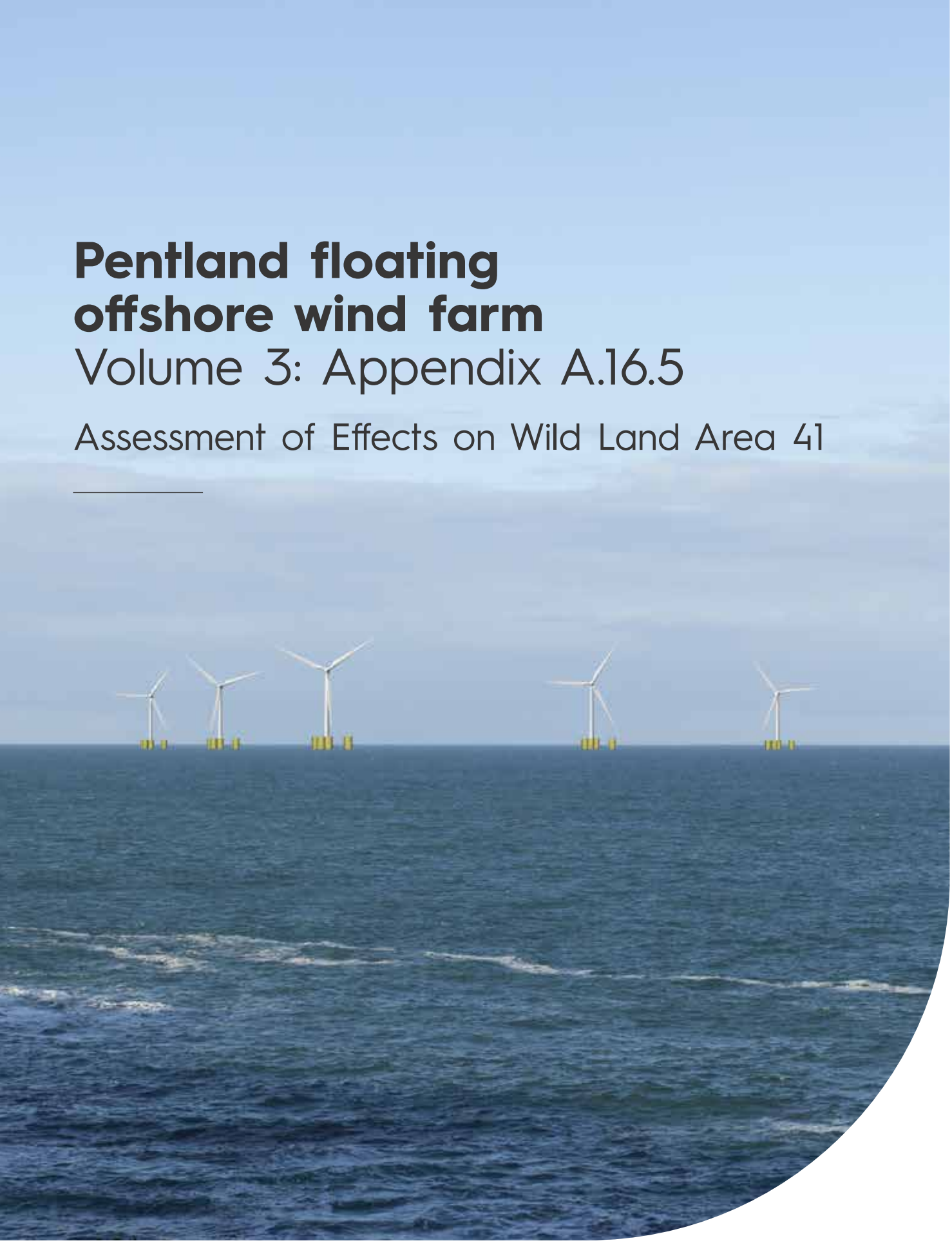
Pentland floating offshore wind farm

Volume 3: Appendix A.16.5

Assessment of Effects on Wild Land Area 41



PENTLAND FLOATING OFFSHORE WIND FARM

OFFSHORE EIAR (VOLUME 3): TECHNICAL APPENDICES

APPENDIX 16.5: ASSESSMENT OF EFFECTS ON

WILD LAND AREA 41

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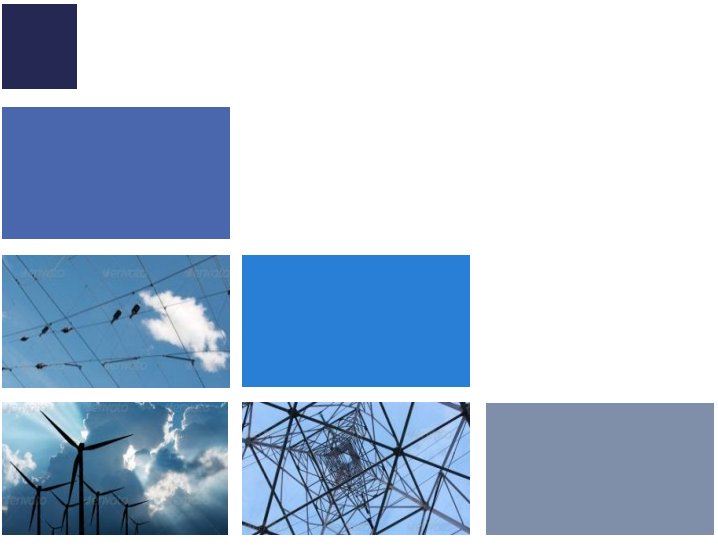

APPENDIX 16.5: ASSESSMENT OF EFFECTS ON WILD LAND AREA 41

1.1 Introduction

The assessment contained in this Appendix 16.5 focuses on the potential effects of the Offshore Development on the Hoy Wild Land Area (WLA) 41.

WLA 41 covers an area of 50 km^2 making it one of the smallest WLAs in Scotland. It covers the interior hills in the centre of the island and the centre west coastline. It is made distinct by the broad and open expanse of sweeping moorland and dramatic coastal cliffs, which characterise this area.

The following assessment follows guidance set out in NatureScot's 'Assessing Impacts on Wild Land Technical Guidance' (NatureScot, 2020) with reference to NatureScot's 'Description of Wild Land Areas' (SNH, 2017). The WLA description lists six key attributes and qualities for WLA 41, which have been numbered 1 to 6 for the purpose of this assessment:

- WLQ1: A relatively small area of wild land that sits within a wider archipelago, with a prevailing strong influence of the sea and exposure.
- WLQ2: The east and west sides of the area contrast strongly in landform, access and remoteness, with a hidden interior in-between that has a strong sense of remoteness and sanctuary.
- WLQ3: Dramatic, towering sea cliffs in the west that lead to perceived awe and naturalness.
- WLQ4: Subtle, gently-sloped hill slopes at a broad scale, containing a complex distribution of bog, pools, peat hags and burns at a local level, contributing to the sense of naturalness.
- WLQ5: A distinctive high, simple and remote hill backdrop within the Orkney archipelago.
- WLQ6: Few visitors and artefacts within the interior, despite the proximity of settlements and roads outside the area.

These key attributes and qualities (hereafter, referred to as Wild Land Qualities, or WLQs) form the basis of the wild land assessment as they express the distinctive and specific wildness qualities that are found in this WLA. NatureScot's WLA description provides further information on each of these WLQs as an explanation of how the various aspects of the landscape contribute to the WLQ.

This appendix is accompanied by a series of figures which are referenced throughout the text. All SLVIA figures are presented in Offshore EIA (Volume 3): Appendix 16.9: SLVIA Figures.

- Figure 16.4: Landscape Designations and Wild Land Areas;
- Figure 16.11: Landscape Designations and Wild Land Areas with Zone of Theoretical Visibility (ZTV);
- Figure 16.15a: Level of Wildness: Composite Relative Wildness;
- Figure 16.15b: Level of Wildness: Perceived Naturalness;
- Figure 16.15c: Level of Wildness: Rugged or Challenging Terrain;
- Figure 16.15d: Level of Wildness: Remoteness from Public Mechanical Access;
- Figure 16.15e: Level of Wildness: Lack of Built Modern Artefacts;
- Figures 16:39 and 16.55: Viewpoint 9: Footpath to Old Man of Hoy;
- Figures 16:45 and 16.61: Viewpoint 15: Ward Hill, Hoy; and
- Figures 16:46 and 16.62: Viewpoint 16: Tor Ness, Hoy.

Of the overall area of WLA 41, 39.5% will have visibility of the Offshore Development, while 60.5% will have no visibility of any part of the Offshore Development.

The fieldwork carried out by OPEN across this WLA has been an essential component of the assessment process and has enabled the assessors to develop the depth of appreciation and understanding necessary to underpin a valid and credible assessment.

1.2 Assessing Impacts on Wild Land Technical Guidance

The NatureScot technical guidance (2020) sets out the suggested approach to the assessment of effects on wild land. As noted in paragraph 4 of the guidance, the assessment methodology broadly follows that of GLVIA3, and is based around the following five stages, as described in Table 1.3-1 and taken from the NatureScot's guidance.

Paragraph 13 of the guidance notes that "*the assessment approach should be…*

- "*concise and proportionate, focused on likely significant effects on the qualities;*
- *clear and transparent, so that underlying assumptions and reasoning can be understood by others in conveying the complexity and significance of effects; and*
- *focused on qualities, informed by fieldwork and the WLA descriptions."*

While this Wild Land assessment methodology broadly follows GLVIA3, there are several points that are beneficially explained prior to the assessment itself, as discussed below.

1.2.1 The Status of WLAs

The status of WLAs is clearly set out in Paragraph 8;

"WLAs have not been identified on scenic grounds and are not a statutory designation."

There is also an acceptance in Paragraph 9 that WLAs are not "wilderness" and that human influences can and do form part of the baseline character of WLAs:

"…Whilst the WLA map identifies areas where wildness is most strongly expressed, these are not 'wilderness', empty of any human activities or influence. They reflect Scotland's long history of past occupation and current use and management, albeit that evidence of such is often light and limited in extent."

An important phrase in this paragraph is "*light and of limited extent"* as this presents a measure with which to assess the existing external influence of development, and operational wind farms in particular, on the WLA, and indicates to what degree this influence can be accommodated within an area that is considered to be 'wild land'.

1.2.2 The Need for a WLA Assessment

The need for a WLA assessment is discussed in Paragraphs 5 and 6 of the NatureScot guidance, which note that:

"This guidance should only be applied to proposals whose nature, siting, scale or design are likely to result in a significant effect on the qualities of a WLA. Given this, assessments are more likely for proposals within a WLA, and are less-likely for proposals outwith the WLA."

An assessment will only be required where it has been deemed necessary by the competent authority. You are encouraged to discuss the need for an assessment with the competent authority at an early stage."

While the Offshore Development lies 33 km outwith this WLA, and despite the limited likelihood for significant effects to arise for proposals outwith the WLA, both NatureScot and The Highland Council (THC) have requested that a wild land assessment be carried out.

It is also important to note that, according to NatureScot guidance, effects on WLAs can only be experienced within WLAs and not on the area surrounding them. Paragraph 3 of the guidance notes that: *"This guidance sets out a methodology and general principles for assessing the impact of development and other proposals on WLAs, as they are experienced from within the WLA, not from outwith it."*

1.2.3 Cumulative Effects

At paragraph 16, NatureScot guidance notes the following in relation to cumulative effects on WLAs:

"The potential for cumulative effects. Other proposals (either of the same or different type) which are likely to contribute to significant cumulative effects should be identified in discussion with the decision maker. The principles within our guidance document Assessing the cumulative impact of onshore wind energy developments specific to onshore wind energy development can be applied to other development and should aid this assessment."

And at paragraph 33: "*In judging significance, the following factors should be considered - the nature and extent of any likely cumulative effects."*

There are no operational offshore wind farms readily visible from WLA 41 and while there are onshore wind farms and turbines visible on the Orkney Islands, these are typically small in scale. There is a consent for a wind farm in the southern part of Hoy, which would be visible from parts of WLA 41, presenting a close-range influence. Onshore wind farms are more prevalent on the Mainland of Scotland, and these can be seen as distant features from WLA 41, as shown in Figure 16.16 and in the cumulative ZTVs in Figures 16.17 to 16.27.

1.2.4 Night-time Effects

The potential for night-time effects relating to the aviation and maritime navigational lighting on the WTGs will be limited owing to the minimum distance of 33 km between the Offshore Development and the closest boundary of WLA 41. The Night-time Assessment is presented in Offshore EIA (Volume 3): Appendix 16.6 which includes the methodology applied and the scope of the assessment in terms of the lighting requirements. The maximum design scenario considers aviation lighting set on the hubs of the seven WTGs at a height of 170 m, and with a blade tip hight of 300 m. The lights will emit a flashing red light of medium intensity, measured as 2,000 candelas (cd). The lights will carry a detection system responding to atmospheric conditions, such that when visibility is greater than 5 km the intensity of the lights will be reduced to 10% of their maximum intensity, which equates to 200 cd. Met office data recorded at Wick (see Offshore EIA (Volume 3): Appendix 16.8) suggests that visibility of >5 km occurs 94% of the time around the north coast of Scotland although this may be slightly less frequent out over the sea due to higher moisture content. However, when visibility is less than 5 km the weather conditions will also act to reduce the intensity of the lights when viewed from the more distant areas. While this research has led to the conclusion that the light reaching the WLA would be 200 cd or less for over 94% of the time, NatureScot has requested that 2,000 cd be used as the basis of the assessment.

The potential for night-time effects on the Hoy WLA is limited by the fact that aviation lighting will only affect visual receptors and not landscape receptors, as it will be the visual amenity of people in the WLA that will be affected and not the landscape character as this will not be perceptible at night. It is unlikely that there will be many walkers in WLA 41 during the hours of darkness, apart from possibly at the start or end of the day when walkers, stalkers or the occasional worker are late in returning. The aviation lighting will, therefore, affect only a very small number of people.

Those parts of WLA 41 that are shown on the ZTV of Turbine Hub Lighting in Figure 6.30 with potential to be affected, include the western coastline of Hoy, with visibility extending inland across the west facing slopes and summits of Knap of Trowieglen (399 m AOD) and Withi Gill (360 m AOD). The ZTV shows that visibility of the aviation lighting would be concentrated along this western edge of WLA 41, with patches in central parts and no visibility across eastern parts.

These lights would cause an affect as they would be introducing lighting into an open seascape where currently night-time lighting is limited. The Offshore Development would be located in the south-west sector in views from Hoy, where the Mainland of Scotland forms the backdrop. Figures 16.28 and 16.29 present plans illustrating lighting pollution, which show a concentration around Thurso, Dounreay Nuclear Power Facility and Reay and although at slightly longer range, will be seen in the same sector. There is also a temporary influence from ferries and other water-borne vessels in this part of the North Atlantic. The effect would be moderated by the fact that the lights would be located over 33 km from WLA 41, and that the intensity of these lights would be diminished over this considerable distance, even considering the 2000 cd lighting intensity.

While there is potential for night-time lighting to be visible from the WLA, the low intensity of the lights as experienced over such distances, combined with the limited extents from which they would be visible, would limit their influence on the WLA. The effects of the night-time lighting on the SLQs are, therefore, not considered further in the assessment.

1.3 Methodology

1.3.1 NatureScot Guidance

As noted in NatureScot's 2020 Guidance, the Wild Land assessment methodology broadly follows that of GLVIA3 and is based around the five steps described in Table 1 of the Guidance, replicated as Table 1.3-1 below.

Table 1.3-1 NatureScot's steps to assess effects on WLAs

Step	Summary
Step 1 - Define the study area and the scope of the assessment	Identify a study area appropriate to the scale of the proposal and extent of likely significant effects on the WLA. Output: Brief justification and map or description of the area that will be assessed.
Step 2 – Verify the WLA baseline	Confirm the wild land qualities (set out in the WLA description) relevant to the study area, describing any major changes that have occurred since the description was prepared and the nature of their contribution to the WLA. Output: Identification of relevant qualities and explanation of how any changes since preparation of the WLA Description have affected them.
Step 3 – Assess the sensitivity of the qualities	Through detailed field assessment within the study area, assess the sensitivity of the wild land qualities scoped in (including their physical attributes and perceptual responses), to the type and scale of change proposed. Output: A clear and concise narrative explaining the susceptibility of individual qualities and / or combinations of qualities where there is some commonality between their contributing attributes and responses, and their overall sensitivity.
Step 4 – Assess the magnitude of the effects	Assess the effects on individual and / or combinations of qualities, drawing out which physical attributes and perceptual responses will be affected, how and to what degree. This should reflect the size or scale of change, its extent and duration. Output: A clear and concise narrative explaining the effects of the various elements of the proposal on individual qualities and / or combinations of qualities.
Step 5 – Judge the significance of the effects	Conclude on the overall significance (taking into account any mitigation), in terms of the study area and where relevant the wider WLA. Output: A clear narrative explaining the overall significance of residual effects identified on the individual qualities and / or combination of qualities.

Steps 1 and 2 do not require detailed explanation of methodology and are carried out subsequently in this Appendix. The methodology for Steps 3, 4 and 5 is described below. These steps are assessed in accordance with GLVIA3 and largely follow OPEN's methodology, which is described in full in Offshore EIA (Volume 3): Appendix 16.1.

1.3.2 Step 3: Assess the Sensitivity of WLA Qualities

NatureScot guidance summarises this step as follows: *"Through detailed field assessment within the Offshore Study Area, assess the sensitivity of the wild land qualities scoped in (including their physical attributes and perceptual responses), to the type and scale of change proposed".*

1.3.3 Value of Wild Land Areas

In applying GLVIA3 to the assessment, and as noted by NatureScot, it is necessary to attribute a value to the receptor; these are classified as high, medium-high, medium, medium-low or low, as described in Offshore

EIA (Volume 3): Appendix 16.1. The value attributed to nationally important designations, including National Parks (NP) and National Scenic Areas (NSA) is normally found to be at the upper end of the scale and classified as high.

Wild land is not an environmental designation and is not statutorily protected in the way that NPs and NSAs are for their scenic qualities. It is, however, recognised in Draft National Planning Framework 4 (NPF4) (Scottish Government, 2021) and Scottish Planning Policy (SPP) (Scottish Government, 2020) as a nationally important mapped resource, which should be afforded protection for its wildness qualities.

In order to apply objectivity to the attribution of value in wild land areas, it is helpful to have regard to the weighting that SPP gives to it. Whereas in SPP Table 1: Spatial Frameworks, Scottish Ministers place NSAs and NPs in the Group 1 category, Wild Land Areas are identified as a Group 2 consideration, recognising the difference in their respective values. As a matter of national policy, Wild Land is, therefore, less highly valued than NSAs and NPs.

NatureScot provides some further guidance on this matter in its publication 'Spatial Planning for Onshore Wind Turbines – Natural Heritage Considerations, Guidance' (SNH, June 2015). Annex 1 to this document provides advice on the potential landscape objectives that may be applicable in different landscapes within Scotland in terms of their ability to accommodate wind farms, suggesting that some landscapes should be subject to a higher level of protection than others.

Annex 1 places WLAs in the middle category, where some landscape 'accommodation' of windfarms may be considered appropriate, noting that:

"Within local landscape designations and Wild land Areas, the degree of landscape protection will be less than for National Scenic Areas. In these areas, an appropriate objective may be to accommodate windfarms, rather than seek landscape protection."

WLAs are, therefore, considered to have a lower inherent baseline value, in landscape terms, than nationally designated landscapes. In the terms of GLVIA3 and OPEN's methodology, it is reasonable to attribute a theoretical **medium-high** value to WLA 41. In the northern part of WLA 41, where there is overlap with the Hoy and West Mainland NSA, the value will be **high**, reflecting the national level of the landscape designation which covers these hills and coasts.

These levels of value are combined with individual assessments of susceptibility, which are described below, to inform the overall assessment of sensitivity within the WLA.

1.3.4 Susceptibility within Wild Land Areas

Susceptibility relates to the nature of the landscape receptor and how susceptible it is to the potential effects of the Offshore Development, as described in GLVIA3. Susceptibility varies across the WLA depending on the nature and strength of the WLQs, the particular perceptions that are experienced in different areas, and in the context of different external and internal influences.

OPEN's methodology assesses the susceptibility of landscape character receptors through a series of criteria, as set out in Offshore EIA (Volume 3): Appendix 16.1. Those relevant to the assessment of susceptibility of WLQs are summarised below:

- The specific nature of the Offshore Development: the susceptibility of landscape receptors is specific to the change arising from the particular development that is proposed, including its individual components and features, and its size, scale, location, context and characteristics.
- Landscape character: the key characteristics of the existing landscape character of the receptor are considered in the evaluation of susceptibility as they determine the degree to which the receptor may accommodate the influence of the Offshore Development (in the wild land assessment this criterion relates to the documented WLQs, physical attributes and perceptual responses of the WLA).
- Landscape association: the extent to which the Offshore Development will influence the character of coastal or landscape receptors across the Offshore Study Area relates to the associations that exist between the coastal or landscape receptor within which the Offshore Development is located and the coastal or landscape receptor from which the Offshore Development is being experienced. In some

situations, this association will be strong, where the seascapes, coasts or landscapes are directly related, and in other situations weak where the association is weak. The context and visual connection to areas of adjacent seascape, coast or landscape character or designations has a bearing on the susceptibility to development.

A useful tool in the assessment of the levels of susceptibility across the WLA is NatureScot's 2014 analysis of the data that was gathered in order to inform the identification of WLAs. NatureScot gathered data for each of the 'physical attributes' of wild land and used these to create a 'relative wildness map'. This process is documented in NatureScot's 'Mapping of Scotland's Wildness and Wild Land: Non–technical Description of the Methodology' (SNH, 2014). The 'Jenks Natural Breaks Optimisation method' was then used to identify the natural breaks in the distribution of the relative wildness data in order that levels of wildness could be identified and mapped. As a result, eight classes of wildness were identified, with 8 being the highest and 1 being the lowest. Maps showing relative wildness are presented in Figures 16.15a to 16.15e.

1.3.5 Step 4: Assess the Effects

NatureScot guidance notes this step as follows in Table 1: "*Assess the effects on individual and / or combinations of qualities, drawing out which physical attributes and perceptual responses will be affected, how and to what degree. This should reflect the size or scale of change, its extent and duration.*"

In order to conform with the nomenclature presented in GLVIA 3 and Technical Appendix 16.1 (Offshore EIA (Volume 3)), the 'magnitude of effect' is referred to in this assessment as the 'magnitude of change'. The 'magnitude of effect' and the 'magnitude of change', effectively cover the same considerations. OPEN's methodology for assessing magnitude of change on landscape character receptors is carried out through the application of a set of criteria as set out in Offshore EIA (Volume 3): Appendix 16.1.

Broadly, the magnitude of change that the Offshore Development will have on landscape receptors is assessed in terms of the size or scale of the change, the geographical extent of the area influenced and its duration and reversibility. The key elements of the Offshore Development that will influence the level of change on landscape character are the movement, form, material, colour and scale of the turbines and floating substructures.

1.3.6 Step 5: Judgement of the Significance of Effects

NatureScot guidance summaries this step as follows in Table 1: *"Conclude on the overall significance (taking into account any mitigation), in terms of the Offshore Study Area and where relevant the wider WLA."*

On the basis that the NatureScot guidance follows the principles of GLVIA3, OPEN's methodology for the assessment of the significance of effects has also been used for the assessment of the significance of effects on wild land, as described in Offshore EIA (Volume 3): Appendix 16.1. OPEN's methodology describes the significance of effects as quoted below.

"A significant effect will occur where the combination of the variables results in the Offshore Development having a defining effect on the view or receptor. A not significant effect will occur where the effect of the Offshore Development is not definitive, and the view or receptor continues to be characterised principally by its baseline characteristics. In this instance, a not significant effect would indicate that the Offshore Development may have an influence, but this influence will not be a defining one."

1.4 Assessment of Impacts on WLA 41

The following sections of this report assess the effects of the Offshore Development on WLA 41 Hoy following the five steps as described in NatureScot's 2020 Guidance.

1.4.1 Step 1: Define the Study Area and Scope of the Assessment

NatureScot guidance summarises this step as follows:

"Identify a study area appropriate to the scale of the proposal and extent of likely significant effects on the WLA."

Paragraph 16 of the guidance notes that:

"The rationale for the selection of the study area and scope of the assessment should be clearly stated and consider the following.

- *The extent of visibility and recognised routes / movement through the WLA. The scale of the proposal may not equate to the extent of effects (for example, a large proposal where visibility is limited to part of the WLA, a more focused study area may be appropriate).*
- *The wild land qualities likely to be significantly affected. The focus of the assessment should be on the qualities likely to be affected rather than where the proposal is located.*
- *The potential for cumulative effects."*

The study area for the wild land assessment is discussed below in relation to these three considerations.

1.4.1.1 Extent of Visibility

Prior to carrying out the assessment of effects on the WLA, it is important to establish the theoretical extent of the influence that the Offshore Development would have on the WLA. This is dependent on the extent of visibility and considers that in locations where the Offshore Development is not visible, it would have no influence on wild land characteristics. The level of visibility of the Offshore Development from the WLA can be seen in Figure 16.11, which shows the ZTV in relation to the WLA. Of the overall area of WLA 41, 39.5% would have visibility of the Offshore Development, while 60.5% would have no visibility of any part of the Offshore Development.

The ZTV in Figure 16.11 shows that theoretical visibility would be concentrated in the western half of WLA 41, with practically no visibility occurring in the eastern half. Visibility would extend almost continuously along the section of the west coast that is contained within WLA 41, between Rack Wick in the north and Little Rack Wick to the south. The extent to which visibility extends inland across the island, is largely determined by the ridgeline that runs from Knap of Trowieglen (399 m AOD) in the north, through Withi Gill (359m AOD) in the centre, to Genie Fea (236 m AOD) and Sky Fea (244 m AOD) in the south. There are also patches in this western half where no visibility occurs, owing to the screening effect of high cliffs and undulating landform, especially around the partially enclosed valleys of Summer Burn and Burn of Forse. The eastern parts of WLA 41 would gain practically no visibility, along with most of the northern and central parts.

Visibility across the western half of WLA 41 would occur in relatively large patches and would mostly comprise all 5 turbines. They would be seen at a minimum distance of 33 km, making them small scale and distant features in the wider view. The Horizontal Angle ZTV in Figure 16.8 shows that they would occupy between 0 and 1 degrees of the full 360-degree view, across most of those areas with visibility and 1 to 5 degrees in very small patches in the north-west corner of WLA 41. This means the Offshore Development would occupy an especially small and contained extent within the wider view.

Visibility of operational wind farm developments already occurs across the WLA, with Baillie Hill and Forss Wind Farms visible on the Mainland of Scotland albeit as distant and small-scale features. Inter-visibility with the Offshore Development also occurs with Causeymire, Halsary, Bad a Cheo and Achlachan further south. While there are small scale wind farms and single turbines on Hoy and West Mainland, these are not visible from the western parts of WLA 41, although with potentially some visibility from the central parts and eastern parts. While the addition of the Offshore Development would not appear as a new or unfamiliar feature, it would be seen to introduce wind farm development into the open seascape, where currently there are no other offshore wind farms.

It can be concluded that the effects of the Offshore Development would vary notably across the extent of WLA 41 and that the areas in the west are more relevant to the assessment as this is where theoretical visibility is shown to occur and where there is a greater potential for significant effects to arise. The sensitivity of WLA 41 as a whole combined with the small extents of the WLA does, however, suggest that despite variable visibility, the WLA Study Area should cover the entirety of WLA 41.

1.4.1.2 Recognised Routes and Movement

In respect of recognised routes and movement, the WLA 41 description states "*Hoy attracts a relatively high number of visitors, particularly to Lyness, Rackwick, the RSPB reserve in the north of the island and to the Old*

Man of Hoy. Within the WLA itself, however, there tends to be few visitors – partly because there are no constructed paths into the area and thus access is very challenging, but also because the area tends to be overlooked in favour of the hills and coast north of Rackwick, which include the Old Man of Hoy and Ward Hill, the island's highest peak."

Access tracks are evident to the north and south, but not within WLA 41 itself. It can be concluded that the effects of the Offshore Development on recognised routes and movement would be limited owing to the relative absence of routes and movement through this WLA. The consideration of recognised routes and movement would, therefore, have a limited bearing on the definition of the WLA Study Area.

1.4.1.3 Wild Land Qualities

In respect of WLQs, NatureScot guidance states *"rationale for the selection of the study area and scope of the assessment"* includes consideration of the "*wild land qualities likely to be significantly affected".*

WLA 41 has six WLQs. These are set out in Table 1.4-1 below, along with a judgement as to whether or not there is potential for them to be significantly affected by the Offshore Development located a minimum of 33 km to the south-west.

Table 1.4-1 WLQs with potential to be affected by the Offshore Development

Wild Land Quality (defined in NatureScot's WLA 41 Description)	Potential to be affected by the Proposed Consented Development
"WLQ 1: A relatively small area of wild land that sits within a wider archipelago, with a prevailing strong influence of the sea and exposure."	Indirect effects comprising visibility of the Offshore Development would potentially have an effect on this WLQ as it would provide an influence in views out towards the sea.
"WLQ2: The east and west sides of the area contrast strongly in landform, access and remoteness, with a hidden interior in-between that has a strong sense of remoteness and sanctuary."	Indirect effects comprising visibility of the Offshore Development would not affect this WLQ as it is only the sense of remoteness and sanctuary that could be affected which is largely derived from the WLA itself and with the Offshore Development at a minimum of 33 km having a limited effect on these qualities.
"WLQ 3: Dramatic, towering sea cliffs in the west that lead to perceived awe and naturalness."	Indirect effects comprising visibility of the Offshore Development would potentially have an affect on this WLQ as it could alter the perceived sense of awe and naturalness associated with the sea cliffs owing to its presence in the wider seascape setting.
"WLQ4: Subtle, gently-sloped hill slopes at a broad scale, containing a complex distribution of bog, pools, peat hags and burns at a local level, contributing to the sense of naturalness."	Indirect effects comprising visibility of the Offshore Development would not affect this WLQ as it is not susceptible to changes within the much wider setting.
"WLQ 5: A distinctive high, simple and remote hill backdrop within the Orkney archipelago."	Indirect effects comprising visibility of the Offshore Development would not affect this WLQ as the Offshore Development would only be seen against the hills of WLA 41 in views from the Mainland of Scotland at a minimum distance of 43 km and not from within WLA 41 itself.
"WLQ6: Few visitors and artefacts within the interior, despite the proximity of settlements and roads outside the area."	Indirect effects comprising visibility of the Offshore Development would not affect this WLQ as it is not susceptible to changes within the much wider setting.

It can be concluded that only two of the six WLQs have some degree of susceptibility to the effects of the Offshore Development and, therefore, that these two should be considered in the detailed assessment. The consideration of WLQs suggests that the whole of WLA 41 should form the WLA Study Area as it is a small WLA and despite visibility arising only across western and central parts, the WLA as a whole could be affected.

1.4.1.4 Potential for Cumulative Effects

The third point noted in NatureScot guidance as being relevant is the *"rationale for the selection of the study area and scope of the assessment*" is consideration of the "*The potential for cumulative effects".*

As assessed in the LVIA, operational and under-construction wind farms are considered as part of the baseline situation in the assessment of impacts on WLA 41, while the consented and application wind farms are considered as part of the predicted cumulative situation.

The Cumulative Wind Farm plan in Figure 16.16 highlights the limited number and size of wind farm developments within the vicinity of the Orkney Islands. The only two operational developments in the first 15 km radius of WLA 41, are the operational turbines at Ore Brae on Hoy and West Hill on Flotta. The fact that these are both single turbines, Ore Brae at 67 m to blade tip and West Hill at 100 m, means that the influence they have on the cumulative situation is limited. Between 15 and 20 km, there is only one other operational development - a single turbine at Northfield on Burray. There are also two under-construction single turbines, Akla at 15 km to the north-east and Berriedale at 18 km to the south-east. Again, the small scale of these developments means that they would have a limited influence on the cumulative situation.

There is a closer-range consented wind farm on Hoy, which comprises six turbines at 149.9 m, located in the south-east of the island, to the east of Lyness. This would have a notable influence on WLA 41 by bringing larger scale turbines close to and potentially into WLA 41. The extent of visibility would, however, be limited to the eastern side of WLA 41, such that intervisibility with the Offshore Development would be limited.

Consented Hesta Head Wind Farm is set at 18 km to the south-east and comprises 5 turbines at 125 m. The viewshed of the landform around Scapa Flow lies at approximately 15 to 25 km, such that inter-visibility with developments that lie in or beyond this radius is typically limited. This is true of the consented wind farm at Quanterness which comprises 6 turbines at 149.9 m, but which has a limited influence on the cumulative situation owing to low levels and extents of visibility.

There are more operational and proposed wind farms on the Mainland of Scotland, which are visible in good or excellent conditions from open shorelines and facing hill slopes of the closer Orkney Islands. Their separation distance of between 20 and 40 km combined with their location on a separate, larger and more developed island moderates their influence on the cumulative situation. Collectively, they do, however, form a presence along the northern Caithness Coast, extending from Stroupster in the east, through Baillie Hill and Forss, to Strathy North in the west.

The potential for cumulative is limited primarily by the location of the Offshore Development at a minimum of 33 km from WLA 41. While there would be an influence from a number of small to medium scale operational and proposed wind farms on the Orkney Islands, their cumulative influence would be limited by the patchy extents of visibility and very limited visibility across western parts of Hoy. There would also be an influence from operational and proposed wind farms on the Mainland of Scotland which are more extensive, albeit with their distant location also moderating their influence on the cumulative situation. The consideration of the potential for cumulative effects would, therefore, have a limited bearing on the definition of the WLA Study Area.

1.4.1.5 Identification of the WLA Study Area

In considering the extent of theoretical visibility, the potential effect on routes and movement through WLA 41, the potential for the WLQs to be affected and the potential for cumulative effects to arise, it is evident that some parts of the WLA have some potential to be significantly affected, while other parts would not be significantly affected or not be affected at all.

NatureScot's Guidance requires the establishment of a WLA Study Area at the outset of the assessment, that is "*appropriate to the scale of the proposal and extent of likely significant effects on the WLA".* If this guidance is followed, the WLA Study Area would form one part of WLA 41, related to the known extent of potential significant effects of the Offshore Development. The small area of WLA 41 combined with the variable influences from other operational and proposed wind farms means that the most appropriate approach requires an assessment covering WLA 41 as a whole.

1.4.2 Step 2: Establish the Baseline

NatureScot guidance summarises this step as follows in Table 1: "*Confirm the wild land qualities (set out in the WLA description) relevant to the Offshore Study Area, describing any major changes that have occurred since the description was prepared and the nature of their contribution to the WLA.*"

The baseline study is informed by NatureScot's description of the WLA, the mapping of the eight classes of wildness (SNH, 2014), OPEN's site visits, and Viewpoint 9: Path to Old Man of Hoy, 15: Ward Hill, Hoy, and Viewpoint 16: Tor Ness, Hoy, which illustrate the outlook across the WLA. It is important to note that while viewpoints provide a useful illustration of the views that can be gained from within the WLA Study Area, the assessment of effects on viewpoints and on WLAs is carried out separately and according to specific methodologies that vary in some respects. Viewpoints 9, 15 and 16 have, therefore, been referenced simply to provide an illustration of views from Hoy from close to and in some cases looking across the WLA Study Area.

1.4.2.1 Baseline Description

In order to understand the key characteristics and special qualities that have led to the WLA classification, this section presents a brief description of the landscape of the Hoy WLA. The published description of the Hoy WLA (41) (SNH, 2017) provides the following overview which emphasises the difference in character between the east and west of the WLA:

"Hoy is one of 11 island Wild Land Areas (WLA), and at 50 km^2 one of the smallest nationally, reached by ferry from Mainland (Orkney). The area is broadly oblong in shape and includes the interior hills of the island. One of 12 WLAs defined in part by the coast, access from the road is restricted to the north, east and south.

The high hills and cliffs of Hoy stand out within an archipelago of otherwise low-lying islands, and it provides a remote western edge to Scapa Flow. Upon the island itself, Hoy differs between its west and east sides: on the east are the main settlements and key road (B9047) across the island, in addition to industry and agriculture, set around the sheltered bays and sounds within Scapa Flow; whilst, on the west, the interior and coast is open, elevated and uninhabited.

Hoy, like the rest of the Orkney Isles, is formed of Old Red Sandstone, built up as layers of sediment mixed in with ancient lava flows. This is revealed most spectacularly along the exposed cliffs of the west coast, which are amongst the highest cliffs found in the UK.

Orkney possesses a long history of occupation, with a high number of archaeological features. The wild land qualities of the WLA, however, are not strongly influenced by historic features, apart from the northern edge towering above the Dwarfie Stane, an unusual rock-cut tomb.

The Hoy hills form an undeveloped backdrop to adjacent coastal communities and roads. During good visibility, the hills and western cliffs are also very prominent from Caithness and the ferry between Scrabster and Stromness, from which their towering height seems awe-inspiring. There are regular vehicular and passenger ferry services between Hoy and mainland Orkney, some of which travel via the islands of Graemsay or Flotta.

Hoy attracts a relatively high number of visitors, particularly to Lyness, Rackwick, the RSPB reserve in the north of the island and to the Old Man of Hoy. Within the WLA itself, however, there tends to be few visitors – partly because there are no constructed paths into the area and thus access is very challenging, but also because the area tends to be overlooked in favour of the hills and coast north of Rackwick, which include the Old Man of Hoy and Ward Hill, the island's highest peak. The northern part of the WLA lies within the Orkney National Scenic Area, whose description highlights that '…with their towering red cliffs, the Atlantic coastline creates a spectacular scene…' It also describes that, '…with their corries, deep U-shaped valleys and patterned ground, these rugged, moorland hills reflect their glacial history'."

While the key attributes and qualities cited in the description focus principally on the landscape of WLA 41, there are also select references to those landscapes and seascapes which form the wider setting, most notably the 'high hills of Hoy' which sit to the immediate north of WLA 41, but also the seascape off the west coast which presents the setting to the important coastal scenery, including views from the Scrabster to Stromness ferry and from the north Caithness coast. As the Offshore Development is located in this seascape, albeit at a minimum separation of 33 km, the relationship between WLA 41 and the seascape is relevant to this assessment of effects.

1.4.2.2 Review of NatureScot's WLA Description

This step of the assessment carries out a review of the baseline physical attributes and perceptual responses of WLA 41 and their contribution to the identified WLQs of the area, as identified in NatureScot's WLA description. OPEN agree that the six WLQs set out in the WLA Description are representative of WLA 41, to varying degrees, and does not dispute the factual accuracy of the information that is contained within the WLA Description.

On the basis of OPEN's extensive fieldwork, the WLA Description has been found to not accurately, or fully, capture the influence from human activity that exists around parts of the perimeter and how this diminishes the perceptual qualities of wildness in some areas, particularly to the south-east of WLA 41, but also to a lesser extent to the west.

The influence of sheep grazing, the prominent mast, service buildings and powerlines on Binga Fea, including lights at night, the wind turbine near Lyness and the Heldale water treatment buildings and track, as well as more distant elements, including boats, fish farms and the wind turbine and industrial development on Flotta, are all referenced in terms of their influence on the southern third of WLA 41. There is, however, also often an influence from oil rigs and the intermittent passage of ferries situated in Scapa Flow, as well as settlement around it. While there is very little development visible on the west coast, there are also intermittent ferries within the near range and onshore development on the Mainland of Scotland, visible in the distant range. WLA Description site work was undertaken in August 2014, since when, external influences have increased with the construction of Strathy North, Halsary, Bad a Cheo, Achlachan and other more distant wind farms.

1.4.3 Step 3: Assess the Sensitivity of the Wild Land Qualities

The sensitivity of WLA 41 is assessed by combining the value of the WLA and its susceptibility to the Offshore Development. NatureScot guidance summarises this step as follows in Table 1:

"Through detailed field assessment within the Offshore Study Area, assess the sensitivity of the wild land qualities scoped in (including their physical attributes and perceptual responses), to the type and scale of change proposed".

The value of the WLA has been established previously as **medium-high**, with the exception of the north-western corner, where the value is **high** owing to the overlap with the Hoy-West Mainland NSA.

NatureScot's 2020 Guidance requires the assessor to establish which WLQs are most sensitive to the type and scale of change proposed, referencing the physical attributes and perceptual responses that contribute to those qualities.

The ZTV in Figure 16.11 demonstrates that the eastern part of WLA 41 is not susceptible to the effects of the Offshore Development, as it would not be visible from this area. In contrast, the western and central parts of WLA 41 would be susceptible, partly owing to the extent of visibility shown on the ZTV. The WLQs vary across WLA 41, in terms of their strength and/ or the intensity to which they can be perceived. This means that the susceptibility that is attached to them must also vary across WLA 41.

The susceptibility of WLA 41 to the Offshore Development is affected by the following factors. Firstly, there is the strength and robustness of the landscape and coastal character, which defines the physical attributes of the WLA and the perceptual responses which arise as a consequence. This makes the content within the WLA boundary the primary feature and the surrounding landscapes and seascapes a secondary feature, albeit with the western inshore waters included in the WLA boundary. Secondly, while there is a close association between WLA 41 and the adjacent seascape it also presents an open, expansive and simple setting which would reduce awkward comparisons of scale or a sense of over development. Thirdly, there are existing human influences which are seen from the WLA 39, but which lie outwith the boundary. On the Orkney Islands there is the oil terminal at Flotta, small and medium scale onshore wind farms and settlements, with also ferries and other large and small vessels on the Pentland Firth. On the Mainland of Scotland, there is a series of onshore wind farms visible along the north Caithness coast, albeit distant from WLA 41.

In order to determine the overall sensitivity, the medium-high or high value of the western half of WLA 41 is combined with medium susceptibility of WLQ1 and WLQ3 to give an overall **medium-high** or **high** sensitivity.

1.4.4 Step 4: Assess the Magnitude of Change

A key component in assessing the significance of effects is to attribute the likely magnitude of change that may arise across the western parts of WLA 41, where there is the potential for significant effects to arise in respect of WLQ1 and WLQ3.

Table 1.4-2 Assessment of effects on wild land qualities

Wild Land Quality	Magnitude of Change to Baseline Wild Land Quality
"WLQ 1: A relatively small area of wild land that sits within a wider archipelago, with a prevailing strong influence of the sea and exposure." *"Located within the archipelago of the Orkney Isles, Hoy forms just one part of a complex composition of islands, bays and sounds – the sea never being far away. The Hoy hills offer a spectacular elevated vantage point of this wide composition and even further away to Caithness. These views include distant human artefacts and contemporary land use outwith the WLA – both on land and sea.* *There is a predominantly high degree of exposure across the area and the wider land and seascape, and high winds strongly influence natural processes such as soil and rock weathering, as well as the nature of waves along the coastline. These all contribute to a strong sense of naturalness throughout the WLA, whilst expansive views under 'wide skies' appear awe-inspiring in their horizontal extent and revelation of changing weather."*	The WLA 41 description highlights the importance of the adjacent seascape. The ZTV in Figure 16.11 shows that all seven of the WTGs would be visible from most of the western coast of WLA 41 and west facing slopes and summits of the Hoy hills. The open seascape forms part of the expansive backdrop to the WLA and adds to the sense of exposure and naturalness. The description does, however, recognise the fact that distant human artefacts and land uses – both on land and sea are already visible from parts of WLA 41. It is in this context that the addition of the Offshore Development would give rise to a low magnitude of change. The Offshore Development would be located a minimum of 33 km from the closest western edge of WLA 41 such that it would appear as a distant feature. The small number of seven WTGs would ensure that the Offshore Development forms a compact group that would occupy only a small proportion of the much wider 360-degree views – shown on the Horizontal Angle ZTV in Figure 16.8 to occupy between 0 and 1 degrees with smaller patches in the north-west between 1 and 5 degrees. Furthermore, the Offshore Development would be seen more closely associated with the coastline of the Mainland of Scotland and the presence of onshore wind farms along this coast would ensure that the Offshore Development would not present a new or unfamiliar influence. The limited influence of the Offshore Development would mean that it would not detract from the sense of naturalness, nor the openness and sense of exposure associated with the seascape. The Offshore Development would not notably detract from the prevailing strong influence of the sea and exposure, and the effect would be not significant.
"WLQ 3: Dramatic, towering sea cliffs in the west that lead to perceived awe and naturalness." *"The western cliffs of Hoy tower above the sea below – their vertical element emphasised in contrast to the horizontal expanse of the adjacent sea and peatland either side. Their rugged and precipitous nature is awe-inspiring, as well as being of high risk to visitors, whilst the presence of stacks, pinnacles, waterfalls, scree slopes and beaches indicate their very dynamic nature. This, in combination with the changing state of the sea, a high numbers of sea birds, and exposure to strong south westerly winds, conveys a strong sense of naturalness.* *The cliffs are difficult to see from the WLA interior due to landform screening. This means they are often encountered in surprise, maximising the arresting*	The WLA 41 description highlights the importance of the adjacent seascape to the setting of the western cliffs of Hoy. The ZTV in Figure 16.11 shows that all seven of the WTGs would be visible from most of the western coast of WLA 41. The Offshore Development would introduce an offshore wind farm into a seascape where currently there is no development, and which would form part of the 'horizontal expanse of the adjacent sea'. The magnitude of change would, however, be low for the following reasons. Firstly, the Offshore Development would be located a minimum of 33 km from the closest western edge of WLA 41 such that it would appear as a distant feature. The small number of seven turbines would ensure that the Offshore Development forms a compact group that would occupy only a small proportion of the much wider 360-degree views – shown on the Horizontal Angle ZTV in Figure 16.8 to occupy between 0 and 1 degrees or small patches of

nature of their experience. The coastline is, however, slightly scalloped in line, including a number of geos and bays, which allows views along the cliffs from the promontories. The cliffs are at their highest within the northern part of the WLA, gradually descending towards the south."	1 to 5 degrees in the north-west corner. Thirdly, the Offshore Development would be seen more closely associated with the coastline of the Mainland of Scotland and the presence of onshore wind farms along this coast would ensure that the Offshore Development would not present a new or unfamiliar influence. Fourthly, while there is currently no other development in the Pentland Firth, two to three ferry crossings per day means that large boats pass close to this coastal edge. These factors would all moderate the influence that the Offshore Development would have on the perceived awe and naturalness of the sea cliffs such that it would not be able to compete with the close range, large scale and dramatic features of the coastline. While the Offshore Development would add a new feature in the open seascape to the south-west of WLA 41, it would not notably detract from WLQ3 which is defined as the perceived awe and naturalness relating to the dramatic coastal cliffs. The Offshore Development would not redefine the character of this coastline and the effect would be not significant.

1.4.4.1 Cumulative effects

The assessment presented in Table 1.4-2 above, considers the cumulative effect that the Offshore Development would give rise to in addition to the baseline wind farm context comprising all operational wind farms, including Stroupster, Baillie Hill, Forss and Strathy North on the Mainland of Scotland and other smaller scale wind farms and turbines on Hoy and the other Orkney Islands. The three other cumulative scenarios that need to be considered are Scenario 1, in which the cumulative effects of the Offshore Development are considered in conjunction with all operational and consented wind farms and other large-scale developments, Scenario 2, in which the cumulative effects of the Offshore Development are considered in conjunction with all operational, consented and application stage wind farms and other large-scale developments, and Scenario 3, in which the cumulative effects of the Offshore Development are considered in conjunction with all operational, consented and application stage wind farms and other large-scale developments, as well as the future proposed West Orkney Offshore Wind Farm.

1.4.4.2 Scenario 1

The operational wind farms with an influence on WLA 41 are mostly located on the Mainland of Scotland, albeit with their influence moderated by their separation distance and their relatively small scale. Scenario 1 also includes consented Hoy Wind Farm which draws the influence of wind farm development onto the Island of Hoy and presents a notable influence on the WLA owing to its location on the southern boundary. Hoy Wind Farm comprises six WTGs each 149.9 m to blade tip. The cumulative magnitude of change would be low. While Hoy Wind Farm would contribute to the cumulative context, the distant location of the Offshore Development at a minimum distance of 33 km would limit the influence it has on the WLQs of the WLA, and this in turn will reduce its cumulative interaction with Hoy Wind Farm.

The combination of the medium-high or high sensitivity and the low cumulative magnitude of change would give rise to a **not significant** cumulative effect on the WLA in respect of Scenario 1.

1.4.4.3 Scenario 2

Under Scenario 2, the addition of the application stage developments to the cumulative context would make little change compared to Scenario 1, as they would all be located on the Mainland of Scotland at distances in excess of 30 km and seen in conjunction with other operational and/or consented developments. The cumulative assessment for Scenario 2, would, therefore, be the same as assessed under Scenario 1.

The combination of the medium-high or high sensitivity and the low cumulative magnitude of change would give rise to a **not significant** cumulative effect on the WLA in respect of Scenario 2.

1.4.4.4 Scenario 3

West Orkney Offshore Wind Farm would be seen as an extensive spread of offshore WTGs across the seascape of the North Atlantic to the west of the WLA, at a minimum distance of approximately 27 km. While

the Offshore Development would not be seen to introduce wind farm development into an undeveloped seascape, it would be seen to spread the influence of offshore wind farms closer to the northern coast of the Mainland of Scotland. The seven WTGs would make the Offshore Development appear much smaller in extent compared to the much larger number of WTGs that are likely to make up West Orkney Offshore Wind Farm, which would appear similar in scale owing to their comparable separation distances from the WLA. The cumulative effect would be moderated by the substantial separation distances between the WLA and both the Offshore Development and the West Orkney Offshore Wind Farm, which means both would be seen as relatively distant features with the Offshore Development occupying only a small extent of the wider 360-degree view. The cumulative magnitude of change would be **low**.

The combination of the medium-high or high sensitivity and the low cumulative magnitude of change would give rise to a **not significant** cumulative effect on the WLA in respect of Scenario 3.

1.4.5 Step 5: Judge the Significance of Effects

In Step 1 of this assessment, following considerations set out in NatureScot Guidance, it was determined that the WLA 41 Study Area cover the whole of the WLA 41, owing to its small size and despite visibility of the Offshore Development shown on the ZTV to occur across the eastern and some central parts (Figure 16.11). In Step 1, it was also determined that of the six WLQs evident in WLA 41, only WLQ1 and WLQ3 would be susceptible to the effects of the Offshore Development.

In Step 2 of this assessment, an analysis of the baseline conditions highlighted that all six of the WLQs were indeed present in WLA 41, albeit to variable extents and with some existing erosion of these WLQs already having taken place in the eastern parts which are closer to settlements, roads and contemporary land uses such as farming and forestry, as well as industrial developments on Flotta and operational wind turbines.

In Step 3 of this assessment, the sensitivity of WLA 41 to the Offshore Development has been assessed as being medium-high, through a combination of the medium-high value, relating to the WLA status, and the medium susceptibility to the Offshore Development, considering its distant location in the Pentland Firth. In the north-west corner of WLA 41, the value is high owing to the overlap of this area with the Hoy – West Mainland NSA, and when combined with the medium-high susceptibility this gives rise to a high sensitivity.

In Step 4 of this assessment, the magnitude of change on WLQ4 has been assessed as low. This takes into account the notable separation distance between the Offshore Development and WLA 41, the small proportion of the wider views that the seven offshore WTGs would occupy, their association with the closer coast of the Mainland of Scotland than the coast of Hoy, and the baseline influence from the onshore wind farms on the Mainland of Scotland and passenger ferries off the Hoy Coast.

While there is potential for cumulative effects to arise through the addition of the Offshore Development, these would not be significant owing principally to the notable separation distance between the Offshore Development and WLA 41, as well as the separation between the other cumulative developments and the WLA. This means that the cumulative interaction between the Offshore Development and other existing and proposed developments would not give rise to significant cumulative effects

In conclusion, OPEN is of the professional opinion that while the Offshore Development would affect WLQ1 and WLQ3 across western parts of WLA 41, the magnitude of change on these WLQs would be incremental owing to the notable separation distance between the Offshore Development and WLA 41 of beyond 33 km. This finding should be considered in conjunction with the following statement set out in paragraph 5 of NatureScot's guidance;

"This guidance should only be applied to proposals whose nature, siting, scale or design are likely to result in a significant effect on the qualities of a WLA. Given this, assessments are more likely for proposals within a WLA, and are less-likely for proposals outwith the WLA."

On this basis, OPEN considers that the Offshore Development would not affect the integrity of the WLQs that are experienced in WLA 41 and that while effects may arise, the magnitude of change would be low and the effects would be not significant.

1.5 References

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