coast road and will not obstruct views of the coast from the coast road.

Construction of the proposed 220 kV underground cable circuits will result in visual disturbance within agricultural fields and where trees and hedgerows are removed to facilitate construction and to cross local roads and for the HDD compound for the M11 crossing. Effects on views will be localised, short term, negative and minor to moderate.

Construction of the proposed 220 kV substation and NETN connection will give rise to localised, short term, moderate and negative effects on views along the Vale Road to the south of the site area. The site area is partly visible from Shelton Abbey, however the view has already been substantially modified. In the wider landscape, the secluded nature of the site is such that visual effects will be negligible and neutral.

14.5.3 Operation Phase

Effects on Landscape Character

As the landfall facility, the infrastructural elements will be entirely underground save for the surface manhole access covers (4 in total) and associated permanent access track. Post-construction, an area of 16,000m² of biodiversity enhancement coastal woodland will be planted adjacent to the HDD compound. Infrastructural development at this location will have negligible and neutral effects on landscape

character and the coastal woodland planting will have a positive effect on landscape character.

The proposed 220kV cable circuits will be underground, with surface manhole access covers in the vicinity of the underground joint bays (20 joint bays in total) including associated permanent access tracks and 750mm high marker posts to highlight the presence of underground cables. In operation, the cable circuits will typically have negligible effect on landscape character.

Where the cable circuit alignment passes beneath hedgerows and trees such vegetation will be removed and boundaries replaced with shallow rooting hedgerow species above the underground cable circuits. Where such boundaries occur along public roads, there will be localised medium term minor adverse effects of the landscape character of such roadways. If HDD is used to cross the M11, the absence of the existing immature woodland will give rise to medium term moderate adverse effects at that location.

The proposed 220kV substation and NETN connection will occupy part of an established industrial facility. The development will represent an intensification of the industrial character of the site area as may be perceived from the local site context including the portion of the Avoca River Valley to the west and east of the site area.

The GIS substation buildings will be the largest buildings, however these are comparable in volume and overall character to the existing Holfeld Plastics sheds. Taller elements within the development include a communications mast of up to 50m in height and a series of lightning arrestor masts of up to 30m in height, as well as two new overhead line towers up to 40.0m in height. These elements, however, are slender in form and are consistent with other similar structures further west along the railway line and are generally less noticeable than the electricity towers within the site locality. The NETN connection will include two new overhead line towers up to 40.0m in height however, these will replace two similar existing nearby towers. The existing 220 kV overhead lines will be realigned to loop into the NETN facility via the new towers.

The site is considered to be of low to medium sensitivity, and the development of medium magnitude, and will give rise to minor or moderate effects on landscape character.

Effects on Views

The underground landfall facility at Johnstown North will have negligible effects on views once the temporary construction compounds have been decommissioned and the fields reinstated. Establishment of the proposed 16,000m² of biodiversity enhancement coastal woodland will be consistent with the prevailing coastal landscape and will have a positive effect on views.

The proposed 220 kV underground cable circuits will typically have negligible effects on views by virtue of being underground, however the replacement of existing roadside and field boundaries with shallow rooting hedgerow species will give rise to localised minor adverse effects on views. If HDD is used to cross the M11, the absence of the existing immature woodland will give rise to localised

medium term moderate adverse effects along the Kilbride Road and adjoining local road.

The proposed 220 kV substation and NETN connection will give rise to localised, minor and negative effects on views along the Vale Road to the south of the site area. The site area is partly visible from Shelton Abbey however the view has already been substantially modified. In the wider landscape, the secluded nature of the site is such that visual effects will be negligible and neutral.

14.5.4 Decommissioning

On decommissioning, the cables and associated ducts at the landfall and along the cable circuit will most likely remain in-situ as the potential disruption of excavating and removing these elements, both during the decommissioning activity and in the short to medium term thereafter would give rise to greater landscape and visual and other environmental effects than can be justified by the recycle value of the material.

It is expected that the 220kV substation would have a service life of 50 years or more after which it may be either refurbished, replaced or decommissioned. If it is decommissioned, all buildings, structures and equipment above ground would be removed giving rise to minor positive landscape and visual effects.

14.6 Mitigation Measures and Monitoring

The proposed development is designed to meet the specific technical specification requirements for infrastructure of this nature.

Mitigation in relation to the landfall site and the underground cable circuits primarily relates to constructing the infrastructure underground and to localising construction operations. There will be areas along the route where vegetation is removed and cannot be replaced. An area of 16,000m² of biodiversity enhancement coastal woodland will be planted at the landfall site to ensure there is no net-loss of vegetation as a result of the development.

The objective of the coastal planting is to establish a mixed woodland structure supporting a semi-natural habitat. This will be achieved by using a mixture of native species to provide a canopy, subcanopy and ground layer as the woodland matures. Native woodlands with this type of structure are generally of higher value for flora and fauna and as it matures it will become a locally important habitat for flora and fauna. Some open areas will be left unplanted to form small glades as the woodland matures. All trees will be of Irish origin. The planting scheme can be broadly categorised as follows:

- Main woodland planting area with Alder, Blackthorn, Hawthorn, Sessile Oak *Quercus petraea*, Whitebeam, Hazel, Downey Birch *Betula pubescens*, Holly, Rowan *Sorbus* spp. and Scots Pine *Pinus sylvestris*.
- Perimeter Edge Mix with Alder, Blackthorn, Hawthorn, Wild Privet *Ligustrum vulgare*, Holly, Spindle and Guelder Rose *Viburnum opulus*.

The site selected for the substation and NETN connection is a brownfield site within an established industrial facility and enjoys substantial screening from the wider landscape setting by virtue of being set low within the valley. The specific site area is also behind the existing industrial buildings and is more remote from the Vale Road and Dublin to Rosslare railway line.

Building elements within the substation are designed as simple forms with metal panel cladding panels that will be finished in a matt dark green/grey colour that will be visually absorbed by the mixed woodland backdrop on the northern valley face. Perimeter security fencing will also be a dark grey/green finish. Site lighting

will be provided using lamp standards up to 6.0m in height and fitted with high cut-off LED luminaires so as to minimise light spill. Lighting will typically be switched off during the hours of darkness and will be operated by motion sensors.

14.6.1 Mitigation During Construction

The substation site, temporary construction compounds and temporary work areas will be managed in an orderly manner, with security fencing or hoarding as appropriate kept in good condition, and vehicular access managed to avoid congestion outside the development site. All vehicular traffic leaving work areas will be clean, and the local road network kept clean in accordance with the Construction Environmental Management Plan (CEMP), see **Appendix 6.1**.

Where trees and hedgerows are to be removed, tree protection fencing in accordance with BS 5837: 2012 will be installed to protect adjacent trees from construction traffic or activity to ensure their integrity and vitality. Excavated topsoil and subsoil will be stockpiled appropriately for later backfilling and topsoiling.

Following completion of the civil works, all excavations will be backfilled using stockpiled materials, and ground surfaces prepared for seeding. Trees and hedgerows removed to facilitate construction corridors will be replaced with similar species where possible. An area of coastal woodland planting will be provided at the landfall site extending to 16,000m² and comprising native woodland species of Alder, Blackthorn, Hawthorn, Sessile Oak *Quercus petraea*, Whitebeam, Hazel, Downy Birch *Betula pubescens*, Holly, Rowan *Sorbus* spp. and Scots Pine *Pinus sylvestris*, together with perimeter edge mix of Alder, Blackthorn, Hawthorn, Wild Privet *Ligustrum vulgare*, Holly, Spindle and Guelder Rose *Viburnum opulus*.

At field boundaries along the cable route, boundaries will be replanted with shallow rooting hedgerow species above the underground cable circuits. At the 220kV substation, the space between the main security fence and the outer fence will be planted with shallow rooting hedge and shrub species.

14.6.2 Mitigation During Operation

The design of the various elements of the proposed development has been developed in order to meet the specific technical requirements of the infrastructure while minimising adverse landscape and visual effects as described above. Management and maintenance of mitigation features thereafter will ensure their effectiveness in the medium and longer term. Maintenance of site lighting, incorporating horizontal cut-off light fittings, is also important to ensure light spill is minimised.

14.6.3 Monitoring During Construction

During construction, the contractor will ensure that the site areas, site compounds and temporary working areas, including interfaces with public roads, are managed and maintained in an orderly manner and in accordance with the CEMP, with

particular care and attention to perimeter areas that might give rise to adverse landscape or visual effects from outside the working areas, including public roads.

Replacement trees and hedging will be appropriately staked and protected from damage.

14.6.4 Monitoring During Operation

The contractor will be required to include a 24-month defects liability clause for replacement landscaping and any planting that fails to establish or dies will be replaced. The coastal woodland planting at the landfall site will incorporate stock proof fencing and have a 5 year aftercare programme to ensure proper establishment of the woodland.

Orderly operation and maintenance of the substation site area will ensure the facility remains as built, any defects repaired promptly, and lighting fixtures maintained to ensure minimal light spill.

14.7 Cumulative Effects

A tiered approach to the cumulative assessment is adopted in which the proposed development is considered cumulatively with other projects as follows:

Tier 1

- Arklow Bank Wind Park (ABWP) Phase 2 Offshore Infrastructure;
- ABWP Phase 2 Operations and Maintenance Facility;
- EirGrid Grid Upgrade Works; and
- Irish Water Upgrade Works.

Tier 2

- Other relevant projects currently under construction;
- Other relevant projects with consent;
- Other relevant projects in the planning process;
- Other existing projects that were not operational when baseline data were collected; and,
- Possible Flood Defence Embankment Works in the Avoca River Business Park.

In relation to potential landscape or visual effects, the developments of most relevance are considered to include:

- Tier 1: ABWP Phase 2 Offshore Infrastructure;
- Tier 2: The permitted Arklow Wastewater Treatment Plant (WwTP);
- Tier 2: The proposed Arklow Flood Relief Scheme (FRS);
- Tier 2: The permitted Data Centre development on the Shelton Abbey Lands;

- Tier 2: The proposed revised Data Centre development on the Shelton Abbey Lands and the separately proposed but associated 110kV substation; and,
- Possible Flood Defence Embankment Works in the Avoca River Business Park.

The ABWP Phase 2 Offshore Infrastructure project will be located within the Arklow Bank Wind Park which covers an area of 27km x 2.5km in a north to south alignment to the east of Arklow town and 6km to 13km from the coastline. The landscape/seascape and visual effects of the offshore development will vary considerably from onshore depending on the location of any particular vantage point and the characteristics of intervening topography, vegetation and buildings. The more open views are likely to be from coastal areas with minimal intermediate obstruction and from more elevated inland locations that afford longer distance and panoramic views of the combined landscape and seascape. The offshore infrastructure will vary from being intermittently to more openly visible and where visible, will be perceived as a distinct development set within the open seascape and skyline of the coast.

By contrast, the underground nature of the landfall site and cable circuits and the relatively secluded site area of the 220kV substation and NETN connection are such as to limit the potential influence on the landscape and visual environment to their more immediate context. At elevated locations, where views may encompass both landscape and seascape, any visible elements of the onshore development will be substantially absorbed within the more complex visual context of the rural landscape and will be substantially less noticeable than the more distinctive offshore development. It is considered that potential cumulative landscape or visual effects will be negligible or minor.

The proposed OMF will be located within the harbour area of Arklow town at a distance of c. 3.0km east of the M11 motorway. It is considered that potential cumulative landscape or visual effects will be negligible.

The permitted Arklow WwTP project and the proposed Arklow FRS project are located within the urban area of Arklow town at a distance of c. 1.5km to 3.0km east of the M11 motorway. It is considered that potential cumulative landscape or visual effects will be negligible.

The permitted data centre development, and also the proposed revised data centre development on the same site, includes three distinct data storage buildings, and it is noted that the northernmost of these buildings, in both versions of the development, is on the same site area as the proposed 220 kV substation. It is understood that should both developments proceed, the developers of the data centre project will omit the northern data storage building.

The permitted data storage facility will be located immediately south of the proposed 220 kV substation. It will present a large scale contemporary clean lined high tech industrial facility between the proposed substation and the Vale Road, Avoca River and the Dublin to Rosslare railway line.

The data centre development will have a substantially larger footprint than the substation and will be characterised as a large scale and enclosed high tech

building facility with smaller scale ancillary components. The currently proposed revised data centre development occupies substantially the same site area as the permitted scheme. While its buildings are not as high as the permitted scheme, it nonetheless presents as being similar in character and magnitude.

The permitted and proposed data centre developments will represent a greater intensification of industrial development at the Avoca River Business Park as perceived and viewed primarily from along the Vale Road and from the M11 overbridge. The separately proposed 110kV substation development associated with the permitted and proposed data centre developments will be located to the immediate northwest of the data centre and immediately west of the proposed 220kV substation. It is of modest scale relative to the 220kV substation and the data centre developments and will be visually absorbed within the industrial setting. The cumulative landscape and visual effects of the permitted and proposed data centre developments and 110kV substation have been included in the photomontage views in **Appendix 14.1** and commentary on these is included in **Section 14.8** Residual Effects below.

The permitted data centre development will substantially screen the substation and NETN connection elements of the proposed development from the Vale Road. The proposed revised data centre development is notably lower than the permitted development and will be less visible. It will nonetheless be located between the Vale Road and the proposed 220kV substation and NETN. It is considered that potential cumulative landscape or visual effects of the proposed development in combination with the permitted or proposed data centre developments will not be significant.

Should maintenance and repair works to the existing flood embankment around the business park be required, such works will be localised to specific lengths of the existing embankment. It is understood that works are expected to include increasing the width of the embankment on the business park side so as to facilitate a corresponding increase in the top level of the embankment. Pending site investigation works, it may be necessary to introduce sheet piles along the centreline of the embankment to ensure stability. It is considered that potential cumulative landscape or visual effects of these works will not be significant.

14.8 Residual Effects

Residual effects of the proposed landfall and underground cable circuits are generally considered to be negligible by virtue of the underground nature of these elements.

The above ground elements are limited to localised permanent access tracks through agricultural lands, manhole access covers, marker posts and replacement of short sections of roadside vegetation with shallow rooted hedging which will have negligible or locally minor effects on landscape character.

Residual effects of the 220 kV substation and NETN connection are described with reference to a series of Accurate Visual Representations (AVRs) that are

included in **Appendix 14.1**. These are prepared from 11 view locations that are representative of the views towards the development in the local and wider landscape context. They include views from designated Prospects of Special Amenity Value or Special Interest to the north along the L2180 Beech Road and in the vicinity of Barriniskey, as well as a series of views along the Vale Road approaching from Woodenbridge and continuing past the site to the motorway overbridge. A view is also included from the motorway overbridge.

For each view location, the ‘As Existing’ (**Figure 14.x.1**), ‘As Proposed’ (**Figure 14.x.2**) and two ‘Cumulative’ versions (**Figures 14.x.3** and **14.x.4**) are included. The cumulative versions show the proposed development together with both the permitted and the proposed data centre developments. They do not include the offshore development as it is so remote from the onshore development however commentary is included in the sections below as appropriate.

In views where the proposed development will not be visible, its profile is shown in a red outline. On the cumulative views, if the permitted data centre is not visible its profile is shown in a yellow outline and the proposed data centre is shown in a green outline.

Views 1 and 2

Views 1 and 2 are from the L2180 Beech Road c. 1.2 km north of the development, and from designated Prospect No. 63. **Figures 14.1.1** and **14.2.1** show the ‘As Existing’ landscape and illustrate the substantially open agricultural landscape falling southwards towards the Avoca River Valley which is evident by density of woodland in the middle ground.

Figures 14.1.2 and **14.2.2** show the ‘As Proposed’ landscape, and include the profile of the proposed development in a red outline indicating that it will not be visible by virtue of being set at the low level of the valley and screened by the northern slopes of the valley.

It may be possible to see glimpse views of the tops of the two overhead line towers between intervening tree canopies in winter time, however these would be imperceptible in the wider landscape context which already includes other tower structures located on more elevated terrain.

Landscape and visual effects are considered to be negligible and neutral.

Figures 14.1.3 and **14.2.3** show the ‘Cumulative’ versions with the profile of the permitted data centre development in a yellow outline indicating that it will also be screened. **Figures 14.1.4** and **14.2.4** show the profile of the proposed data centre development in a green outline indicating that it will also be screened.

As the seascape is partly visible from these locations, elements of the offshore development may be visible however they will not be seen in combination with the proposed development.

Views 3, 4 and 5

View locations 3, 4 and 5 are from the L6171 and L2172 at Barraniskey c. 5.0km north of the proposed substation development, and within the designated *South*

Eastern Mountain Lowland Area of High Amenity landscape category, and from the designated Prospect No. 34.

Figures 14.3.1, 14.4.1 and 14.5.1 illustrate the ‘As Existing’ views from these locations as expansive views over the rolling agricultural lowlands sloping southwards towards Arklow town, the east coast and seascape, and to Tara Hill in County Wexford at over 18km distance. Like Views 1 and 2, the Avoca River Valley is discernible by virtue of the density of woodland along the valley.

The ‘As Proposed’ **Figures 14.3.2, 14.4.2 and 14.5.2** illustrate that the proposed development will not be visible by virtue of being set at a low level within the valley.

Similarly, the ‘Cumulative’ versions in **Figures 14.3.3, 14.4.3 and 14.5.3** together with **Figures 14.3.4, 14.4.4 and 14.5.4** illustrate that neither the permitted nor the proposed data centre developments will be visible.

Landscape and visual effects are considered to be none.

The seascape is visible in the distance from these locations and elements of the offshore development may be visible however they will not be visible in combination with the proposed development.

Views 6 to 10

This sequence of views is from Vale Road leading from west to east. View 6 is towards the eastern extent of the designated Prospect No. 64 and is where the more enclosed valley landscape begins to open up, and the sequence continues to View 10 which is just before the M11 motorway bridge. See **Figures 14.6.1, 14.7.1, 14.8.1, 14.9.1 and 14.10.1** which illustrate the ‘As Existing’ views from these locations.

From view location 6 eastwards, various elements of infrastructure including the communications mast, the railway line, the prilling and drying towers and the various industrial buildings on the former Shelton Abbey demesne become increasingly visible along the Vale Road. Equally the northern face of the valley and the more elevated agricultural land further north become apparent behind the industrial land.

Figures 14.6.2, 14.7.2, 14.8.2, 14.9.2 and 14.10.2 show the ‘As Proposed’ versions of Views 6 to 10 and illustrate that the revised overhead line alignment and towers associated with the NETN connection will be partially visible in place of those existing. In Views 6 to 9, the change between ‘As Existing’ and ‘As Proposed’ is difficult to discern and mostly relates to towers and overhead cables moving within the view.

The proposed substation compound and buildings will be mostly screened by a combination of intermediate vegetation and the railway line embankment. The GIS substation buildings will become partially visible in the vicinity of the halting site close to the motorway but will be set low in the landscape and viewed against the backdrop of the wooded valley face.

Effects on landscape character and on visual amenity will be minor and neutral.

Figures 14.6.3, 14.7.3, 14.8.3, 14.9.3 and 14.10.3 include the permitted data centre development that will become partially visible having passed the existing Holfeld buildings. The generator flue stacks present on the skyline however the main body of the buildings are set low and beyond the intervening built and natural elements, but are themselves screening the proposed substation and NETN connection. **Figures 14.6.4, 14.7.4, 14.8.4, 14.9.4 and 14.10.4** include the proposed data centre development which is lower than the permitted data centre and is less apparent. Cumulative effects on landscape character and on visual amenity are considered to be minor and negative.

View 11

View 11 is from the northbound carriageway of the M11 motorway as it begins to cross the Avoca River. **Figure 14.11.1** illustrates the expansive flat valley floor contained by the wooded slopes, and clearly shows the prilling and drying towers towards the western part of the industrial land. A number of industrial buildings are partially visible within the lands together with overhead lines and supporting towers.

Figure 14.11.2 includes the proposed development and illustrates the GIS substation buildings being partially visible against the northern face of the valley and the revised overhead line and tower structures are apparent. Effects on landscape character and on visual amenity will be minor and negative.

Figure 14.11.3 includes the permitted data centre development (excluding the northernmost of the three permitted buildings) and illustrates the low lying yet expansive nature of the development presenting as a strong horizontal element within the valley and punctuated by the taller flue stacks. **Figure 14.11.4** includes the proposed data centre development (also excluding the northernmost of the three permitted buildings) and illustrates the lower yet expansive nature of the revised development within the valley. Cumulative effects on landscape character and on visual amenity are considered minor or moderate and negative.

It is noted that the wind turbines forming part of the offshore ABWP Phase 2 are also likely to be visible from the M11 motorway overbridge however these will be part of the expansive townscape and seascape setting.

14.9 References

Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment

Planning and Development Act 2000, as amended

Planning and Development Regulations 2001, as amended

European Landscape Convention 2000

Wicklow County Development Plan 2016-2022

Arklow and Environs Local Area Plan 2018-2024

Environmental Protection Agency (EPA, 2017) *Guidelines on the Information to be contained in Environmental Impact Assessment Reports Draft*

Environmental Protection Agency (EPA, 2015) *Advice Notes for preparing Environmental Impact Statements. Draft*

Landscape Institute and the Institute of Environmental Management and Assessment (LI/IEMA, 2013) *Guidelines for Landscape and Visual Impact Assessment, 3rd edition, (GLVIA)*

Landscape Institute (LI, 2018) *Technical Information Note 05/2017 (Revised 2018) on Townscape Character Assessment (TCA)*

Department of Housing, Planning and Local Government (DHPLG, 2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (GEIA)*

Landscape Institute (LI, 2019) *Technical Guidance Note 06/2019 on Visual Representation of Development Proposals (VPDP)*