

14 Visual impact assessment

14.1 Introduction

This section has been prepared by ESB International in conjunction with URS Scott Wilson, who prepared the Visual Impact Assessment Report (**Appendix 11**). The report assesses the potential landscape and visual impacts associated with the construction, operation and decommissioning of the proposed Atlantic Marine Energy Test Site (AMETS) at Annagh, Co. Mayo. The landscape and visual assessment defines the landscape and viewer sensitivity within the study area, the magnitude of change and resulting significance of the visual impacts and impacts on landscape character. A full project description is provided in Chapter 4.

14.2 Methodology

The methodology used in this assessment is based on established best practice as described in the following guidelines:

- Environmental Protection Agency (2003), *Advice Notes on Current Practice in the preparation of EIS*
- The Landscape Institute and Institute of Environmental Management and Assessment (2002, 2nd ed.) *Guidelines for Landscape and Visual Assessment*
- Landscape Institute (2011) 'Photography and Photomontage in Landscape and Visual Impact Assessment' (Advice Note 01/11 March 2011)
- Department of Environment, Heritage & Local Government (2000) *Landscape and Landscape Assessment; Consultation Draft of Guidelines for Planning Authorities*
- Department of Trade & Industry (UK) in association with the Countryside Agency, the Countryside Council for Wales and Scottish Natural Heritage (2005) *Guidance on the Assessment of the Impact of Offshore Wind Farms; Seascape and Visual Impact Report*
- Countryside Council for Wales, Brady Shipman Martin and UCD (2001) 'Guide to Best Practice in Seascape Assessment'
- CAAS Ltd for Mayo County Council (2008) *Landscape Appraisal of County Mayo*
- Mayo County Council (2008–) *Mayo County Development Plan 2008-2014*
- A desk-based review was carried out to ascertain an appropriate study area and to identify potential landscape and visual impacts. This included
- Review of the preliminary and detailed design drawings of the onshore substation and the offshore wave energy converters under development, including marker buoys
- Preparation of a Zone of Theoretical Visibility map for the substation
- Assessment of available maps and local plans to identify relevant policies, designations and existing landscape characterisation within the specified study area

Fieldwork was carried out to assess and appraise the landscape and seascape character of the area. In the absence of a National Seascape Assessment, local seascape character units were identified. While the Mayo Landscape Appraisal was referenced for existing work on landscape character in the area, fieldwork identified smaller scale local landscape character.

Appropriate viewpoint locations, representative of different types of visual receptors, were identified. This stage of the assessment culminated in the delineation of an appropriate study

area which was determined by an assessment of the potential visibility of the structures in terms of distance and topography.

The study area for the proposed substation and on-land cable works has a radius of 3km and the study area for the wave energy converters and associated infrastructure has a radius of 25km. This reflects the potential high clarity of visibility that a viewer can have when looking over the sea during exceptionally good weather conditions. This is especially so when the viewer is looking northwards when the sun is at a low angle from behind.

The site survey identified the potential visibility of the proposals, taking into account screening vegetation, topography or other localised factors. Maps were prepared to indicate where visibility of the proposals would occur (Figures 14-1, 14-2 and 14-3). A number of photomontages were prepared (Photomontages 1-4,) to indicate what the proposals would look like.

14.2.1 Definition of terms used in the visual impact assessment

Landscape effects are defined as the result of physical changes to the fabric of the landscape or seascape resulting from new development (Table 14-1). Such physical changes may include the addition, alteration or removal of structures or vegetation or changes to the character of a seascape unit. Landscape effects can be temporary and include those caused by temporary access routes, compounds and construction traffic. Landscape and seascape effects may be positive (beneficial), negative (adverse) or neutral (no overall change or a balance of positive and negative effects).

Visual effects relate closely to landscape effects but concern changes in views (Table 14-2). Visual assessment concerns people's perception and response to visual amenity. Effects may result from new elements located in the landscape that cause visual intrusion (interference with or interruption of the view). Visual effects may be positive (beneficial), negative (adverse) or neutral (no overall change or a balance of positive and negative effects).

Table 14-1: Criteria for the assessment of magnitude of effects on landscape character

| Level | Typical criteria |
|-------------------|---|
| Negligible | Very minor loss or alteration to one or more key developments / features / characteristics of the baseline – the pre-development landscape or view; and/or introduction of elements that are not uncharacteristic with the surrounding landscape – approximating to the 'no change' situation. |
| Low | Minor loss of or alteration to one or more key elements / features / characteristics of the baseline – pre-development landscape or view; and/or introduction of elements that may not be uncharacteristic when set within the attributes of the receiving landscape. |
| Moderate | Partial loss of or alteration to one or more key elements / features / characteristics of the baseline – pre-development landscape or view; and/or introduction of elements that may be prominent but may not necessarily be considered to be substantially uncharacteristic when set within the attributes of the receiving landscape. |
| High | Total loss of or major alteration to key elements / features / characteristics of the baseline – pre-development landscape or view; and/or introduction of elements considered totally uncharacteristic when set within the attributes of the receiving environment. |

Table 14-2: Definition of magnitude/degrees of visual effects resulting from the proposal

| Level | Typical criteria |
|--------------------|---|
| None | No part of the development, or work or activity associated with it, is discernible. |
| Negligible | Only a small part of the proposals is discernible and/or it is at such a distance that it is scarcely appreciated. Consequently it has very little effect on the scene. |
| Slight | The proposals constitute only a minor component of the wider view, which might be missed by the casual observer or receptor. Awareness of the proposals would not have a marked effect on the overall quality of the scene. |
| Moderate | The proposals may form a visible and recognisable new element within the overall scene and may be readily noticed by the observer or receptor. |
| Substantial | The proposals form a significant and immediately apparent part of the scene that affects and changes its overall character. |
| Severe | The proposals become the dominant feature of the scene to which other elements become subordinate and they significantly affect and change its character. |

14.3 Receiving environment

14.3.1 Regional scale landscape character

The *Mayo Landscape Appraisal* document identifies and describes the landscape character of each part of the county. The substation site is located on the western coast of Character Area B - North West Coastal Moorland. The wave energy converter sites are located off the western coastline of this same Area B. This Character Area is described as 'a complex of low lying islands and peninsulas with varying topographical and land cover characteristics but unified by its proximity to the coast.'

Uninterrupted vistas across the water of bays and channels to opposing shorelines are abundant from areas of the public realm. The Appraisal states that 'the main concern for natural linear features such as coastlines and ridgelines is to avoid penetration by development that will interrupt and reduce the integrity of such elements'.

Smooth terrain is a characteristic of this unit, and within this type of landscape, distances can appear shorter and consequently, development can appear closer or larger than if it were viewed within a different type of landscape. As a result of this characteristic, development can have a disproportionate visual impact in such terrain due to an inherent inability to be absorbed physically or visually. Low vegetation also contributes to this sensitivity.

In a low-lying and open environment, even low ridgelines are significant and it is important that development does not interrupt the integrity of primary ridgelines.

14.3.2 Local scale landscape character

Area between Belderra Strand and substation site

The landscape character of the immediate vicinity of the proposed substation site is largely determined by its coastal location and resulting wind speeds. The sand based soil is primarily used for grazing, with intermittent areas of scrubland and a small waterlogged area between Belderra Strand and the substation site with associated vegetation such as flag iris and rushes.

The field boundaries consist of post and wire fencing, or in some areas, New Zealand flax. The local landscape character is particularly open with no vegetation reaching higher than about a metre. There are intermittent houses along the roads. The proposed substation is located in a sloping field which forms a backdrop to the Belderra Strand.



Belderra Strand and car park

The proposed location of the landfall for the undersea cable is at Belderra Strand. The beach here is backed by shingle and gravel banks which lead on to marram dunes. Behind these marram and fixed dunes is an area of machair. There is tarmac road access to within 5m of the southern side of the beach where a small car park is located on the seaside of the road.



Belderra Strand to Cross Point

Apart from intermittent sandy beaches, the coastline in the study area is generally rocky with areas of exposed rocks leading from Belderra Strand to Cross Point. The extreme western end of Annagh Head is composed of an undulating area of lowland blanket bog with rocky outcrops. Moving east, the bog has been extensively cut for peat on either side of the road leading to Annagh Head but pockets of intact bog remain.



Emlybeg Strand

Emlybeg Strand is located at the mid point of the bay at the centre of the study area. The landside of the bay is characterised by sand and cobble beach area which extends landward to elevated sand dune formations. On the day of the site visit, surfers were using this beach.



Cross graveyard

Any elevated points on the peninsula have views of the coastline and out to sea, such as at Cross graveyard to the west of Termoncarragh Lake.



View from Termon Hill

Further south along the peninsula, the land rises to a high point at Termon Hill and long distance views over the peninsula and out to sea are possible from the open and elevated parts of the hill. Settlement is slightly more clustered in this location.



14.3.3 Seascape character

The 'Guide to Best Practice in Seascape Assessment' (Countryside Council for Wales et al., 2001) defines seascape as:

- Views from land to sea
- Views from sea to land
- Views along coastline
- The effect on landscape of the conjunction of sea and land

For some projects, an assessment of views from the sea to the land is necessary. However, this tends to be for schemes where the development will be close to the coast and/or commonly

seen from the open sea looking towards the land – for example, where there is a key ferry route passing by the outside of the development site. These scenarios do not apply to the proposed Atlantic Marine Energy Test Site. The seascape assessment for the test sites is therefore mainly concerned with how the scheme will affect distinct character and views as experienced from land and coastal areas. Areas may be coastal in character even if they don't have a view of the sea – for example, behind sand dunes.

Seascape assessment is a two-stage process involving characterisation and evaluation. A National Seascape Assessment has not yet been carried out but will most likely occur as part of the emerging National Landscape Strategy. This would include national, regional and local level seascape units. It can be assumed that the Mullet Peninsula coastline would form a regional unit. This unit, on a regional scale, would be sensitive to new developments, considering the fact that the coast is generally undeveloped. It can be assumed that much of the Belmullet Headland can be considered the 'hinterland' of the seascape.

Smaller scale and project specific local seascape units have been delineated according to best practice and are indicated on Figure 14-3.

Seascape unit A: Erris Head to Annagh Head

This seascape unit is open, with a rocky shoreline and short, grazed gently undulating grassland sloping down to the coastline. The coastline is very indented and there are a number of islands, notably Eagle Island (which has a lighthouse). There is a small beach and pier at Portnafrankagh. The character of the open sea is wild and vast.



This unit would generally be sensitive to change, as it is currently undeveloped and wild in character.

Marine Energy Test Area A would be distantly visible (11–14km) from this seascape unit.



Seascape Unit B: Annagh Head to Corran Point

This unit is a bay, with a combination of rocky shoreline and sandy beach. The beaches of Belderra Strand, Emlybeg Strand and Cross Strand are located within this unit. While the terrain is low-lying, there is some sense of enclosure emphasised by the low-lying island group of which Inishglora is the largest. The character of the sea is wild, but slightly enclosed by the nature of the land form.

This unit would generally be sensitive to change, as it is currently undeveloped and wild in character, although houses are visible in the landscape.

The proposed AMETS test area B would be visible from different parts of this Seascape Unit at distances varying from 2km (Annagh Head) and 6km (Emlybeg Strand).

The cable landfall would occur at Belderra Strand and the proposed substation would be located to the rear of the strand.



Seascape Unit C: Corraun Point to Letterbeg

This seascape unit consists of long sandy beaches, rocky coastline and gently undulating grazed grassland. The higher ground to the southern part of this unit allows for long distance views out to sea. There is some enclosure provided by the islands of Inishkea North and Inishkea South and the collection of islands off Corraun Point. Housing density slightly increases as one moves south to Letterbeg. The character of the sea is wild with some enclosure provided by land form. In some places the width of the peninsula is only a few hundred metres making the peninsula feel more like an island than part of the general landform.



This unit would generally be sensitive to change, as it is currently generally undeveloped and wild in character, although clusters of houses are visible in the landscape.

It is unlikely that the proposed AMETS test areas would be visible from these areas in all but the most clear of atmospheric and lighting conditions.



14.3.4 Planning Context

The *Mayo County Development Plan (2008-2014)* contains the statutory plans controlling development within the study area, and it has been consulted with regard to visual amenity policies, protected views and landscape designations.

Special Areas of Conservation (SACs), proposed Natural Heritage Areas (pNHAs), Natural Heritage Sites (NHAs), and Special Protection Areas (SPAs) produced by the NPWS for County Mayo were taken into consideration in relation to designations at national level. While these designations are primarily concerned with ecological issues, their potential amenity value warrants assessment in terms of landscape value.

14.3.5 Mayo Landscape Appraisal – areas designated as vulnerable

In terms of potential landscape effects, the entire west coast of the Mullet peninsula is classified in the *Mayo Landscape Appraisal* as 'vulnerable'. An area is considered vulnerable when it has 'very distinctive features with a very low capacity to absorb new development without significant alternations of existing character over an extended area'.

14.3.6 Mayo Landscape Appraisal – areas designated as sensitive

The *Mayo Landscape Appraisal* designates as 'sensitive' the following landscape types (among others): beaches, dunes, sands, natural grassland coastal lagoons, water bodies, peat bogs, bare rocks and natural grassland. The *Appraisal* also states that areas which are open and exposed with sparse or low growing vegetation cover will also be regarded as sensitive as there are generally no opportunities for screening. Even if planting is introduced, the exposed nature of these areas will not support any significant tall vegetation. This is the case for the study area for this proposal. A sensitive landscape is defined in the *Appraisal* as landscape of 'distinctive character with some capacity to absorb a limited range of appropriate new developments while sustaining its existing character'.

14.3.7 Mayo Landscape Appraisal: Policy Area 2 – Lowland Coastal Zone

The Mullet Peninsula falls under Policy Area 2, Lowland Coastal Zone. The following policies from the *Mayo Landscape Appraisal* A number of policies in relation to Policy Area 2 are relevant to this proposal.

Policy 4 Consider development that does not significantly interfere or detract from scenic coastal vistas, as identified in the development plan, when viewed from areas of the public realm.

- Policy 5** Encourage development that will not interrupt or penetrate distinct linear sections of primary ridgelines and coastlines when viewed from areas of the public realm.
- Policy 6** Preserve any areas that have not been subject to recent or prior development and have retained a dominantly undisturbed coastal character.
- Policy 8** Recognise the substantial pockets of residential and rural land uses in some locations and emerging pressures for differing land uses of industry, wind energy and residential development in this policy area.
- Policy 9** Continue to facilitate appropriate development in a progressive and clustered manner that respects the scale, character and sensitivities of the landscape.
- Policy 11** Encourage development that will not have a disproportionate effect in the existing character of the landscape in terms of location, design and visual prominence.

14.3.8 Landscape sensitivity matrix

In the *Mayo Development Plan's* landscape sensitivity matrix, (page 84), industrial and commercial developments and road projects (which are the closest type of projects to that proposed, as listed in the matrix) are considered to have a low to medium potential for negative impacts within Policy Area 2. According to this sensitivity index, the most significant impacts arising from development in this Policy Area would result from the scale of the development, the location and whether or not there was prior development in the area. Bulk and density, and design would also be factors in determining the potential impact of a development.

The potential landscape impacts arising from the proposed Atlantic Marine Energy Test Site in relation to these criteria are described in section 14.4 below.

14.3.9 Walking and cycling routes

The Mayo County Development Board and the associated website 'Mayo Walks' mentions the Erris Head Loop Walk (5km).

The Irish Heart Foundation developed Slí na Sláinte (Path to Health) walking routes throughout the country. Two walking routes have been developed within the study area and are both located within the town of Belmullet:

- Broadhaven Slí na Sláinte (3.1km)
- Blacksod Slí na Sláinte (2.6km)

14.3.10 Scenic routes/views

The current *Mayo County Development Plan 2008–2014* indicates one scenic route with scenic and highly scenic views within the study area. The R313 between Belmullet and Blacksod has been designated as a scenic route with scenic views to either side of the road. The local road surrounding Termon Hill between Blacksod, Fallmore and Letterbeg in the south of the Mullet Peninsula has been classified as a scenic route with highly scenic views southwards across Blacksod Bay. This part of the scenic route joins the R313 at Aghleam, north of Termon Hill. Scenic routes and views within the study area are indicated on Figure 14-3.

14.3.11 Natura 2000 sites

The *Mayo County Development Plan 2008–2014* indicates a number of designated ecological sites within the study area. While these designations are primarily concerned with ecological issues, their potential amenity value warrants assessment in terms of landscape value.

14.4 Impact of the development

14.4.1 Construction impacts

The greatest visual impacts during the construction stage would occur in the vicinity of the substation site and the location of the underground cable. These impacts would be temporary, moderate and negative.

The construction impacts associated with the proposed offshore test areas would largely occur at sea and, while these impacts would also be temporary, there would be slight and negative visual impacts during the construction period.

14.4.2 Operational phase: landscape effects

The landscape contained within the study is sensitive to change. Any proposal must not interfere with scenic coastal vistas, interrupt linear sections of coastline, affect undisturbed coastal areas or have a disproportionate effect on the existing character of the landscape in terms of location, design and visual prominence. It must respect the scale, character and sensitivity of the landscape, and have no significant effect on the existing character of the landscape in terms of location, design and visual prominence.

Substation and landfall

The substation is located in an area which is described in the *Mayo Landscape Appraisal* as vulnerable and sensitive. While there are some residential houses in the near vicinity, the coastal location and lack of significant vegetation would result in a development being potentially highly visible and therefore impacting on the landscape character.

The proposed substation is designed to replicate the scale of a residential house, which is appropriate in terms of scale and design. The location takes advantage of an existing rock outcrop for screening and the proposed naturally contoured berm would extend this screening. The fencing boundary treatment is generally consistent with that found in the locality, although a post and rail would be more consistent with existing boundaries. The main landscape change arises from the change in texture of the site grassland, along with the new road which curves to take account of the contours. While these two features would be visible to someone immediately adjacent to the site (as seen in photomontage 2), they would not be visible from other potential points in the landscape such as Belderra Strand (see photomontage 1).

Considering the underlying characteristics of the landscape, the existing buildings in the immediate vicinity and the careful siting and screening of the proposal, the landscape effects arising from the substation would be low and neutral.

As the cable will be underground, there will be no impact arising from the cable landfall during the operational period, except in circumstances where maintenance is required,

Marine Test Area A

Marine Energy Test Area A is potentially visible from large tracts of the coastline of the Mullet Peninsula. However, as Photomontage 4 indicates, visibility of this test site will be extremely low. There will be some change in the character of the landscapes that currently experience uninterrupted views out to a wild and vast sea, but visibility of the test site from the land will

only be possible under the clearest of atmospheric conditions. The nature of the development and its close relationship to the characteristics of the sea result in landscape effects that are low and neutral.

The impact of warning lighting on the marker buoys and wave energy converters will also be low, as one might expect to see occasional lighting associated with shipping or lighthouses over such distances in the sea. The impact will arise due to the permanency of the lighting effect, as opposed to moving lights associated with shipping. Again, this lighting would only be visible from the land in the clearest of conditions.

Marine Energy Test Area B

Marine Energy Test Area B is potentially visible from tracts of the coastline of the Belmullet Peninsula. However, as Photomontage 3 indicates, visibility of this test site is relatively low. The landscape in this location is more enclosed due to the nature of the bay and the location of the island grouping around Inishglora. The test site would be perceived as being located on the edge boundary of this bay landscape. There are existing structures in this bay landscape including houses, roads, a graveyard and a golf course and therefore the landscape is not undisturbed. While the test site may be visible, it does not have a disproportionate effect on the character of the landscape.

The nature of the development and its close relationship to the characteristics of the sea result in landscape effects that are moderate and neutral.

14.4.3 Operational phase Seascape Effects

Seascape unit A – Erris Head to Annagh Head

Marine Energy Test Area A would be distantly visible (8-10km) from this seascape unit. At this distance, however, the potential for visibility of this test site is extremely low. There will be some change in the character of this sensitive seascape, as the currently uninterrupted vista over water to the horizon will be interrupted, but visibility of the test site will only be possible under the clearest of atmospheric conditions. The nature of the development and its close relationship to the characteristics of the sea result in seascape effects that are low and neutral.

The impact of warning lighting will also be low, as one might expect to see occasional lighting associated with shipping or lighthouses over such distances in the sea. The impact will arise due to the permanency of the lighting effect, as opposed to moving lights associated with shipping. Again, this lighting would only be visible from the coast in the clearest of conditions.

Seascape Unit B – Annagh Head to Corran Point

Marine Energy Test Area B is located within this seascape unit. This seascape unit is more enclosed due to the nature of the bay and the location of the island grouping around Inishglora. There are existing structures in this bay landscape including houses, roads, a graveyard and a golf course and therefore the landscape is not undisturbed. The effects here are different from the other seascape units as Test Area B would not be seen in the context of an expansive sea, but exhibits a closer relationship with the seascape of the bay. While the test site may be visible, it does not have a disproportionate effect on the character of the seascape.

The nature of the development and its close relationship to the characteristics of the sea result in seascape effects that are moderate and neutral.

The impact of warning lighting will also be low as lighting associated with shipping or lighthouses is occasionally visible over such distances in the sea. Again, this lighting would only be visible from the coast in reasonably clear conditions.

It may be possible to view both test sites from this seascape unit in extremely clear weather conditions; the seascape impact would remain moderate and neutral in this case.

As the cable will be underground, there will be no impact arising from the cable landfall during the operational period, except in circumstances where maintenance is required,

Seascape Unit C – Corraun Point to Letterbeg

Marine Energy Test Area A would be distantly visible (8–10km) from this seascape unit. At this distance the potential for visibility of this test site is extremely low. There will be some change in the character of this sensitive seascape, as the currently uninterrupted vista over water to the horizon will be interrupted, but visibility of the test site will only be possible under the clearest of atmospheric conditions. The nature of the development and its close relationship to the characteristics of the sea result in seascape effects that are low and neutral.

The impact of warning lighting will again also be low for reasons described above and this lighting would only be visible from the coast in the clearest of conditions.

14.4.4 Operational phase – visual effects

Detailed and highly realistic images that illustrate the likely future appearance of a development from a specific viewing point have been prepared (Photomontages 1-4). These show the effects of the development from a number of critical viewpoint positions. However, they contribute little to an assessment of the effects on the overall landscape within which an almost infinite number of potential viewpoints exist. There is no meaningful way to illustrate every view within a landscape – the number of potential viewing points is almost infinite. Instead, a representative sample is provided. Views are presented to illustrate ‘worst case’ locations to examine whether the project will be visible from such locations. The views are representative of viewing conditions that are encountered and some of them may show vegetation or topography screening the development. Such conditions are normal and representative.

The views provided are representative and not comprehensive. At best, visualisations can represent a view from a particular location at a particular time in particular weather conditions. There is no such thing as a fixed or single impact on the appearance or character of the landscape.

The most effective use of photomontages is to view them in the field. The Landscape Institute (UK) Guidelines state:

‘It is essential to recognise that two-dimensional photographic images and photomontages alone cannot capture or reflect the complexity underlying the visual experience, and should therefore be considered an approximation of the three-dimensional visual experiences that an observer would receive in the field. As part of a technical process, impact assessment and considered judgements using photographs and/or photomontages can only be reached by way of a visit to the location from which the photographs were taken.’

14.4.5 Operational phase – Zone of Theoretical Visibility

The term ‘Zone of Theoretical Visibility’ (ZTV) is used to describe the area over which a development can theoretically be seen, and is based on a Digital Terrain Model (DTM) and overlaid on a map base. This is also known as a Zone of Visual Influence (ZVI), Visual Envelope Map (VEM) and Viewshed.

A ZTV map was prepared (Figure 14-2) to illustrate the potential visual impact of the substation at Belderra Strand. The map indicates that the substation would be visible from areas in the immediate vicinity up to 1km away, from the approach to Emlybeg Strand, from parts of

Annagh peninsula and from parts of elevated areas more than 4km to the north. This theoretical visibility was confirmed on site for some locations and these are indicated in red on the map. This ZTV mapping does not show the screening effects of contours below 10m (including the proposed screening berm or vegetative screening in the landscape). It therefore illustrates a worst case scenario before mitigation measures have been enacted. The map indicates that the substation would be visible from areas in the immediate vicinity up to 1km distance, from the approach to Emlybeg Beach, from parts of Annagh peninsula and from parts of elevated areas more than 4km to the north.

This theoretical visibility was confirmed on site for some locations and these are indicated in red on Figure 14-2.

14.4.6 Operational phase - sensitive receptors

Visibility of the substation within the wider landscape is indicated on Figure 14-1. The following sensitive receptor locations in the area would experience visibility of the proposed substation:

- Residences in close proximity to the substation (moderate negative visual impact) – see Photomontage 1
- Carne Golf Club (slight neutral visual impact)
- Belderra Strand (slight negative visual impact) – see Photomontage 2
- Some roads in the immediate vicinity (slight to moderate negative visual impact)
- Very long distance views from the graveyard over 4km to the north (slight neutral visual impacts)

14.4.7 Operational phase visibility of Marine Energy Test Sites A and B

Given their distance from the coast, the test areas would appear clearly separated from the onshore landscape and part of the open sea. The proposed test areas would appear most prominent from those coastal areas that have a simple foreground pattern, and thus fewer distracting features, especially when such views are directed towards the proposed development. Visibility would mainly occur from southern directions and at high elevations.

- The following locations would experience visibility of the proposed AMETS Areas A and B in very clear atmospheric conditions (representing a worst case scenario). In normal conditions, the visual effects would be lower. Photomontages 3 and 4 are representative of the worst case scenario views showing the impact of the parts of the coast closest to the Test Sites:
- Residences with views of the test site locations along the Mullet Peninsula (negligible to slight negative visual impact depending on distance to the site)
- Carne Golf Club (slight negative visual impact)
- Belderra Strand, Emlybeg Strand (slight negative visual impact)
- Belderra Strand (slight negative visual impact)
- Some roads in the immediate vicinity (negligible to slight negative visual impact depending on distance to the site)
- Very long distance views from the graveyard over 4km to the north (slight negative visual impacts)

Visibility of both AMETS test areas within the wider landscape is indicated on Figure 14-3. Test Area A will not be visible from land except in some very specific atmospheric and lighting conditions.

14.4.8 Impact on designated areas

Walking and cycling routes

There would be no landscape or visual impact on any marked walking or cycling routes

Scenic routes/views

Some long-distance views of the test areas would be possible from two 1km long sections of the scenic road which runs through the Belmullet peninsula (R313). These sections are indicated on Figure 14-3. The impact on such views would be negligible considering the scale of the views and the distance between the viewpoint and the test site.

There would be no impact on the highly scenic views at the southern end of the Belmullet peninsula.

Natura 2000 sites

The substation and Test Area B would be visible from parts of the Natura 2000 sites as indicated on Figure 14-1. The visual impact would range from none to slight depending on proximity to the proposed scheme.

14.4.9 Decommissioning impacts

Decommissioning impacts would be temporary, moderate and negative.

Cumulative effects

There is no comparable development in the area similar to that proposed and therefore there are no anticipated cumulative effects arising from an interaction with other developments.

Cumulative effects may occur where both test areas may be visible in combination, in succession or in sequence from particular viewpoints, as described in Table 14-3.

Table 14-3: Definitions of type of cumulative impact

| | |
|-----------------------|--|
| In combination | Where two or more features are seen together at the same time from the same place, in the same (arc of) view where their visual effects are combined. |
| In succession | Where two or more features are present in views from the same place (viewpoint) but cannot be seen together at the same time, because they are not in the same arc view – the observer has to turn to see new sectors of view whereupon the other features unfold in succession. |
| In sequence | Where two or more features are not present in views from the same place (viewpoint) and cannot, therefore, ever be seen at the same time. Even if the observer moved round the arc of view, he or she would have to move to another viewpoint to see the second or further feature – so, they will then appear in sequence. The frequency of occurrence in the sequence may be highly variable, ranging from frequently sequential when the features keep appearing regularly and with short time lapses between (clearly speed of travel influences this as well as distance between |

the viewpoints) down to **occasionally sequential** where there may be long time lapses between appearances, because the observer is moving very slowly and / or there are large distances between the viewpoints (even if not between the features).

Cumulative effects in combination (i.e. where both test sites are visible in the same viewpoint) would only be possible in the clearest of atmospheric and lighting conditions. In this event both test sites would be visible from the areas marked in red on Figure 14-3. The landscape and visual impact would generally be slight and neutral, rising to moderate and neutral for views from Seascape Unit B – Annagh Head to Corraun Point.

Cumulative effects in succession (two or more features are present in views from the same place) would occur, again only in the clearest of atmospheric and lighting conditions from parts of the landscape closest to AMETS Test Area B (for example, the tip of the Annagh Peninsula). The landscape and visual impact would be slight and neutral.

Cumulative effects in sequence (two or more features are not present in views from the same place) are not expected to be noticeable, considering the significant viewing distance from the land to AMETS Test Area A.

14.5 Mitigation and residual impacts

14.5.1 Location

The preferred location of the proposed substation takes advantage of an existing rock outcrop for screening and the proposed naturally contoured berm would extend this screening. It is clustered with a number of existing buildings and takes advantage of screening provided by the undulating wider landscape.

14.5.2 Finishes

The proposed substation is designed to replicate the scale of a residential house, which is appropriate in terms of scale and design. The fencing boundary treatment is generally consistent with that found in the surrounding landscape.

The finishes of the wave energy converters are bright for safety reasons and though this heightens visibility, the potential visual impacts must be weighed against safety concerns.

14.5.3 Landscape design

In addition to utilising the existing rock outcrop for screening the substation, the proposed naturally contoured berm would extend this screening. Landscape mitigation would include natural re-vegetation of berm structures and a change of management of the grassland including no further fertilisation of the ground within the site boundary to encourage native grass development.

14.6 Conclusion

The assessment of visual impact has followed best practice in terms of landscape and seascape characterisation and assessment. The proposals will be new features in a landscape described in the *Mayo Landscape Appraisal* as 'vulnerable' and 'sensitive'. However, the location that emerged from a detailed site selection process as well as the design and mitigation measures proposed will result in landscape and visual impacts that range from negligible to slight to moderate and from negative to neutral. Landscape, seascape and visual effects will generally be localised to the area between Annagh Head and Corraun Point.

In very clear atmospheric and good lighting conditions there will be slight visibility of AMETS Test Area B, and to a much lesser degree AMETS Test Area A from locations identified in Figure 14-3. There would also be slight visibility of the roof of the proposed substation and visibility of the access road from a small number of localised views.

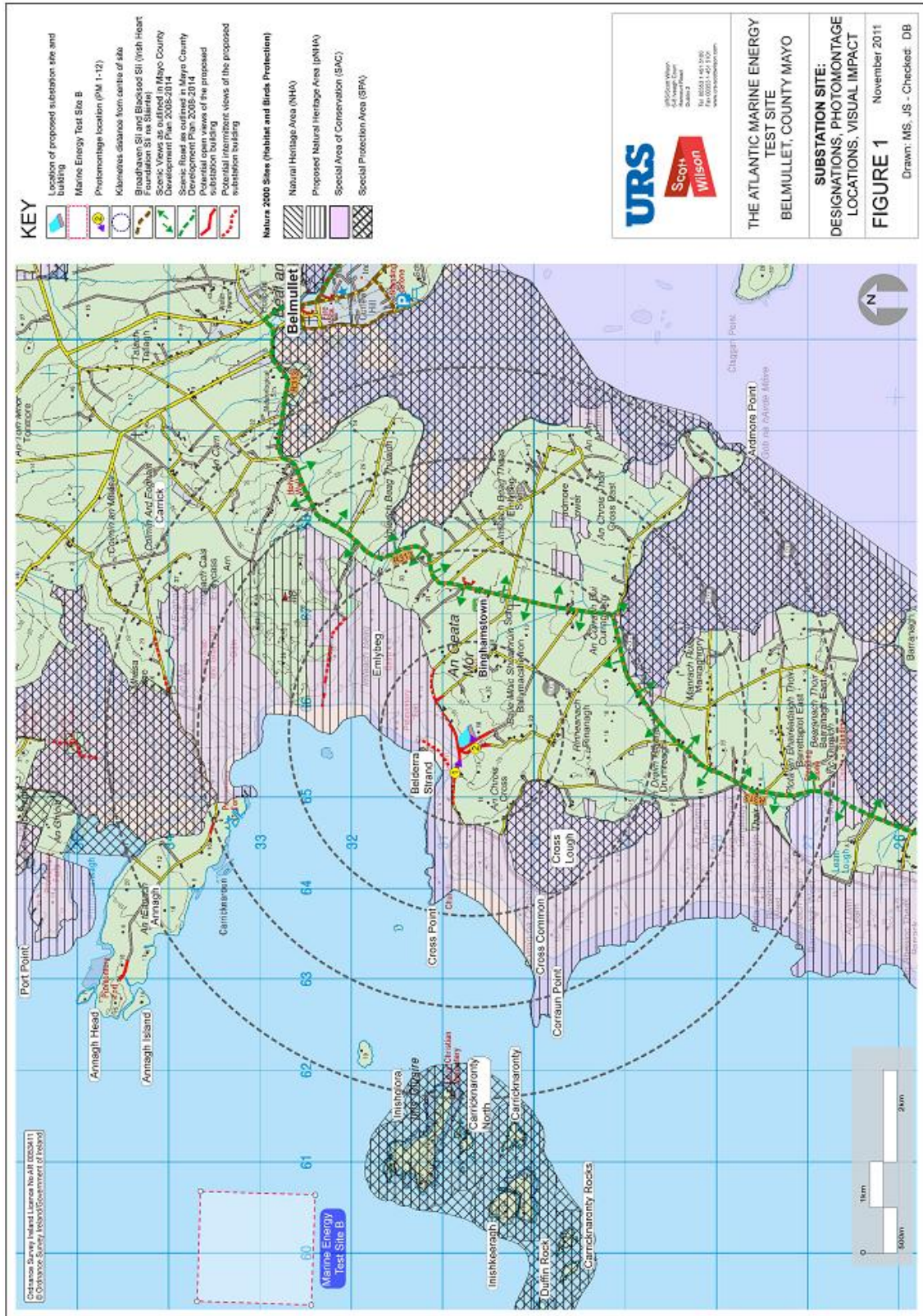


Figure 14-1: Substation site photomontage view point locations and zone of potential visual impact

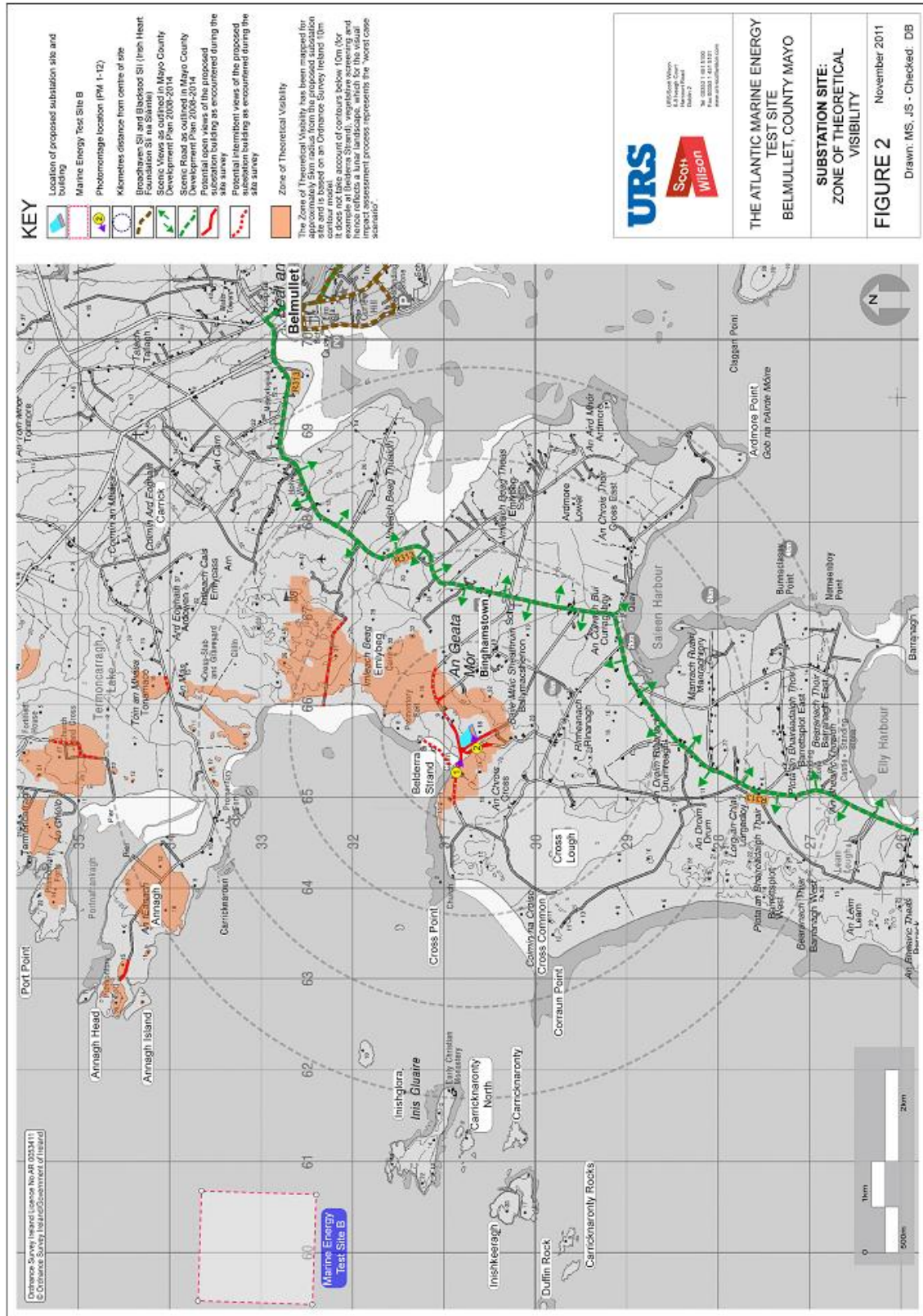


Figure 14-2: Zone of Theoretical Visibility for substation and Test Area B

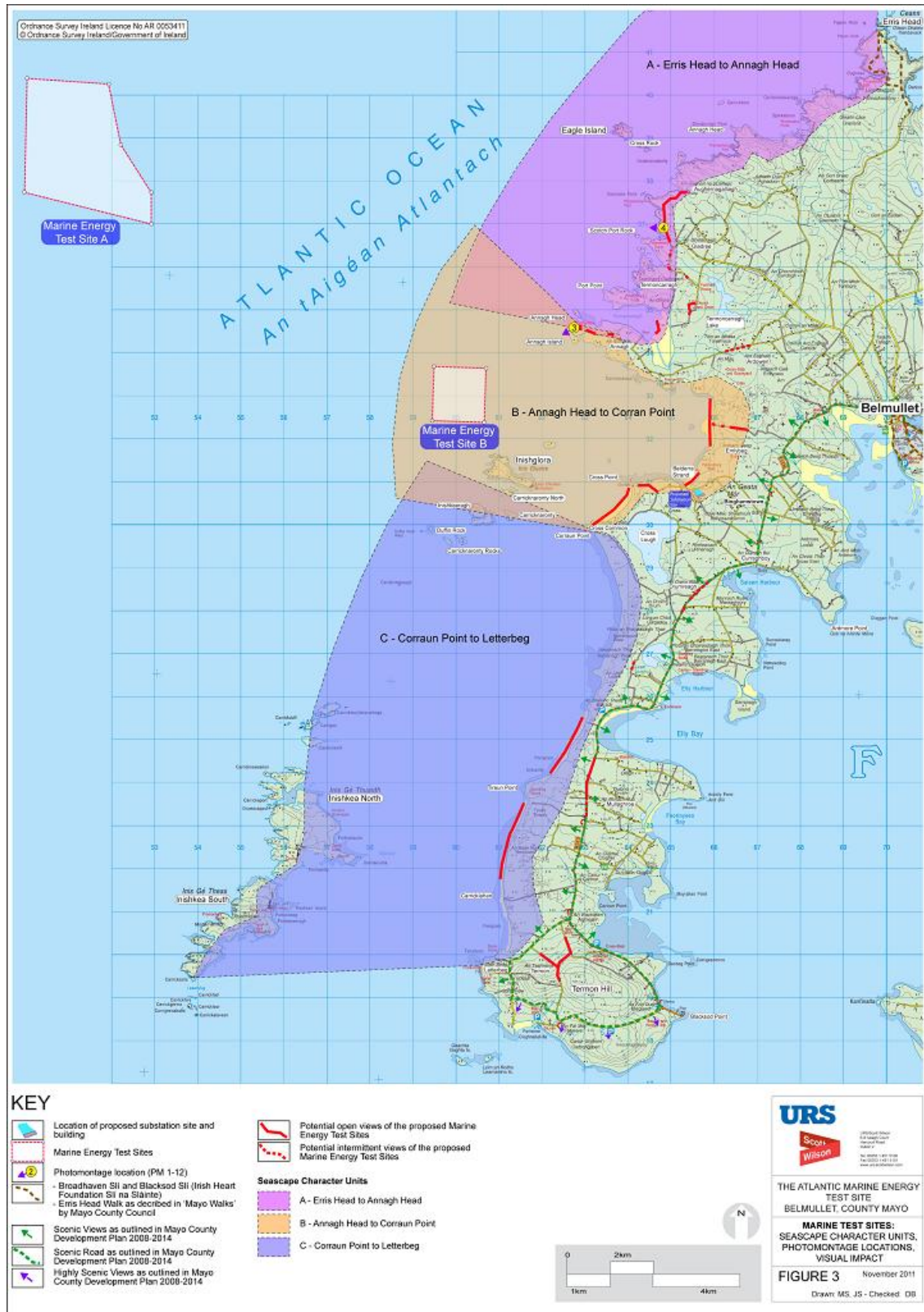


Figure 14-3: Seascape character units, Test Area photomontage view point locations, visual impact



Photomontage 1a: View southeast from local road across car park at Belderra Strand (EXISTING)

| | |
|--|-----------------------|
| Viewpoint grid reference : | E065356 N330851 |
| Arc of view: | 38.2 deg |
| Date photo taken: | 12.08.2011, 3.10 p.m. |
| Viewpoint elevation: | 17 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 401m |
| Recommended viewing distance: | 40–50 cm |



Photomontage 1b: View southeast from local road across car park at Belderra Strand (PROPOSED)

| | |
|--|-----------------------|
| Viewpoint grid reference : | E065356 N330851 |
| Arc of view: | 38.2 deg |
| Date photo taken: | 12.08.2011, 3.10 p.m. |
| Viewpoint elevation: | 17 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 401m |
| Recommended viewing distance: | 40–50 cm |



Photomontage 2a: View east towards substation site as seen from residential houses (CURRENT)

| | |
|--|------------------------|
| Viewpoint grid reference : | E065528 N330654 |
| Arc of view: | 38.2 deg |
| Date / time photo taken: | 11.08.2011, 10.40 a.m. |
| Viewpoint elevation: | 15 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 193m |
| Recommended viewing distance: | 40–50 cm |



Photomontage 2b: View east towards substation site as seen from residential houses (PROPOSED)

| | |
|--|------------------------|
| Viewpoint grid reference : | E065528 N330654 |
| Arc of view: | 38.2 deg |
| Date / time photo taken: | 11.08.2011, 10.40 a.m. |
| Viewpoint elevation: | 15 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 193m |
| Recommended viewing distance: | 40–50 cm |



Photomontage 3a: View east towards substation site as seen from residential houses (EXISTING)

| | |
|--|-------------------------|
| Viewpoint grid reference : | E062727 N334585 |
| Arc of view: | 60 deg. |
| Date photo taken: | 12.08.2011, 2.25p.m. |
| Viewpoint elevation: | 29 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 2.26km |
| Recommended viewing distance: | 40-50 cm |



Photomontage 3a: View east towards substation site as seen from residential houses (PROPOSED)

| | |
|--|-------------------------|
| Viewpoint grid reference : | E062727 N334585 |
| Arc of view: | 60 deg. |
| Date photo taken: | 12.08.2011, 2.25p.m. |
| Viewpoint elevation: | 29 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 2.26km |
| Recommended viewing distance: | 40-50 cm |



Photomontage 4a: View northwest towards Test Area A from minor road in the townland of Gladree north of Scotch Port Rock (EXISTING)

| | |
|--|----------------------|
| Viewpoint grid reference : | E064826 N336885 |
| Arc of view: | 38.2 deg. |
| Date photo taken: | 12.08.2011, 2.25p.m. |
| Viewpoint elevation: | 27 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 11.95km |
| Recommended viewing distance: | 40-50 cm |



Photomontage 4a: View northwest towards Test Area A from minor road in the townland of Gladree north of Scotch Port Rock (PROPOSED)

| | |
|--|----------------------|
| Viewpoint grid reference : | E064826 N336885 |
| Arc of view: | 38.2 deg. |
| Date photo taken: | 12.08.2011, 2.25p.m. |
| Viewpoint elevation: | 27 |
| Height of camera above ground: | 1.6m |
| Nearest distance to substation building: | 11.95km |
| Recommended viewing distance: | 40-50 cm |

