19 LANDSCAPE, SEASCAPE AND VISUAL IMPACT ASSESSMENT

19.1 The table below provides a list of all the supporting studies which relate to the Landscape, Seascape and Visual Assessment. All supporting studies are provided on the accompanying CD.

Details of study	Location on supporting studies CD
MeyGen Socio Landscape, Seascape & Visual Impact Assessment. Technical Appendix (HRI, 2011)	ONSHORE\Landscape, seascape and visual assessment

19.1 Introduction

19.2 This section addresses the impacts of the Project on the landscape and seascape and also the impacts on visual amenity. The assessment had the following contributors:

- HRI Architects – visual amenity; and
- Mike Wood Consultant – landscape and seascape.

19.3 The main aim of the landscape/seascape and visual impact assessment (LSVIA) is to identify the areas of landscape, seascape and visual amenity of the local area that will be impacted by the Project; identify what the likely effects on these resources will be; indicate measures to avoid, reduce, remedy or compensate for these effects and provide an assessment of the nature and significance of those effects. The effects studied involve both objective and subjective impacts such as changes in perception of the local landscape/seascape.

19.4 Landscape/seascape impacts are changes in the character and quality of the landscape as a result of a particular development. The process of landscape/seascape character assessment (LSCA) is used to assess these changes to enable better planning, conservation, restoration, management and enhancement. LSCA is based on the principle that all landscapes/seascapes have a range of features and characteristics which not only give them their appearance, but also contribute to their wider character, for example through historical, artistic and social associations. In combination, these features and characteristics provide landscapes/seascapes with their 'character' or 'distinctiveness'.

19.5 Visual impacts are a subset of landscape impacts. The assessment is a subjective process as it involves individual perception, aesthetic tastes and visual comprehension. It is possible, however, to bring objectivity to the assessment and treatment of visual impact by considering the factors which influence it, including height, colour, size and associations with nearby features, including, for example, the presence of rock outcrops and existing manmade features. These factors are ultimately influenced by meteorological, topographic position, season and observer characteristics.

19.6 This section addresses the specific landscape, seascape and visual impacts of the Project in terms of:

- Onshore development; site development, access requirements, building(s) development, related land and civil engineering works;
- The assessment covers installation and operational phases for onshore and offshore works and facilities, and
- The assessment is based on installation, operational and site/building(s) development requirements as defined by the Project technical definitions (Section 5).

19.7 As the offshore aspects of the development will not result in any permanent infrastructure above water, no photomontages have been produced for this aspect of the development. The presence of vessels in the seascape during installation and ongoing operations and maintenance has however been addressed qualitatively.

19.8 MeyGen has considered two sites for the combined Horizontal Directional Drilling (HDD) activities during cable installation and the Power Conversion Centre (PCC). This assessment has addressed the potential landscape, seascape and visual impacts for both these options; Ness of Quoys and Ness of Huna. Site layouts, building design options and photomontages have been provided for both sites. At this stage in the development programme of the Project it is not possible to confirm which of these sites will be taken forward. As such planning applications will be submitted for both of these sites, however only one will be developed for Phase 1 of the Project.

19.9 The cable connections between the Power Conversion Unit Buildings (PCUBs) and the grid connection point will be installed underground and therefore not result in any long term landscape, seascape or visual impacts. As such, this aspect of the development is not considered.

19.10 Impacts on cultural heritage setting are addressed within the Onshore Cultural Heritage section (Section 20).

19.2 Assessment Parameters

19.2.1 Rochdale Envelope

19.11 In line with the Rochdale Envelope approach, this assessment considers the maximum ('worst case') project parameters. Identification of the worst case scenario for each receptor (i.e. Environmental Impact Assessment (EIA) topic) ensures that impacts of greater adverse significance would not arise should any other development scenario be taken forward in the final scheme design. Table 19.1 describes the detail of the project parameters that have been used in this assessment and explains why these are considered to be worst case. The potential impacts from alternative Project parameters have been considered in Section 19.7.

Project parameter relevant to the assessment		'Maximum' Project parameter for impact assessment	Explanation of maximum Project parameter
Onshore Power Conversion Centre (PCC)	Construction, operation/maintenance and decommissioning	3 PCUBS (dimensions 45m l x 30m w x 13m h) and control building (17m l x 7m w x 4.5m h) at both Ness of Quoys and Ness of Huna assessment areas	Assessment of potential impacts associated with the construction, operation and decommissioning of new buildings at both the Ness of Huna and Ness of Quoys potential PCC locations. Photomontages have been produced for the permanent above ground infrastructure only.
Onshore cable routes between PCC and SHETL substation	Construction, operation/maintenance and decommissioning	All potential cable corridors between PCC locations and SHETL substation proposed at Phillips Mains (see Figure 2.1) (at EIA commencement)	Assessment of potential impacts associated with cable installation along all potential cable corridors identified between PCC locations and SHETL substation proposed at Phillips Mains. As all cables will be buried, there has been no requirement to assess impacts during construction or produce photomontages for the operational phase of the Project.
Cable landfall	HDD site	Maximum potential footprint of both Ness of Quoys and Ness of Huna (at EIA commencement)	Assessment of potential impacts associated with the HDD of the cable bores, during the Project construction phase. Cable landfall will be underground HDD bores and therefore there is no landscape, seascape or visual impacts associated with the permanent cable landfall.
Offshore Project	Installation vessel physical	1 Dynamic Positioning (DP)	Installation activities will be carried out

Project parameter relevant to the assessment		'Maximum' Project parameter for impact assessment	Explanation of maximum Project parameter
components	presence	vessel for the duration of the installation for year 1 and 2 2 DP vessels for year 3 installation	by a single DP vessel during year 1 and 2, all installation activities to be undertaken using a single DP vessel. If other smaller vessels used to undertake some of the work of the DP vessel, no concurrent multiple vessel activities will take place, i.e. no more than one vessel on site at any one time. Year 3 installation will require a maximum 2 DP vessels for TSS installation. These two vessels may be present on site at the same time during year 3.
	Maintenance vessel physical presence	1 DP vessel present every 2.8 days	Based on a maximum 86 turbine array, 1 DP vessel will be present a maximum of 130 times (i.e. single slack tide operation) per year i.e. the DP vessel present on site every 2.8 days.

Table 19.1: Rochdale Envelope parameters for the landscape, seascape and visual impact assessment

19.2.2 Study area

19.12 Taking into account current guidance on other development types, and on discussions at the EIA Scoping and pre-application stages with Scottish Natural Heritage (SNH) and The Highland Council (THC), it was concluded that on a realistic and pragmatic basis the proposed development is unlikely to result in significant seascape, landscape, or visual impacts beyond a 10km radius from the centre of the site. The study area shown on Figure 19.1 was therefore selected.

19.13 It should be noted that since this assessment was completed on a larger project area (Figure 19.1) this has since been refined to a smaller footprint at both the Ness of Quoys and Ness of Huna PCC sites and a single cable corridor to the SHETL substation option areas. The final project is described in Section 5 and shown in Figure 5.2; the selection process for these is discussed in Section 4.

19.3 Legislative Framework and Regulatory Context

19.3.1 Relevant legislation

19.14 The EIA Regulations are the only legislation directly relevant to this assessment.

19.3.2 Policy and guidance

19.15 The methodology for the landscape, seascape and visual assessment has been agreed with THC and SNH. It takes into account best practice methodologies and the undernoted policy and landscape / seascape characterisation guidance:

- Handbook on Environmental Impact Assessment 2011 - Appendix 1: LSVIA assessment, SNH (2011);
- Guidance on Landscape / Seascape Carrying Capacity for Aquaculture, SNH (2008);
- Highland Renewable Energy Strategy (HRES) and planning guidelines, The Highland Council (May 2006);
- Visualisation Standards for (wind energy) developments, The Highland Council (2009);
- Caithness Local Plan 2002: R9/10 and general policies[1], The Highland Council (2002);
- Assessment of Highland Special Landscape Areas, The Highland Council (2011);
- Advice Note 01/11, Photography and photomontage in landscape and visual assessment, Landscape Institute;
- 'Landscape Character Assessment for England and Scotland', Scottish Natural Heritage (SNH) and The Countryside Agency (2002);
- Guidance for Landscape and Visual Impact Assessment, The Landscape Institute and the Institute of Environmental Management and Assessment (IEMA), second edition (2002);
- Cumulative Effects of Windfarms' – Version 2, Revised 13.04.05, SNH (2005);
- Visual Representation of Windfarms Good Practice Guidance, SNH commissioned report F03 AA 308/2 (2006);
- Policy Statement No 02/03 – Wildness in Scotland's Countryside', SNH (2002);
- Assessing the Impacts on Wild Land – Interim Guidance, SNH (2007);
- An assessment of the sensitivity and capacity of the Scottish seascape in relation to offshore windfarms. Scottish Natural Heritage Commissioned Report No.103 (ROAME No. F03AA06), Scott, K.E., Anderson, C., Dunsford, H., Benson, J.F. and MacFarlane, R. (2005);
- Caithness and Sutherland Landscape Character Assessment Scottish Natural Heritage (SNH) Review No 103, Stanton, C. (1998);
- The siting and design of aquaculture in the landscape: visual and landscape considerations, SNH (2011);
- An Inventory of Gardens and Designed Landscapes[2];
- The consolidated Scottish Planning Policy (SPP), which supersedes SPP 6 Renewable Energy, NPPG 13 Coastal Planning and NPPG Natural Heritage;
- The Highland Structure Plan 2001[3]; The Highland Council (2001);
- The Highland-wide Local Development Plan (HWLDP), The Highland Council (2012)[4]; and
- SNH Policy Statement No. 05/01; SNH's Landscape Policy Framework.

19.16 It should also be noted that in the EIA Scoping Opinion received from Marine Scotland reference was made to draft SNH guidance on the Landscape and Visual Impact Assessment of Marine Renewables – Guidance for Scoping an Environmental Statement (ES). However, this draft guidance is not yet publically available and therefore it has not been possible to reference it during this assessment.

[1] Still in force at time of EIA and ES compilation.
[2] http://data.historic-scotland.gov.uk/pls/htmldb/f?p=2400:10:0
[3] Still in force at time of EIA and ES compilation.
[4] Not adopted at the time of the EIA and ES compilation.

Figure 19.1: Study area

19.4 Assessment Methodology

19.4.1 Overview methodology

19.17 The methodology applied to assess the landscape, seascape and visual impacts of the Project consists of baseline assessment and assessment of impacts.

19.18 A baseline assessment consists of:

- A desk study to establish the existing conditions, including the landscape and seascape context and character of the study area and the principal visual influences and viewpoints in the area, including the preparation of a Zone of Theoretical Visibility (ZTV) for the Project;
- Field survey work to verify the important landscape, seascape and visual characteristics of the area highlighted by the desk study; and
- The identification of receptors, which were confirmed after stakeholder review.

19.19 An assessment of impacts, which includes:

- Identification and evaluation of potential physical impacts on the landscape: Physical effects are restricted to the area within the Project site boundary, and are the direct effects on the fabric of the Project site, such as the removal or addition of trees and alteration to ground cover;
- Identification and evaluation of potential impacts on landscape character: Landscape character is "the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived" (GLVIA, 2002). Impacts on landscape character arise either through the introduction of new elements that physically alter this pattern of elements, or through visibility of the proposed development, which may alter the way in which the pattern of elements is perceived. This category of effects occurs on landscape character receptors, which fall into two groups; landscape character areas and designated areas;
- Identification and evaluation of potential impacts on seascape character: Seascape character is analogous to landscape character, and has been defined as "the physical characteristics of hinterland, coast and sea plus a range of perceptual responses to the seascape, as well as visual aspects." (Scott *et al*, 2005). Impacts on seascape character arise from visibility of the proposed development, which may alter the way in which the pattern of physical elements is perceived;
- Identification and evaluation of potential visual impacts: Visual impacts arise from the introduction of the Project affecting views throughout the study area, which have been selected to be representative of visual receptors including settlements and routes; and
- Identification and assessment of cumulative impacts.

19.4.2 Scoping and consultation

19.20 Since the commencement of the Project, consultation on landscape, seascape and visual impact assessment issues has been ongoing. Table 19.2 summarises all consultation relevant to landscape, seascape and visual impact assessment. In addition, relevant comments from the EIA Scoping Opinion are summarised in Table 19.3, together with responses to the comments and reference to the ES sections relevant to the specific comment.

Date	Stakeholder	Consultation	Topic/specific issue
7th April 2011	Marine Scotland and SNH	Pre-Scoping meeting	EIA surveys and studies required and the data needs for each EIA study.
27th May 2011	Marine Scotland, statutory consultees and non statutory consultees	Submission of EIA Scoping Report	Request for EIA Scoping Opinion from Marine Scotland and statutory consultees and request for comment from non statutory consultees.
30th June – 2nd July 2011	Local stakeholders	Public Event - EIA Scoping	Public event to collate information/opinions on proposed EIA scope.
7th July 2011	The Highland Council Planning Service	Meeting	LSVIA methodology / project scope / visual impact / design / planning procedure / details of submission.
14th July 2011, 26th July 2011, and 16th August 2011	The Highland Council and SNH	E mail correspondence	Briefing / receptor viewpoint locations / onshore design issues.
26th July 2011	The Highland Council Planning Service	Meeting	Visual impact / installation works / LSVIA viewpoint definition.
28th July 2011	SNH	Meeting	Presentation of the LSVIA methodology.
6th September 2011	The Highland Council, The Highland Council's Historic Environment Team, SNH	Onsite Workshop in Caithness	Onsite workshop to discuss the LSVIA and historical setting aspects of the project and agree viewpoints for visual impact assessment.
14th September 2011	The Highland Council	Meeting	Planning pre application meeting. Presentation on overall project and results of EIA studies to date. Included discussion on building design / development extent sustainable design additional viewpoints required.
31st September 2011	Marine Scotland, The Highland Council, statutory consultees and non statutory consultees	Receipt of EIA Scoping Opinion	Receipt of response to EIA Scoping Report and other comments from non statutory consultees.
10th October 2011	The Highland Council	Receipt of pre application advice	Receipt of pre application advice from Highland Council.
16th November 2011	The Highland Council	Telephone call	Confirmation that photomontages only need to meet SNH's standards and guidance and do not need to meet The Highland Council's Visualisation Standards for Wind Energy Developments (2010).
6th – 7th December 2011	Local stakeholders	Public Event – pre application consultation	Public event to communicate the findings of the EIA to local stakeholders.

Table 19.2: Consultation undertaken in relation to the LSVIA

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
SNH	We welcome the pre-application consultation with the landscape architects employed by MeyGen Ltd, with discussions focusing on the landscape and visual impact assessment. The following advice on the approach and methodology presented in the EIA Scoping Report is in addition to advice previously given and the draft SNH guidance - 'Landscape and visual impact assessment of marine renewables – guidance for scoping an Environmental Statement' (2011).	Noted; consultation meeting 21/07/11. Guidance and methodology referenced and incorporated in LSVIA.	Section 19.3 Legislative Framework and Regulatory Context
SNH	In general, the seascape and visual impact assessment should consider: • the potential impacts during installation, maintenance and decommissioning operations, and • the potential	The LSVIA has addressed all Project operations described. There are no proposed lighting and/or buoys and neither will	Sections 19.2.1 Rochdale Envelope and 19.6: Assessment of

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
	impacts of all lighting and buoys that accompany installation, operation and decommissioning. • the potential impacts during periods if / when structures break the surface.	the tidal turbines ever break the sea surface.	Impacts
SNH	Proposed on-shore works – cable-landing, cable vault, substation, construction compounds and work in the inter-tidal zone are considerable (see figure 6 of the EIA Scoping Report). These will require a full landscape and visual impact assessment. We will be able to provide more advice in this regard when the proposals are further progressed and the applicant is able to provide further detail.	The LSVIA has addressed all potential onshore infrastructure for all Project operations.	Sections 19.2.1 Rochdale Envelope and 19.6 Assessment of Impacts
SNH	Baseline environment - Fieldwork is a fundamental part of EIA. The Seascape and Landscape Character Assessment needs to examine both the regional and local coastal landscapes and seascape. While SNH's Scottish seascape (Scott *et al*. 2005) report is a helpful reference we emphasise that it is a strategic assessment, a 'nationwide' look at the coast, with general descriptions of seascape character types. These were tested against a specific, set theoretical windfarm scenario to explore issues of sensitivity and visibility. Furthermore, in this study fieldwork was not a major part of the assessment process, which was limited to a strategic desk-based approach. Thus, the seascape units are of only limited use in appraising actual development proposals and need refinement in order to examine the impacts of a specific proposal.	Seascape assessment has followed general guidance and also been informed by site specific fieldwork, analysis and assessments.	Section 19.5 Baseline Description and Section 19.6 Assessment of Impacts
SNH	Field work is required to do this, and we recommend that the applicant uses the coastal character methodology developed for aquaculture capacity studies. This approach identifies areas of consistent seascape character with strong integrity, like a specific bay or stretch of coast. We recommend that these local coastal character areas are defined at a scale comparable to the existing LCAs and will be informed by them and field work.	Noted and referenced. Seascape assessment has been informed by site specific fieldwork, analysis and assessments.	Sections 19.3 Legislative Framework and Regulatory Context and 19.4 Assessment Methodology
SNH	The Highland Coastal Development Strategy (May 2010) will assist in identifying stretches of isolated and undeveloped coast. Another source that may help initially with coastal characterisation is a critical appraisal of the relevant sections of The Beaches of Scotland series (SNH Commissioned Reports Series 1969-1981) – available from SNH publications. This series of regional reports offers a quantified description of many aspects of Scotland's coastline, including associated dunes, links and machair areas that can be useful in informing and defining local coastal character areas.	As above.	Sections 19.3 Legislative Framework and Regulatory Context and 19.4 Assessment Methodology

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
SNH	EIA Methodology - We recommend that Chartered Landscape Architects, preferably a team of at least two, should carry out the landscape and visual impact assessment.	Fieldwork to define seascape character areas, refine landscape character areas, assess landscape and seascape impacts and validate viewpoint impacts was carried out by a Chartered Landscape Architect. Other fieldwork was undertaken by qualified architects.	Section 19.4 Assessment Methodology
SNH	The described approach uses the accepted good practice outlined in 'Guidelines for Landscape and Visual Impact Assessment' (LI-IEMA, 2002). The assessment process for coastline, landscape and seascape is essentially the same, although each area has its own specific characteristics, as well as other shared characteristics. It is important to consider the key elements that are specific to each environment, whether land-based or marine. It is these that differ, not the method of character assessment.	Referenced and guidance informs LSVIA.	Sections 19.3 Legislative Framework and Regulatory Context
SNH	Although the techniques and methods developed to evaluate seascapes are helpful, (such as SNH's seascapes work) it needs to be critically assessed. This is because of Scotland's specific coastal conditions and qualities, but also because the report findings relate to offshore windfarm development. While our knowledge of the likely impacts of the new tidal technology is limited, some of the principles developed in relation to the siting and design of aquaculture may be relevant. With this in mind we refer the applicants to SNH guidance on Marine Aquaculture and the Landscape .	Noted and referenced.	Section 19.3 Legislative Framework and Regulatory Context
SNH	Essentially, a coastal landscape assessment clearly related both 'seawards' and 'landwards' is required. Once the baseline is established, judgments on sensitivity and impacts can then be made. Establishing the relationship of landscape character to seascape character (and vice versa) is fundamental to the assessment. Important elements to consider include the contrast of form, pattern, texture and colours between the landscape and sea; and the effects of the development's form, pattern, texture and colours within this.	Noted and referenced; onshore and offshore viewpoint's incorporated.	Section 19.6 Assessment of Impacts
SNH	Visibility and Zones of theoretical visibility - In assessing visibility, reference should be made to SNH's guidance on the Visual Representation of Wind farms (December 2007). Although the VRW guidance relates to onshore wind farms, this gives practical guidelines on the preparation, presentation and application of visibility maps, viewpoints and visualisations.	Noted and referenced; informs ZTV mapping.	Section 19.4 Assessment Methodology
SNH	Viewpoint Selection and Assessment - Viewpoints should be selected in negotiation with MS LOT and statutory consultees, principally the Local Planning Authority and SNH. Viewpoints selected by the	An iterative viewpoint selection and assessment process has been undertaken. Initially 30 receptor points assessed and	Section 19.4.6 Viewpoints

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
	planning authority may include additional residences and public buildings, as local authorities have other interests in addition to those of SNH. Initially lengthy, the viewpoint list is likely to be shortened as viewpoints that best illustrate the most significant likely impacts, or help the most with design iteration, become obvious.	discussed / evaluated with THC / SNH to agree chosen viewpoints for photomontages. Viewpoint and selection process also presented to Marine Scotland.	
SNH	Public consultation on viewpoint selection is recommended. The selection of viewpoints and the direction of views selected should be based on the identification of potentially sensitive receptors (people, places and activities) and potentially significant views, locations or landscapes, taking into account the likely impacts of the tidal array.	Extensive viewpoint selection and assessment process has been undertaken in conjunction with The Highland Council and SNH. The viewpoints used in this assessment have been agreed with The Highland Council and SNH. This process was presented to and discussed with the public in the pre application consultation phase.	Section 19.4.6 Viewpoints
SNH	The choice of all viewpoints should be informed by the cumulative ZTV as well as the individual ZTV. Although it is possible to add supplementary viewpoints as part of a cumulative VIA, it is preferable to use all or some of the same viewpoints for both the individual and cumulative VIA.	Chosen viewpoints informed by ZTV mapping. Cumulative assessment informed by likely extent of study areas of projects which identified might contribute to cumulative impacts.	Section 19.4 Assessment Methodology and 19.8 Cumulative Impacts
SNH	View type - Viewpoints should be selected in order to show: a) Areas of high landscape or scenic value; both designated and non designated. For example NSA's, AGLV's, GDL's, search areas for wild land, tourist routes and local amenity spaces; b) A full representation of views from a range of distances, aspects, landscape character types and visual receptors; to include coastal views looking out to the coast and back, as well as across water to opposing shores c) All aspects of the Project, i.e. illustrate it "in the round" to help in the design development and assessment processes. This will also enable assessment of a range of light conditions e.g. side-lit, back-lit and front-lit; d) Visual composition. For example focussed or panoramic views, simple or complex; e) The variety of images that the tidal array will present from coastal areas as well as important coastal hilltops and landmarks; f) A range of distances; g) A range of elevations; h) Sequential along specific routes; i) The full range of different types of views, e.g. popular hilltops, footpaths and other recreational routes, key transport routes (on and offshore where relevant), minor roads where the array will be the focus of the view, settlements, cultural and recreational foci, and so on.	Guidance referenced and informed viewpoint selection incorporating onshore and offshore viewpoints. All field sheets for each viewpoint are included in the LSVIA Technical Appendix.	Section 19.4.6 Viewpoints and LSVIA Technical Appendix
SNH	Viewer Type - j) The full range of receptor groups, e.g. residential, work, road users and other travellers, walkers, other recreational users, etc.; k) Various modes of movement. For example	All viewer types listed have been considered in the assessment. All field sheets including details of receptor	Sections 19.4.6 Viewpoints, Section 19.6 Assessment of Impacts and

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
	those moving through the landscape, across ferry and popular recreational sailing routes, or stationary	types for each viewpoint are included in the LSVIA Technical Appendix.	LSVIA Technical Appendix
SNH	In addition to representative viewpoints, it is important to consider viewpoints that are already important vantage points within the landscape, for example local visitor attractions, scenic routes, or places with cultural landscape associations.	All viewpoint types listed have been considered in the assessment. All field sheets including details of receptor types for each viewpoint are included in the LSVIA Technical Appendix.	Sections 19.4.6 Viewpoints, Section 19.6 Assessment of Impacts and LSVIA Technical Appendix
SNH	The developer should be aware that further or alternative viewpoints may need to be considered throughout the VIA process.	Understood and iterative process undertaken included negotiation on viewpoints for photomontage production.	Section 19.4.6 Viewpoints and 19.6 Assessment of Impacts
SNH	The local planning authority may have additional considerations regarding viewpoint selection. Elevated viewpoints, for example those on coastal walks and hilltops are particularly useful in exploring the layout and design. Precise adjustment of the viewpoint location should be made to avoid underestimation of the visual effect by, for example, the judicious positioning of screening objects.	Viewpoint analysis included consultation with THC.	Section 19.4.6 Viewpoints
SNH	The precise location of the viewpoint (including 12 figure OS grid reference and a brief description), viewpoint height (mAOD), nature of view (width of view in degrees and bearing of key foci within view) and conditions of assessment should be given. This should give details of the orientation to and distance from the Project, date, time of day and weather conditions and visual range, when the photographs were taken and the assessment made. It is helpful if a small insert map (based on a 1:50000 OS base map) showing the viewpoint's detailed location and direction is given alongside each visualisation.	Incorporated in viewpoint schedule and mapping and incorporated in baseline photography and photomontage sections.	LSVIA Technical Appendix.
SNH	All viewpoint information should be presented in a table and cross-referred to a ZTV map on which all of the numbered viewpoints are plotted.	All viewpoints listed in a table and included on a map, indicating which ones have been taken forward for assessment and photomontage production.	Section 19.4 Assessment Methodology
SNH	The characteristics visible from each viewpoint that are sensitive development on the sea-surface should be described and assessed, particularly in relation to changes the development would cause. Factors such as season, weather, air clarity, movement, orientation to prevailing winds, in relation to the viewer, and any screening elements may be relevant. The design and layout of lighting and buoys associated with the tidal array, as it would appear from each viewpoint, should also be described and assessed.	Vessel activities associated with the Project have been considered. There are no proposed lighting and/or buoys and neither will the tidal turbines ever break the sea surface.	Section 19.6 Assessment of Impacts

Name of organisation	Key concerns	Response	ES section within which the specific issue is addressed
SNH	Details of the types of receptors, and an assessment of their sensitivity, should be included.	Included in assessments and details provided in field sheets.	Section 19.4 Baseline Description and Section 19.6 Assessment of Impacts
SNH	Cumulative Impacts - A cumulative SLSVIA is likely to be required in relation to future operations, but also in respect of other PFOW lease sites such as Ness of Duncansby. There may be other development types that may also need to be considered. Any cumulative SLSVIA should be carried out with reference to the current SNH guidance on cumulative effects (2005), though please be aware that this guidance is currently being updated. Whether it follows the draft guidance or not, the reasoning behind judgments should be made clear. This is because there is more than one type of cumulative impact and their assessment quickly becomes complicated.	Guidance noted and referenced. Cumulative assessment included.	Section 19.3 Legislative Framework and Regulatory Context and Section 19.8 Cumulative Assessment
The Highland Council	The developer is aware that The Highland Council has been engaged with partners and stakeholders (including the developer) in North Highland Onshore Visioning work, mainly focussed on the onshore development that will be necessary in North Highland to enable and support wave, tidal and offshore wind power. The Prince's Foundation for the Built Environment (PFBE) facilitated workshops held at the Castle of Mey in August 2010 and February 2011 and prepared a short Report which gives a record of the issues and key locations discussed at the workshops and gives recommendations. Following on from these recommendations, The Highland Council has published a 10-point Action Plan which it is developing with key partners, to help plan for the growth of the marine renewable energy industry in North Highland. More information on progress with undertaking the actions will be made available on the following webpage: http://www.highland.gov.uk/yourenvironment/planning/energyplanning/renewbleenergy/ Further planning guidance and information is to be produced and, depending upon timing, may be available for the developer to refer to in preparing their proposals and undertaking related assessments. The developer is encouraged therefore to remain in contact with the Council regarding these matters.	Noted and referenced / informs LSVIA and assessments. Discussed with stakeholders during LSVIA development. Pre-Application pack issued by THC 10/10/11, referenced and requirements incorporated. Ongoing consultation with THC on onshore design aspects of the Project.	Section 19.3 Legislative Framework and Regulatory Context
The Highland Council	With respect to the Landscape and Seascape section of the developer's Scoping Document, it is noted that there is no reference made to the Special Landscape Areas (SLAs) that have been identified by The Highland Council. The Scoping Document does not clearly indicate the extent of the study area for the purposes of the EIA; however, it is assumed that it extends to include the Dunnet Head SLA and the Duncansby Head SLA and these should be referenced and taken into account in the assessment. I attach a map (Annex 2) showing the location of these two SLAs. In undertaking assessment, reference should be made to the citations contained within the Assessment of Highland Special Landscape Areas which is available via the following webpage: http://www.highland.gov.uk/yourenvironment/planning/developmentplans/developmentplanpolicyguidance/Special+Landscape+AreaCitations.htm	SLA's referenced and incorporated in landscape, seascape and visual assessment where applicable.	Section 19.5 Baseline Description

Table 19.3: Scoping comments relevant to the LSVIA

19.4.3 Desk based study

19.21 In order to determine the potential impact associated with the Project it is important to understand both the physical and experiential characteristics of the landscape and seascape which include:

- Landform and land cover characteristics;
- Coastline shape and dynamics;
- Seascape and sea conditions;
- Identification of human influences, trends and pressures on the land and sea; and
- Location of key visual receptors including houses and settlements, roads, walking trails, designated areas, viewpoints and important views.

19.22 A number of sources were reviewed to understand the landscape character and the value placed on the landscape of the site and its landscape/seascape setting. The desk review also identified the sensitivities of the landscape character types to development. The sources of information used for the desk review included:

- OS Maps (1:50000 and 1:25000);
- Landscape character assessment Scottish Natural Heritage; Caithness and Sutherland Landscape Character assessment no.103; 1998;
- Current development plans including the Highland Structure Plan (2001)[3] and Caithness Local Plan (2002)[1]; and
- The Highland – wide Local Development Plan (HWLDP), The Highland Council (2012)[4].

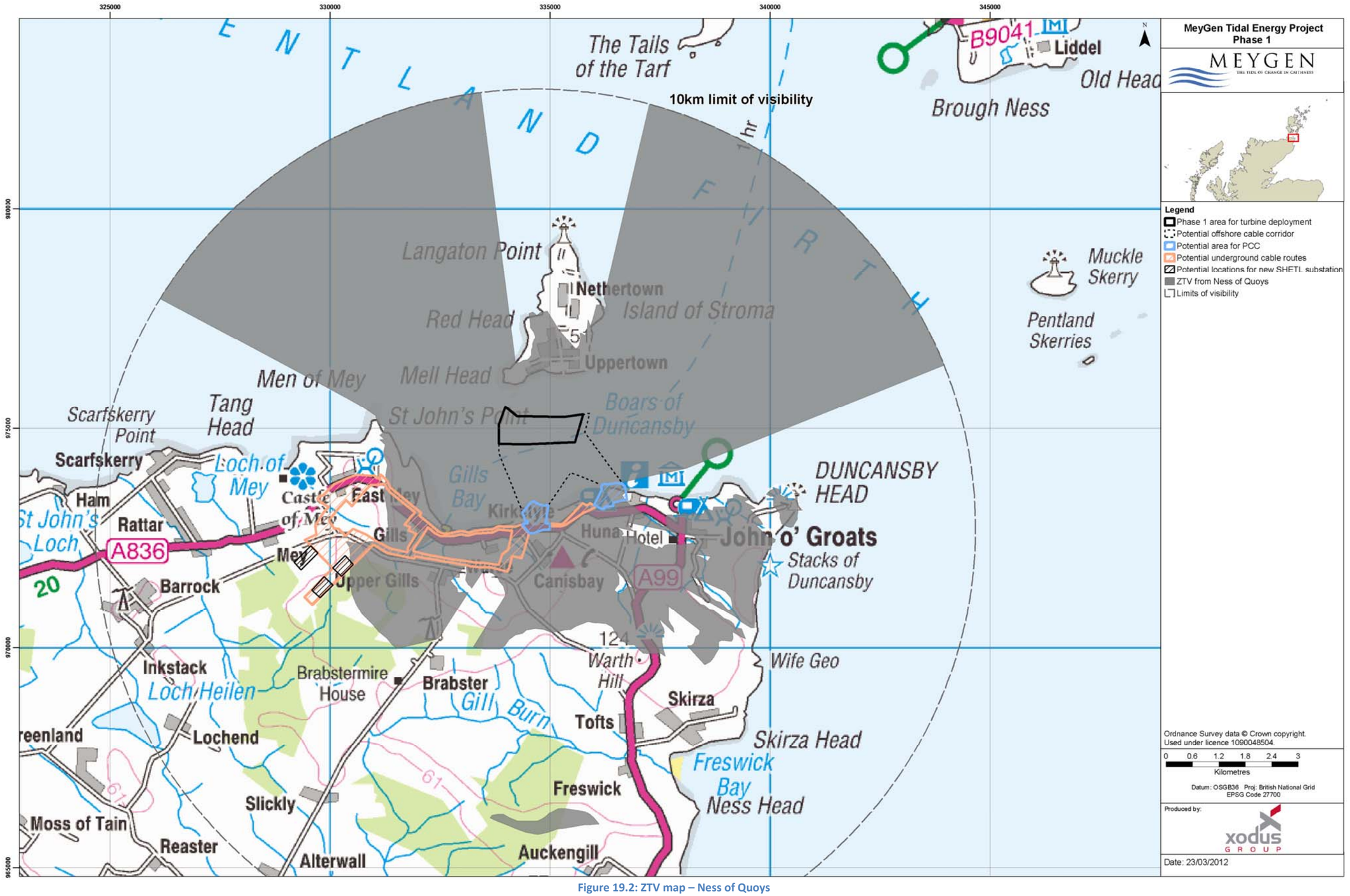


Figure 19.2: ZTV map – Ness of Quoys

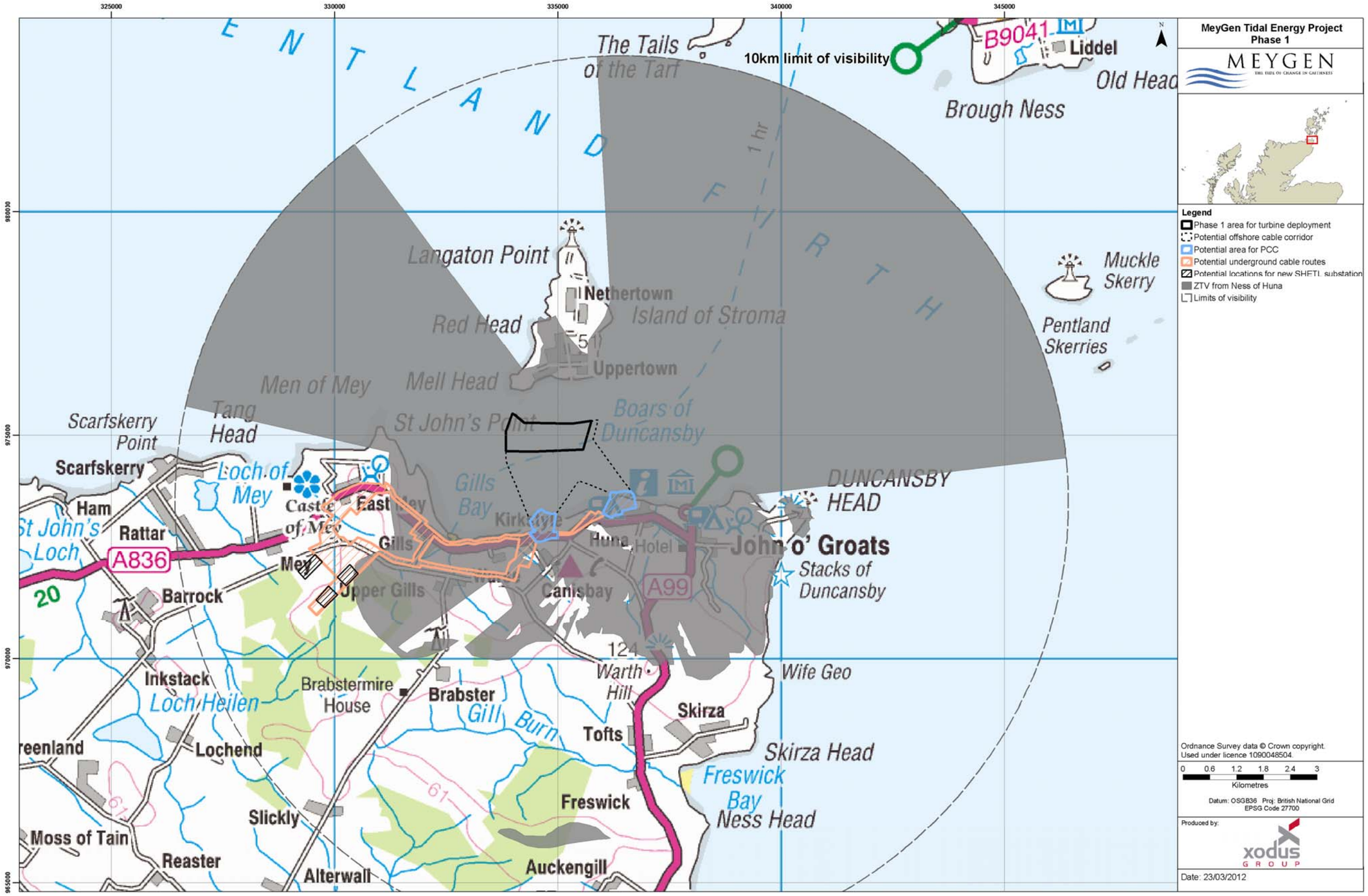


Figure 19.3: ZTV map – Ness of Huna

Zone of Theoretical Visibility development

19.23 The identification of potential landscape, seascape and visual impacts is based on Zone of Theoretical Visibility (ZTV) maps developed on a bare ground O.S. 1:50,000 contour and point height information at 10m intervals (Figure 19.2 and Figure 19.3).

19.24 The ZTV maps have been prepared using the digital format Ordnance Survey Open Data Landform Panorama map tiles to determine the theoretical visibility of the new development proposals. From these maps locations were selected for photographic viewpoints and photomontage preparation. These locations have been agreed with the stakeholders; The Highland Council, Scottish Natural Heritage and Historic Scotland.

19.4.4 Field survey

19.25 Field survey work included separate visits in differing weather conditions during June, July, August 2011 and January 2012. The field surveys assessed the visual influence of the development, principal viewpoints and sensitive receptors identified by the desk based study, refined the baseline landscape character areas, determined baseline seascape character areas and was used to assess impacts on landscape and seascape character.

19.26 Fieldwork to define seascape character areas, refine landscape character areas, assess landscape and seascape impacts and validate viewpoint impacts was carried out by a Chartered Landscape Architect (CMLI). Other survey work was undertaken by two suitably qualified persons (M.Arch / C.Arch). For the purposes of cross referencing of observations and notation, standard format field sheets were used for recording of this work and are included in the Technical Appendix which is available on the accompanying supporting studies CD (HRI, 2011).

19.27 Field survey work was used to further understand the nature of the landscape and seascape around the site and to identify the principal components that make up its character. The character types identified from the published landscape and seascape character assessment, within the range of the ZTV, were reviewed, including specific features contributing to landscape and seascape character. Information was recorded through the use of field notes, map annotations and photographic records as appropriate.

19.28 A walkover survey of the Project sites was undertaken to identify those features which contribute to the character of the sites or those which are important to its wider setting.

19.29 A number of viewpoints within the ZTV were selected for assessment as detailed below.

Viewpoint definition

19.30 Following discussion and site inspections with SNH and THC, the viewpoints have been chosen according to the following criteria:

- Being publicly accessible, except in exceptional circumstances (including private roads and properties with a prominent view of the Project site);
- Having a reasonably high potential number of viewers or being of particular significance to the viewers affected;
- Providing a representative range of viewing distances (i.e. short, medium and long distance views);
- Providing a representative range of viewing experiences (i.e. sequential views for example from the trunk road and local unclassified (U/C) public highways, and static views for example from designated viewpoints or car parks;
- Ensuring that views from areas recognised for their landscape quality, in particular nationally designated areas, are considered;
- Ensuring that views from or including buildings of (listed) historic importance are considered; and
- Ensuring that the assessment includes areas or viewpoints with specific features to enable assessment of the possible effects of the proposal in the context of such features.

19.31 Figure 19.4 shows the viewpoint schedule with the agreed eleven viewpoints emboldened. It should be noted that some viewpoints had multiple photomontages produced in order to capture views of both the Ness of Quoys and Ness of Huna. Figure 19.5 and Figure 19.6 show the viewpoint locations from Ness of Quoys and Ness of Huna respectively.

19.4.5 Photomontages

19.32 Photomontages have been generated for the views from the key selected viewpoints noted in Figure 19.4, Figure 19.5 and Figure 19.6.

19.33 Photographs of each view taken from each viewpoint looking towards the sites, indicating views as existing and photomontaged to indicate the Project can be found in the LSVIA Technical Appendix on the accompanying CD. Montages are provided for each of the two potential sites. In addition, the following information is given for each viewpoint montage;

- OS reference; this is the alpha numerical grid reference for the location of each viewpoint;
- Distance from the sites; from the viewpoint to the nearest site boundary;
- Included angle; the horizontal angle of view that is included in the photograph; and
- A thumbnail map showing the sites locations, the location of the viewpoint and the included angle.

19.4.6 Viewpoints

19.34 The agreed viewpoints have been assessed to the classifications detailed above in terms of visual impacts.

19.35 Photographic work conformed to Landscape Institute advice note 01/11, THC Visualisation Standards 2007 and SNH Handbook on Environmental Impact Assessment 2011; Appendix 1; LSVIA assessment and SNH referred guidance publication Visual Representation of Windfarms – Good Practice Guide dated 29th March 2006. It is to be noted that the scale of this development is significantly smaller than a windfarm both in terms of height and spread (proposed buildings of a light industrial scale) and as such the visualisations have been moderated such that the banding system in the guidance is inappropriate. This approach has been discussed and agreed with The Highland Council and SNH. The photographic survey was prepared using a Nikon D90 digital SLR with 23.6 x 15.8mm sensor utilising 75mm lens tripod mounted, providing landscape format images from agreed viewpoints (the lens setting is equivalent to a 50mm lens on a 35mm format camera). Composite panoramic images have been generated where considered necessary and appropriate following initial assessment, as a basis for photomontage images.

19.4.7 Significance criteria

19.36 ***The significance criteria approach used for this impact assessment varies slightly from the core methodology presented in Section 8. Specific details are provided in the following sections.***

19.37 The significance criteria defined in this section conform to SNH guidance (Handbook on Environmental Impact Assessment 2011) and is based on the methodology described in Section 8.

19.38 The significance criteria applied to the assessment and defined in this section conform to SNH guidance and are based on a series of scales which were produced using guidelines from the Landscape Institute (2002). The assessed sensitivity of the receptor and magnitude of landscape seascape and visual impacts are as defined below.

MEYGEN - PENTLAND FIRTH INNER SOUND TIDAL STREAM | PHOTO & LANDSCAPE ASSESSMENT DATA POINTS

					SITE 1 NESS OF QUOYS			**SITE 2** NESS OF HUNA			**VP REQUESTED BY:**			
LOCATION	EASTING	NORTHING	DESCRIPTION	VIEWS TO WHICH SITE?	VISIBLE	PARTLY VISIBLE	NOT VISIBLE	VISIBLE	PARTLY VISIBLE	NOT VISIBLE	PLANNING	SNH	VIEWPOINTS AGREED FOR PHOTOMONTAGES	NOTES
1	337240	970290	A99 at Warth Hill viewpoint											Sites not visible - no reason for VP
2	337140	970550	A99 at pull off											Limited value of VP
3	337000	971330	Layby on u/c road to Stemster											Limited value of VP
4	336810	971690	Slight bend on u/c road to Stemster											Limited value of VP
5	336610	971960	Jnct. u/c road Huna & Canisbay											Typical VP south of Huna, elevated.
6.1	**336296**	**972165**	**u/c road to A836 and Canisbay**	NESS OF QUOYS										**Easterly views of sites**
6.2	**336296**	**972165**	**u/c road to A836 and Canisbay**	NESS OF HUNA										**Easterly views of sites**
7A	337200	973340	John O'Groats mill											Mill in dip - neither site visible
7B	336940	973220	Jnct A836 & u/c road to Stemster											Nearest point to mill that views sites
8	336800	973610	Coastal walk west of Huna House											limited visibility; covered by VP 7
9.1	**336310**	**973220**	**Rear of village hall at Huna**	NESS OF HUNA										**Typical transient receptor close to Huna**
9.2	**336310**	**973220**	**Rear of village hall at Huna**	NESS OF QUOYS										**Typical transient receptor close to Huna**
10	335280	972810	Jnct. A836 & u/c road to Canisbay											Transient receptor
11	**334360**	**972820**	**Canisbay Church & burial ground**	NESS OF QUOYS										**Significant receptor - curtilage of historic building**
12	332700	972920	Gills bay ferry terminal											Sites not visible
13	331220	973770	A836 at Mey hill											Most westerly VP transient receptors
14	**331890**	**973110**	**A836 at lay-by**	NESS OF QUOYS										**Transient receptor - typical of A836 Western approach**
15.1	**334190**	**971640**	**War memorial**	NESS OF HUNA										**Significant receptor**
15.2	**334190**	**971640**	**War memorial**	NESS OF QUOYS										**Significant receptor**
16.1	**335140**	**972480**	**Canisbay north side**	NESS OF HUNA										**Significant receptor - main settlement and historic sites (Agreed as required VP in discussion with landowner & MeyGen staff).**
16.2	**335140**	**972480**	**Canisbay north side**	NESS OF QUOYS										**Significant receptor - main settlement and historic sites (Agreed as required VP in discussion with landowner & MeyGen staff).**
17	**337960**	**973480**	**John O'Groats pier**	NESS OF HUNA										**Significant receptor - but sites not highly visible. Significant offshore works VP**
18	333200	975700	Ferry - West of Stroma											Covered by VP 20
19	336400	976200	Ferry - East of Stroma											Covered by VP 20
20.1	**333200**	**974250**	**Ferry - South West of Stroma**	NESS OF QUOYS										**Representative VP from sea / scheduled sites on Stroma - ferry approach**
20.2	**333200**	**974250**	**Ferry - South West of Stroma**	NESS OF HUNA										**Representative VP from sea / scheduled sites on Stroma - ferry approach**
21	333050	971870	Upper Gills u/c road											Part of Settlement
22	332200	972050	West of Upper Gills on u/c road											Sites not visible
23	**331100**	**975150**	**St. John's Point - Fort**	NESS OF QUOYS / HUNA										**Historic Fort - open views over site(s) from West**
24	335300	975250	Ferry - South of Stroma											Significant for Stroma
25	**340500**	**973250**	**Duncansby Head**	NESS OF QUOYS / HUNA										**Significant receptor - tourist destination and VP site(s) in wide landscape / seascape context**
26	337110	969840	Cairn at Warth Hill											Covered by VP 23
27	**335641**	**973198**	**A836 West of Huna**	NESS OF QUOYS										**Transient receptor**
28	333496	971825	Upper Gills u/c road											Sites not visible
29	334714	972426	Manse at Canisbay											Manse in dip - only Quoys site slightly visible - Discounted due to limited views
30	333542	972356	Mains of Warse											Both sites visible; but limited value of VP

Figure 19.4: Viewpoint schedule

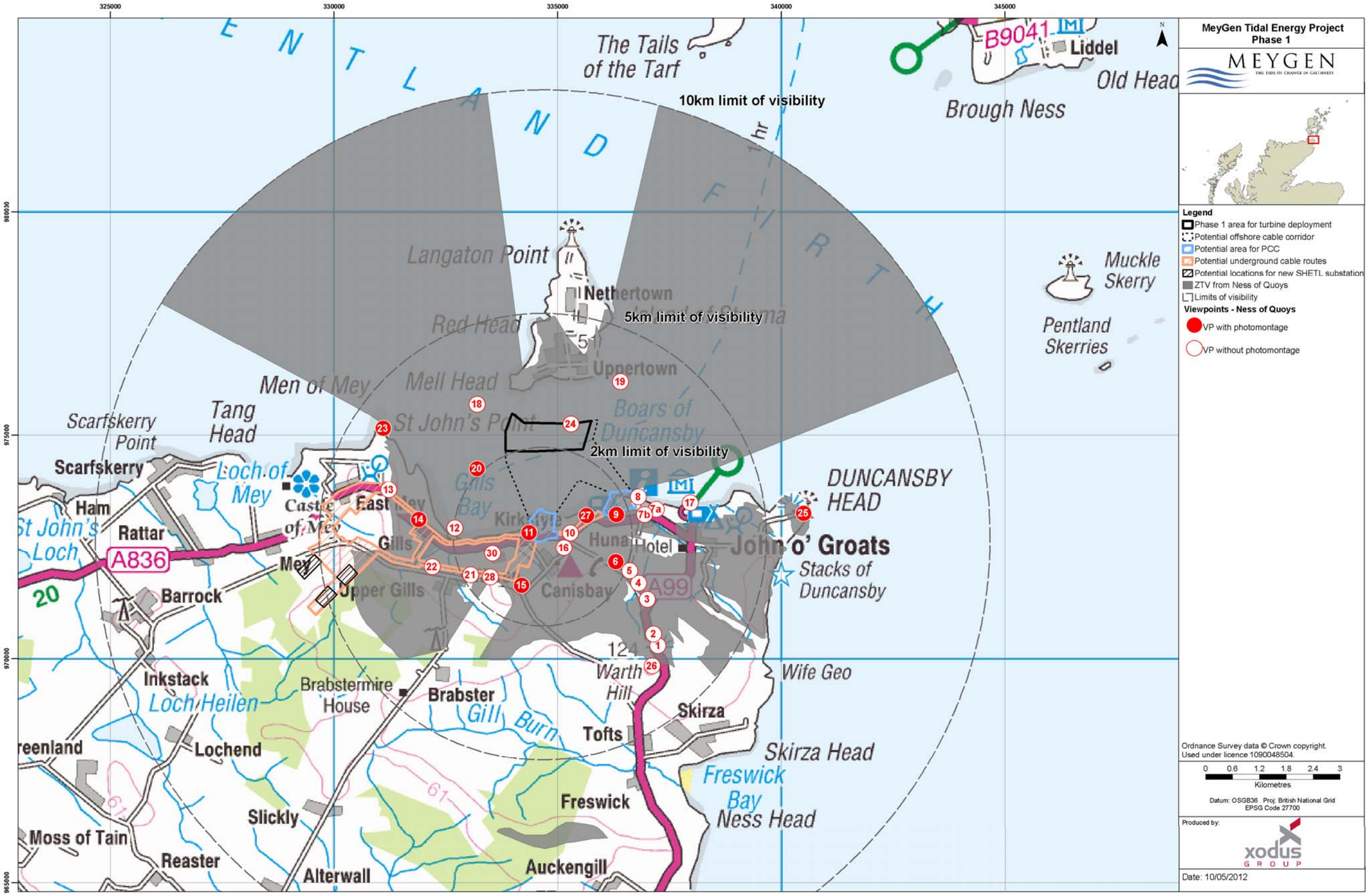


Figure 19.5: ZTV map – Ness of Quoys

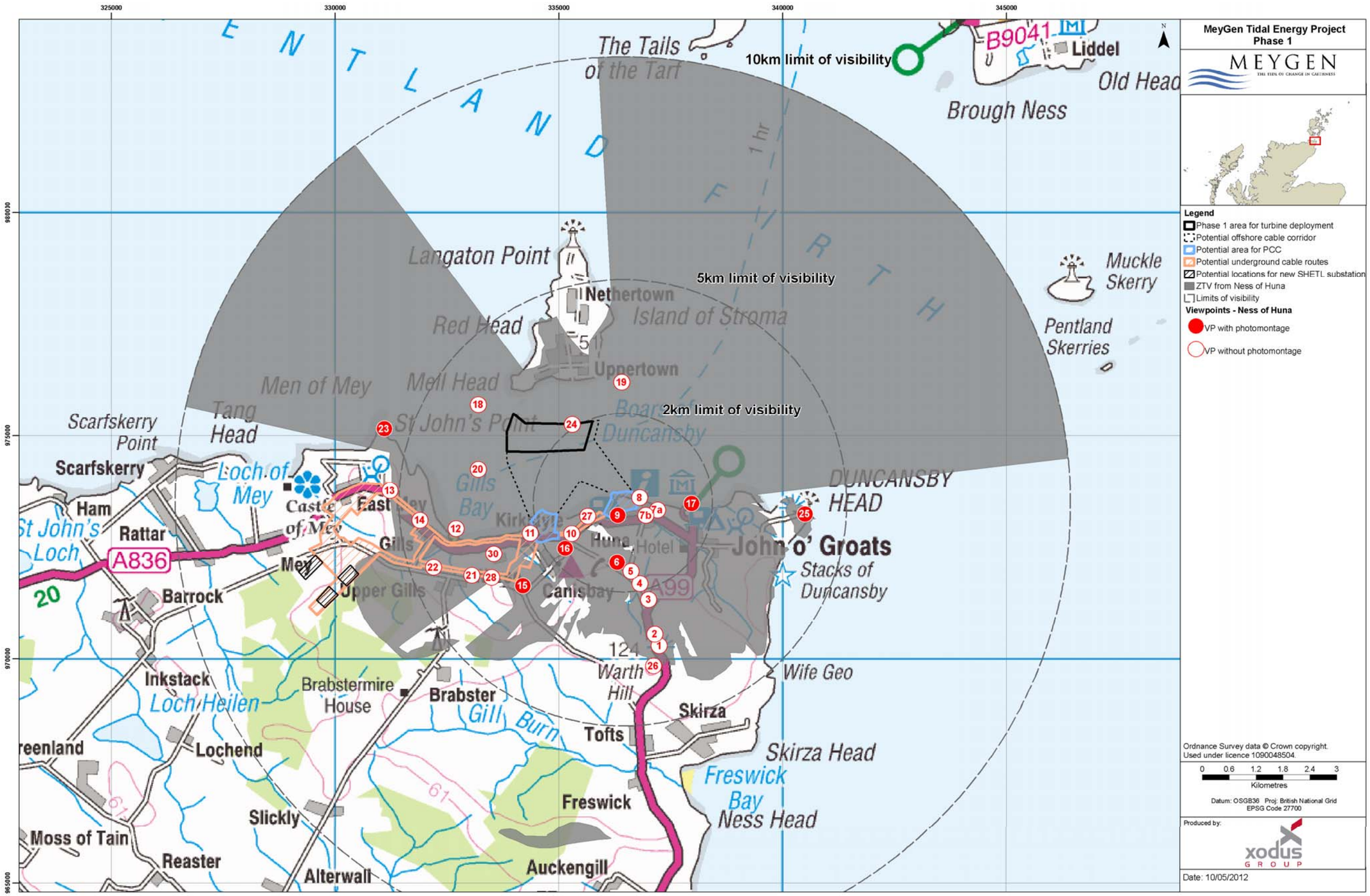


Figure 19.6: ZTV map – Ness of Huna

19.39 The sensitivity of the receptor and the magnitude of impact are combined to define the environmental consequence of the impact. This has been described with reference to a matrix in Section 8 (Table 8.1). It is important to note that with regard to Landscape, Seascape, and Visual effects this matrix has been used **as a guide only**. The matrix is not used as a prescriptive tool and the analysis of specific effects must make allowance for the exercise of professional judgement. Therefore, in some instances, a particular parameter may be considered as having a determining effect on the analysis at the expense of the matrix. It should also be noted that likelihood of impact is not considered a relevant parameter for landscape, seascape and visual effects and has not been included in the assessment.

19.40 The significance of impacts in relation to the EIA Regulations is defined in Section 8, Table 8.2.

Landscape sensitivity to change

19.41 The relative sensitivity of the landscape character within each character area is specific to the proposed change and depends upon a range of criteria. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.4 below.

Sensitivity of receptor	Definition/Criteria
Very High	▪ Very high value placed on the landscape, e.g. designated National Scenic Area, National Park, World Heritage Site. ▪ Landscapes of very high quality and condition: with consistent, intact, well-defined, and distinctive attributes, well-managed, in exceptional state of repair. ▪ Landscapes with very high levels of wildness/perceived naturalness as reflected in occurrence within Search Areas for Wild Land (SAWL).
High	▪ High value placed on the landscape e.g. Highland Special Landscape Area, Historic Gardens and Designed Landscapes. ▪ Landscapes of high quality and condition. ▪ Landscapes with high levels of wildness/perceived naturalness.
Medium	▪ Landscapes of moderate quality and condition. ▪ Landscapes may be locally valued but with no explicit designation or recognition of value. ▪ Landscapes dominated by agricultural or other man-modified land uses, although with some perceived naturalness.
Low	▪ Landscape intrinsically able to accommodate proposed change without key characteristics being diminished. ▪ Settled landscapes, with complex land use patterns where built elements and structures are already a strong part of the landscape character.
Negligible	▪ Heavily developed, industrial landscapes. ▪ Landscapes of low or poor quality and condition.

Table 19.4: Definitions of landscape sensitivity

Magnitude of landscape change

19.42 Establishment of the baseline and sensitivities to change enables the magnitude of change as a result of the proposed Project to be determined. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.5 below:

Magnitude of change	Definition
Severe	▪ Permanent removal or loss of the key characteristics of the landscape. ▪ Fundamental change to key characteristics of the landscape. ▪ All or very high proportion of landscape elements or very large spatial scale of landscape unit affected. ▪ Loss that cannot be replaced or change that cannot be mitigated.
Major	▪ Permanent loss of or substantial change to key characteristics of landscape. ▪ High proportion of landscape elements or large spatial scale of landscape unit affected. ▪ Indirect impacts perceived at very close range. ▪ Limited scope for replacement or mitigation.
Moderate	▪ Partial removal of or material change to characteristics of the landscape. ▪ Moderate proportion of landscape elements or spatial scale landscape unit affected. ▪ Indirect impacts perceived at moderate separation distances. ▪ Loss or change that can be partially replaced or mitigated.
Minor	▪ Discernable but small scale changes to landscape element or unit. ▪ Small proportion of landscape elements or small spatial scale of landscape unit affected. ▪ Indirect impacts perceived at large separation distances. ▪ Larger scale losses that can be fully mitigated.
Negligible	▪ Changes which are not discernable or have no effect on the integrity of the element or unit.

Table 19.5: Definitions of magnitude of Landscape change

Sensitivity to change of seascape

19.43 The relative sensitivity of the seascape within the local coastal character areas is specific to the proposed change and depends upon a range of criteria which take account of the coastline, and both landward and seaward perspectives. The published Guidance on Landscape/Seascape Capacity for Aquaculture (SNH 2008) was referred to in developing and applying the criteria. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.6 below:

Sensitivity of receptor	Definition/Criteria
Very High	▪ Seascapes located within and which contribute to the value of landscapes designated at national and international level. ▪ Seascapes with very distinctive physical characteristics including shape, enclosure, fragmentation, and prominent historic, cultural, or geological features. ▪ Seascapes with intact and very pronounced qualities of wildness and isolation, with strong evidence of and exposure to natural forces. ▪ Seascapes with spectacular views, very complex visual composition, very high diversity of detail, and aesthetic qualities which are intact and uncompromised.
High	▪ Seascapes located within and which contribute to landscapes of high value, recognised at regional or local level. ▪ Seascapes with distinctive physical characteristics including shape, enclosure, fragmentation, and specific historic, cultural, geological features. ▪ Seascapes with qualities of wildness and inaccessibility. ▪ Seascapes with striking/expansive views, diverse visual composition and aesthetic qualities which are predominantly intact.
Medium	▪ Seascapes with relatively unremarkable physical characteristics including linear shape, large-scale, and little fragmentation, and few specific historic, cultural, geological features of interest. ▪ Seascapes with some qualities of wildness, compromised to a degree by existing development and accessibility. ▪ Seascapes with relatively simple visual composition. ▪ Seascapes where settings of key views include some developed features and shipping or other maritime activity.
Low	▪ Seascapes comprising well-settled and readily accessible coastlines and hinterlands. ▪ Seascapes with prominent and frequent shipping or other maritime activity.
Negligible	▪ Seascapes comprising urban coastlines and hinterlands dominated by development. ▪ Seascapes with seaward views dominated by shipping or other maritime activity.

Table 19.6: Definitions of seascape sensitivity

Magnitude of change to seascapes

19.44 Establishment of the baseline and sensitivities to change enables the magnitude of change as a result of the proposed Project to be determined. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.7 below:

Magnitude of change	Definition
Severe	▪ Permanent removal or loss of the key characteristics of the seascape. ▪ Fundamental change to key characteristics. ▪ All or very high proportion of seascape elements or very large spatial scale of seascape unit affected. ▪ Loss that cannot be replaced or change that cannot be mitigated.
Major	▪ Permanent loss of or substantial change to key characteristics of seascape. ▪ High proportion of seascape elements or large spatial scale of seascape unit affected. ▪ Indirect impacts perceived at very close range. ▪ Limited scope for replacement or mitigation.
Moderate	▪ Partial removal of or material change to characteristics of the seascape. ▪ Moderate proportion of seascape elements or spatial scale of seascape unit affected. ▪ Indirect impacts perceived at moderate separation distances. ▪ Loss or change that can be partially replaced or mitigated.
Minor	▪ Discernable but small scale changes to seascape element or unit. ▪ Small proportion of seascape elements or small spatial scale of seascape unit affected. ▪ Indirect impacts perceived at large separation distances. ▪ Larger scale losses that can be fully mitigated.
Negligible	▪ Changes which are not discernable or have no effect on the integrity of the element or unit.

Table 19.7: Definitions of magnitude of change to seascape

Visual sensitivity to change

19.45 The relative sensitivity of the visual receptors is specific to the proposed change and depends upon a range of criteria. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.8 below:

Sensitivity of receptor	Definition/Criteria
Very High	▪ Very high value placed on the View: celebrated viewpoint included in tourist guides, view located within a landscape designated at national or international level. ▪ Very sensitive viewer types/occupations: Residents with views of the development. Users of strategic outdoor recreational facilities (including national long distance footpaths, national cycle routes). ▪ Duration of view typically long, view studied/enjoyed for considerable duration. ▪ Very large numbers of viewers.
High	▪ High value placed on the View: recognised viewpoint marked on maps, views within landscapes designated at regional or local level, views from designated tourist routes, views of (or from) landscape or built features with important physical, cultural or historic attributes. ▪ Highly sensitive viewer types/occupations: Users of outdoor recreational facilities (including recreational footpaths, cycle routes or rights of way), whose attention may be focused on the landscape; special interest groups where landscape setting is important. ▪ Duration of view not curtailed by physical parameters. Viewers stationary or slow moving. ▪ Large numbers of viewers.
Medium	▪ Lower value or no explicit value placed on view: e.g. views from within settlements, commercial buildings. ▪ Less sensitive viewer types/occupations: people engaged in outdoor sports, people travelling through or past the landscape, people at places of work, whose attention may be focused on their activity rather than the wider landscape. ▪ Duration of view relatively short. Time to absorb or contemplate view curtailed by physical parameters. ▪ Relatively small numbers of viewers.
Low	▪ Low value placed on view: e.g. views from roads and transport routes. ▪ Less sensitive viewer types/occupations: people engaged in outdoor sports or recreation, people travelling through or past the landscape, people at places of work, whose attention may be focused on their activity rather than the wider landscape. ▪ Duration of view short. Glimpse or interrupted views. Viewers moving at speed. ▪ Small numbers of viewers.
Negligible	▪ Very small numbers of viewers. Location unlikely to be visited.

Table 19.8: Definitions of visual sensitivity

Magnitude of change to visual receptors

19.46 Establishment of the baseline and sensitivities to change enables the magnitude of change as a result of the proposed Project to be determined. A five point scale has been utilised in accordance with the overall EIA Methodology (Section 8). For the purposes of this assessment the following definitions have been applied as noted in Table 19.9 below:

Magnitude of change	Definition
Severe	▪ Proposed change will define view. ▪ All of development clearly visible. ▪ Development will be the dominant feature in the view. ▪ Impacts perceived at very close range.
Major	▪ High proportion of development visible, no significant screening effects. ▪ Large proportion of field of view occupied by development. ▪ Strong contrasts with key visual characteristics of the baseline view e.g. scale, horizontality, composition. ▪ Angle of view to development coincides with focus of receptor activity/viewpoint/road alignment, etc. ▪ Development breaks horizon/skyline with no backdrop. ▪ Impacts perceived at short separation distance.
Moderate	▪ Development partially screened by topography, vegetation, etc.. ▪ Development viewed against backdrop. ▪ Some conflicts with key visual characteristics of the baseline view e.g. scale, horizontality, composition. ▪ Angle of view to development does not coincide with focus of receptor activity/viewpoint/road alignment, etc. ▪ Impacts perceived at moderate separation distances.
Minor	▪ Development substantially screened by topography, vegetation, etc. ▪ Development compatible with key visual characteristics of the baseline view e.g. scale, horizontality, composition. ▪ Impacts perceived at large separation distances.
Negligible	▪ Changes which are not discernable.

Table 19.9: Definitions of magnitude of visual change

19.4.8 Data gaps and uncertainties

19.47 There are not considered to be any major data gaps and uncertainties associated with the seascape, landscape and visual impact assessment undertaken. As previously mentioned in the absence of specific guidance on such impact assessments for tidal developments, MeyGen has made reference to other relevant guidance.

19.5 Baseline Description

19.48 In this section the existing conditions of the landscape, seascape and visual resources of the study area are described to provide a basis against which changes can be assessed.

19.5.1 Landscape resource

Overview

19.49 The landform of the study area is typically gently rolling, and is generally less than 100m above sea level. There is correspondingly relatively little visual containment and views are both panoramic and extensive; often enhanced by the presence of the adjacent sea. The land cover is predominantly agricultural with an abundance of grassland or improved grassland, reflecting the high reliance on livestock for meat and dairy production. Land cover and landform gradually changes to the south towards a predominance of moorland and peatland. The uninhabited island of Stroma beyond the Inner Sound is similarly low lying with mixed moorland and coastal grassland areas.

Settlement pattern

19.50 Settlements are sparse and relatively scattered along the A836 coast road and define the agricultural zone which lies within approximately 2km of the sea, beyond which the land rises to heather and moorland; primary settlements are John o' Groats, including housing, visitor facilities and hotels / guesthouse establishments, and Canisbay, a similarly dispersed settlement extending to West Canisbay and upper Gills to the east and Stemster/Huna to the east. Additionally there are numerous single dwellings, farmsteads and agricultural buildings along the A836.

Communications and infrastructure

19.51 As with the settlement pattern, the transportation corridor is along the coast. The principal road is the A836 which joins the main A9(T) at John o' Groats and runs west to Castletown and Thurso where it joins the A882(T) to the south. A number of unclassified single track roads and tracks connect small settlements, and individual houses and crofts/farmsteads, to the main road.

19.52 The A9 trunk road and A836 are also significant through routes; serving tourist traffic to John o' Groats and along the north coast and feeding the John o' Groats – South Ronaldsay ferry (foot traffic only) running through the summer to Orkney; and the Gills Bay – St Margaret's Hope vehicle ferry.

19.53 Infrastructural services comprise mains service feeders routed from the A9 / A836 corridors. Existing power and telecom supplies are generally routed over ground.

Project sites: Ness of Quoys

19.54 The site is located on the north coast of Caithness, 3.8km east of John o' Groats. Its key physical landscape characteristics are:

- Open agricultural character with no buildings currently present on the site;
- Flat landform, falling imperceptibly northwards towards low cliffline from southern site boundary at A836;
- Uniform landcover of pasture grassland, subdivided by post and wire fencing; and
- Stone wall enclosing Canisbay Kirk burial ground abuts western site boundary.

19.55 Overall the above characteristics are considered to have a Low/Medium Sensitivity to the introduction of the development.

Project sites: Ness of Huna

19.56 The site is located on the north coast of Caithness, 2.3km east of John o' Groats. Its key physical landscape characteristics are:

- Open agricultural character with no buildings currently present on the site;
- Flat landform, falling gradually northwards towards cliffline from southern site boundary at A836. Cliffline is higher than at Ness of Quoys site;
- Uniform land cover of pasture grassland, subdivided by post and wire fencing, and significant areas of mature gorse scrub ;
- Farm building group near Huna House adjacent to western site boundary; and
- Properties on A836 adjacent to southern site boundary.

19.57 Overall the above characteristics are considered to have a Low/Medium Sensitivity to the introduction of the development.

Forces for change

19.58 Forces for change are those that are currently affecting the character of the landscape resource and which may, consequently, affect the perception of the Project in the future:

- Industry - Any future local industrial development, outwith this proposal, is likely to be limited to the Gills Bay harbour area, where traffic numbers have grown steadily in recent years and where small scale facility development is underway. Future renewables development predicated by the Pentland Firth and Orkney Waters marine renewables Agreement for Lease (AfL) areas may impact on the wider landscape and seascape;
- Tourism – John o' Groats in a nationally known tourist / visitor destination and significant redevelopment of the settlement and its facilities is planned. While the majority of traffic and visitor movements to and from John o' Groats are via the A9 trunk route, increasing movements along the north coast via the A836 may be anticipated, together with a degree of 'spin off' development in visitor accommodation and related facilities between John o' Groats and Mey, incorporating future growth in the Orkney terminal at Gill's Bay;
- Agriculture - Agriculture within the region will continue to be influenced by the provision of subsidies and grants through Common Agricultural Policy (CAP) and other funding mechanisms. It is not clear how current or future changes in subsidies or agricultural policy will affect the local landscape but historically such changes as far as they affect the landscape, are likely to be minor; and,
- Housing and settlement –Numerous initiatives and development programmes – including tourism and renewables development – are in place to sustain the local economy and population. It is not envisaged that there will be any significant housing development within the study area with any settlement development comprising single house renewals or additions.

19.5.2 Landscape character

Landscape Character Types

19.59 Landscape Character Types (LCTs) occurring within the Study Area are shown in Figure 19.7. It is stressed that these were identified following a process which included review of the Caithness and Sutherland landscape character assessment (SNH Review No 103), supplemented by field study focussing on the specific local characteristics present in the study area. It was noted during the process that identification of a number of the LCTs in the SNH Report is closely related to land use type, and that the balance of this may have changed over the period since its publication in 1998. The resulting classification therefore represents an adaptation of the SNH types for the specific purposes of this project assessment.

19.60 The descriptions of key characteristics in Table 19.10 below largely reflect text within the Caithness and Sutherland landscape character assessment, selected and adapted to apply to the specific units of each type present within the study area, as distinct from the overall generic type, which may occur more widely throughout Caithness and Sutherland. In some cases it was not considered possible to positively identify discrete areas of certain subtypes included in the SNH classification. In these instances local characteristics of the subtypes have been included in the key characteristics of the larger aggregated area.

Landscape character type	Key characteristics	Sensitivity to proposed development
Sweeping Moorland	▪ Vast scale. ▪ Wide open space with high exposure and extensive visibility. ▪ Simple visual composition. ▪ Fairly flat or gently sloping or undulating landform. ▪ Pockets of improved grazing. ▪ Occasional streams and lochs. ▪ Settlements generally restricted to outer edges of type. ▪ Service elements tend to be highly visible. ▪ Coniferous plantations locally dominant. ▪ Characteristics of Flat Peatland subtype locally dominant.	LOW Reasons: ▪ Existing patterns include prominent service elements and frequent large geometric plantations. ▪ Views outwards commonly include settlements and other built development on margins. ▪ Large extent of this type in a regional context - no landscape designations present.
High Cliffs and Sheltered Bays	▪ Open exposure to elements. ▪ Long stretches of high cliffs. ▪ Expansive views along the coast and out to sea. ▪ Dominating presence of sea/land edge. ▪ Experientially and physically very dramatic and dynamic. ▪ Lighthouse forms focal point and landmark. ▪ Landcover dominated by grassland, often grazed by sheep.	HIGH Reasons: ▪ Dominance of natural characteristics and dramatic experiential qualities. ▪ Includes Special Landscape Area designated for quality of landscape features and views.
Mixed Agriculture and Settlement	▪ Vast and open. ▪ Horizontal emphasis. ▪ Extremely exposed. ▪ Simple, gently sloping landform. ▪ Complex visual composition of varying landcover and land uses, lines formed by field boundaries, roads, powerlines. ▪ Focal points include houses, castles, masts, and woodland blocks. ▪ Historic features, local evidence of decline and abandonment, including island of Stroma. ▪ Confusing arrangement of dwellings and roads, often no distinct edge or separation between communities and settlements. ▪ Small estates with large house, boundary wall, woodland, and estate houses (eg Mey Estate).	LOW Reasons: ▪ Large scale and horizontal emphasis compatible with overall development form. ▪ Complex mix of existing characteristics not readily affected by introduction of new elements. ▪ Supported by LCA judgement that “Many areas able to accommodate new changes without their intrinsic quality being marred”.
Small Farms and Crofts	▪ Human settlement and land uses dominate. ▪ Repetitive pattern of enclosure and land uses discernable, often relative to coastal edge. ▪ Semi-enclosed, less open and of smaller scale relative to Mixed Agriculture and Settlement type. ▪ Frequent new housing, often of generic “kit” type not related to the local landscape or architectural style. ▪ Holiday homes common, contrasting with working crofts and farms. ▪ Abandoned/ruined buildings, field boundaries.	LOW Reasons: ▪ Existing dominance of human settlement features ▪ No landscape designations present. ▪ Outward views not a key attribute of existing character.

Table 19.10: Baseline landscape character

The Highland Council Special Landscape Areas

19.61 In June 2011 The Highland Council published the Assessment of Highland Special Landscape Areas (AHSLA). This document reviewed the existing local landscape designations (Regional Scenic Areas and Areas of Great Landscape Value) which had been identified within the Highland Structure Plan (2001). The assessment provides a citation for each of the Special Landscape Areas (SLAs) describing key landscape and visual characteristics, special qualities, key sensitivities to landscape change, and possible enhancement measures.

19.62 The Duncansby Head Special Landscape Area is the only SLA occurring within the study area. Its location and extent are shown on Figure 19.7. Its key characteristics and special qualities are set out in the Citation Report and coincide to a large extent with the descriptions of the High Cliffs and Sheltered Bays LCA (Table 19.10) and the Duncansby Head- Skirza Head Local Coastal Character Area (Paragraphs 19.78 and 19.79).

19.63 Its sensitivity to introduction of the proposed Project is considered to be high, due primarily to its landscape designation which highlights inter alia the quality of distant views and dramatic experiential qualities.

Historic Gardens and Designed Landscapes (HGDL)

19.64 These are gardens and landscapes listed in the Inventory of Gardens and Designed Landscapes in Scotland, first compiled and published in 1987. Sites listed in the Inventory are not statutorily designated but are considered to be a national consultation issue under planning legislation.

19.65 Castle of Mey is the only HGDL occurring within the study area. Its location and extent are shown on Figure 19.7. Its key characteristics as set out in the Inventory include:

- Outstanding scenic value in the surrounding landscape; and
- Provides the setting for the Castle which is a Category A listed building.

19.66 Its sensitivity to introduction of the proposed Project is considered to be HIGH, due primarily to its inclusion in the Inventory.

Historic buildings / structures

19.67 Full details of buildings/structures of historic interest are provided in the Section 20. The key features of note are The Grade A listed Canisbay Kirk and graveyard and the Grade B listed East Canisbay Manse.

19.5.3 Seascape resource: Seascape character

19.68 Seascape Character Areas (SCAs) were identified by applying the methodology set out in Guidance for Landscape/Seascape Capacity for Aquaculture (SNH, 2008). Under this methodology, the units are termed Local Coastal Character Areas, representing a more detailed breakdown of the "Seascape Character Types" identified in Scott *et al* (2005). The Local Coastal Character Areas are shown in Figure 19.7 and are described briefly below.

LCCA 1: Ham to St. John's Point

19.69 Location and Extent:

- Coastline from study area boundary east of Ham Berry to St John's Point; and
- Represents a local subdivision of the broader SNH Seascape classification for this area (Seascape Character Type 2: "Mainland Rocky Coastline with Open Sea Views").

19.70 Key Landscape and Visual Elements:

- Linear, generally east-west trending coastline;
- Majority of coastal edge formed by low cliffs or rough vegetated slopes typically around 10m high, with rocky wave-cut platform below;
- Sheltered cove and pier at Wester Haven/Harrow;
- Geos common in section west of Scarfsferry Point;
- Frequent evidence of historic features – including chambered cairns, chapel, and broch;
- Expansive seaward views: including northwards to Orkney, west to Dunnet Head, and east to St John's Point; and
- Diverse hinterland including crofts, holiday homes, mixed agriculture and settlement, moss, lochs, and Castle of Mey estate.

19.71 Overall sensitivity to proposed Project = Medium/Low (Table 19.11).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium	▪ Dominant open expanse of sea to north. ▪ Views of offshore islands. ▪ Views of ferries and other shipping.
Character and Experience of Coast/Key Views	Medium	▪ Diverse, open sea views to east and west. ▪ Hinterland views over diverse land use types.
Setting of Landmarks and Features	Medium/Low	▪ Key features have settings characterised mainly by agricultural land uses and/or built development.
Experience of Wildness	Low	▪ Minor road with frequent crofts and housing runs close to coastal edge.
Aesthetic Qualities	Medium	▪ Includes good seaward views west towards Dunnet Head and north towards Orkney.

Table 19.11: Potential sensitivity to proposed Project

LCCA 2: St. John's Point to Gills Bay

19.72 Location and Extent:

- Coastline from St John's Point to Gills Bay pier and ferry terminal; and
- Represents a variation of the broader SNH Seascape classification for this area (SNH Seascape Character Type 1 "Remote High Cliffs"). The cliffs in this seascape unit are generally lower and less remote than the typical areas as described in the SNH classification.

19.73 Key Landscape and Visual Elements:

- Generally north-west to south-east trending coastline;
- Majority of coastal edge formed by low cliffs typically around 20m high, with rocky wave-cut platform below;
- Northern section near St John's Point more rugged with deeply indented geos and higher cliffs up to 30m high;
- Small sheltered cove at Scotland's Haven;
- Evidence of historic features – remains of fort on St John's Point headland;
- Expansive seaward views: including northwards to Stroma and Orkney, west to Dunnet Head, east to Duncansby Head;
- Hinterland predominantly of rough moorland grasses, gorse and heather; and
- Main landmark and viewpoint at St John's Point headland, also good views east from A836 east of Mey Hill.

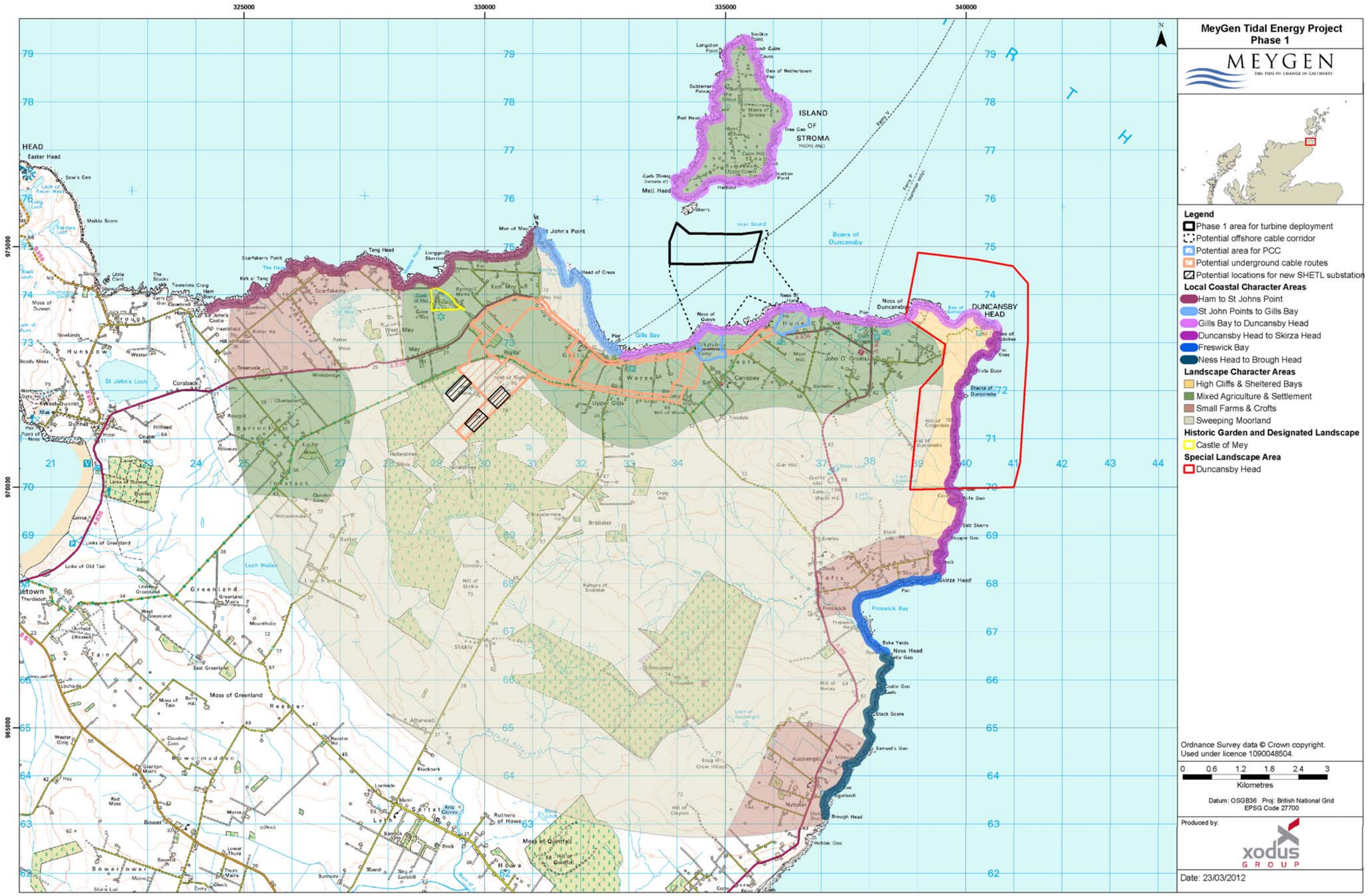


Figure 19.7: Landscape character map (Based upon SNH Caithness and Sutherland landscape character assessment no.103; 1998)

19.74 Overall sensitivity to proposed Project = Medium/High (Table 19.12).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium	▪ Dominant open expanse of sea to north. ▪ Views of offshore islands. ▪ Views of ferries and other shipping. ▪ Tidal turbulence in Inner Sound.
Character and Experience of Coast/Key Views	Medium	▪ Diverse, open sea views to east and west. ▪ Hinterland views over perceived natural vegetation types to settled agriculture, roads, etc.
Setting of Landmarks and Features	Medium	▪ Natural landscape settings for key landmark at St John's Point and adjacent historic fort.
Experience of Wildness	Medium/High	▪ Footpath only access to St John's Point, other sections rough footpaths at best. ▪ Relatively high perceived naturalness of hinterland vegetation cover.
Aesthetic Qualities	Medium/High	▪ Include some striking seaward views across Inner Sound and Pentland Firth to Stroma, Orkney, and Pentland Skerries.

Table 19.12: Potential sensitivity to proposed Project

LCCA 3: Gills Bay to Duncansby Head

19.75 Location and Extent:

- Coastline from Gills Bay pier and ferry terminal to Duncansby Head, also including the coastline of the Island of Stroma; and
- Represents a local subdivision of the broader SNH Seascape classification for this area (Seascape Character Type 2 "Mainland Rocky Coastline with Open Sea Views") Note: Stroma not included in SNH Classification.

19.76 Key Landscape and Visual Elements:

- Linear, generally east-west trending coastline;
- Subsidiary headlands at Ness of Quoys, Ness of Huna, and Ness of Duncansby form shallow embayments;
- Majority of coastal edge formed by low cliffs typically around 10m high, with rocky wave-cut platform below. Occasional stretches of sandy beach east of John o' Groats;
- Stroma: Prominent uninhabited offshore island rising to highpoint of 53m AOD with rocky shoreline and low cliffs, and abundant abandoned dwellings;
- Piers at Gills Bay and John o' Groats, with ferry services to Orkney (seasonal only from John o' Groats);
- Expansive seaward views: including northwards to Stroma and Orkney, west to St John's Point and in clear conditions to Dunnet Head, east to Duncansby Head and Pentland Skerries;
- Tidal turbulence within Inner Sound clearly visible from shoreline;
- Hinterland predominantly of mixed agriculture; including larger settlements at John o' Groats, Canisbay, and Gills Bay;
- A836 coastal road John o' Groats to Thurso forms dominant linear feature immediately inland;
- Key landmarks include John o' Groats pier and settlement, Gills Bay pier and ferry terminal, the old Kirk at Canisbay, Huna House, and the old mill east of Huna; and
- Warth Hill to the south, and the lighthouses at Duncansby, Pentland Skerries, and on Stroma, form key reference points although outside the unit.

19.77 Key overviews of this unit include from Warth Hill on A99, and Mey Hill on the A836. Overall sensitivity to proposed Project = Medium/Low (Table 19.13).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium	▪ Dominant open expanse of sea to north. ▪ Views of offshore islands. ▪ Tidal turbulence in Inner Sound. ▪ Views of ferries and other shipping.
Character and Experience of Coast/Key Views	Medium/Low	▪ Diverse, open sea views but agricultural hinterland, settlement and roads also prominent.
Setting of Landmarks and Features	Medium/Low	▪ Settings for key landmarks include agriculture, roads and settlement.
Experience of Wildness	Low	▪ A well-settled and readily accessible stretch of coastline, but with visible evidence of strong natural tidal forces. ▪ Abandoned uninhabited island creates sense of remoteness.
Aesthetic Qualities	Medium/High	▪ Include some striking seaward views across Inner Sound and Pentland Firth to Stroma, Orkney, and Pentland Skerries.

Table 19.13: Potential sensitivity to proposed Project

LCCA 4: Duncansby Head to Skirza Head

19.78 Location and Extent:

- Coastline from Duncansby Head Lighthouse extending south to Skirza Head, where there is a sharp change in direction westwards at entrance to Freswick Bay;
- Represents a local subdivision of the broader SNH Seascape classificatiion for this area (Seascape Character Type 1 "Remote High Cliffs"); and
- Includes Duncansby Head Special Landscape Area designated by The Highland Council.

19.79 Key Landscape and Visual Elements:

- Relatively simple linear north-south coastline of high sandstone cliffs, (up to 70m) with smaller scale detail variation provided by erosional landforms including stacks, arches, geos and wave-cut platforms;
- Distant expansive views: eastwards to open sea, and at Duncansby Head also northwards to Orkney and Pentland Firth, and west along northern coastline;
- Strong "wild land" influences: high, exposed position and rugged terrain, away from Duncansby Head visitor facility the unit has a remote feel with no roads and few footpaths, and few modern artefacts or structures (Note: Minor Road to Skirza Head allows views to Freswick Bay but no views to this unit); and
- Key viewpoints are Duncansby Head trig point, and clifftop footpath leading southwards: these provide key views over cliffs and stacks with undeveloped open settings.

19.80 Overall sensitivity to proposed Project = High (Table 19.14).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium /High	▪ Dominant open expanse of sea to east. ▪ From Duncansby Head influence of ferry activity, lighthouses, jetties, etc on north coast is evident.
Character and Experience of Coast/Key Views	Medium /High	▪ Dominance of open, undeveloped character with strong perceived naturalness, moderated by development at Duncansby Head and views along north coast. ▪ Key views within SLA currently include very few developed features.
Setting of Landmarks and Features	High	▪ Existing undeveloped open settings for key landmarks.
Experience of Wildness	High	▪ Majority of unit sensitive to experience of new modern artefacts or structures.
Aesthetic Qualities	High	▪ Northern part of unit within SLA designated for special landscape qualities, these are also present within the remainder of the unit although less marked.

Table 19.14: Potential sensitivity to proposed Project

LCCA 5: Freswick Bay

19.81 Location and Extent:

- Coastline from Skirza Head south to Ness Head, encompassing the well-defined feature of Freswick Bay; and
- Represents a local subdivision of and variation from the broader SNH Seascape classification for this area (SNH Seascape Character Type 2 “Mainland Rocky Coastline with Open Sea Views”).

19.82 Key Landscape and Visual Elements:

- Well-defined crescent-shaped embayment interrupting generally north-south trending linear coastline;
- Rocky wave-cut platform forms majority of coastline with small sandy beach and dune system at innermost section of bay;
- Cliffs at Skirza Head and Ness Head contrast with internal section of unit;
- Distant expansive views: eastwards to open sea;
- Good views across bay from enclosing headlands, from elevated sections of A99, and from minor road to Skirza;
- Hinterland predominantly of mixed agriculture and settlement, with most settlement along minor road to Skirza on north side of bay; and
- Freswick House and Mains form important focal features.

19.83 Overall sensitivity to proposed Project = Medium/Low (Table 19.15).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium /Low	▪ Dominant open expanse of sea to east. ▪ Distant views of shipping.
Character and Experience of Coast/Key Views	Medium /Low	▪ Dominance of open views but agricultural hinterland, settlement and roads also prominent.
Setting of Landmarks and Features	Medium /Low	▪ Settings for key landmarks including beach, cliffs and castle feature development and agriculture.
Experience of Wildness	Low	▪ A well-settled and readily accessible stretch of coastline.
Aesthetic Qualities	Medium	▪ Diverse views including enclosed bay, open sea, and settled hinterland.

Table 19.15: Sensitivity to proposed Project

LCCA 6: Ness Head to Brough Head

19.84 Location and Extent:

- Coastline from Ness Head to study area boundary south of Brough Head; and
- Represents a local subdivision of the broader SNH Seascape classification for this area (SNH Seascape Character Type 2 “Mainland Rocky Coastline with Open Sea Views”).

19.85 Key Landscape and Visual Elements:

- Generally conforms closely to the generic SNH type;
- Linear, generally north-east/south-west trending coastline;
- Low cliffs and rocky wave-cut platform forms majority of coastal edge, with occasional coves, and geos;
- Distant expansive views: eastwards to open sea;
- Hinterland predominantly of small farm and crofting with frequent relatively new housing around Auckengill and Nybster, minor area of moorland on higher ground at Hill of Harley;
- Evidence of historical associations including ruined castle, dun, and broch; and
- Key Views include from A99 at Hill of Harley.

19.86 Overall sensitivity to proposed Project = Medium/Low (Table 19.16).

Attribute	Potential sensitivity	Reasons
Maritime Influences	Medium/Low	▪ Dominant open expanse of sea to east. ▪ Distant views of shipping.
Character and Experience of Coast/Key Views	Medium/Low	▪ Dominance of open views but crofting hinterland, settlement and roads also prominent.
Setting of Landmarks and Features	Medium	▪ Settings for key landmarks including low cliffs and historic elements also include crofting and settlement.
Experience of Wildness	Low	▪ A well-settled and readily accessible stretch of coastline.
Aesthetic Qualities	Medium	▪ Diverse views including rugged coastline with frequent geological variation.

Table 19.16: Sensitivity to proposed Project

19.5.4 Visual resource

19.87 The baseline condition of visual resources is included in the assessment of impacts on individual viewpoints in 19.6.5 below.

19.6 Assessment of Impacts

19.6.1 Introduction

19.88 This section assesses the residual impacts on landscape, seascape and visual receptors within the study area taking account of the mitigation measures which have been integrated into the design of the development.

19.89 The assessment focuses on the likely significant effects of the development, which are considered to relate exclusively to onshore impacts during the operations and maintenance phase of the Project. offshore impacts, and impacts during the construction and installation, and decommissioning phases, are addressed below as part of this introduction.

Design and mitigation

19.90 The Project design incorporates mitigation measures addressing the Operations and Maintenance phase of the project and these are summarised in Table 19.17 below. The design objectives take account of guidance on both landscape and seascape issues, including specific guidance relating to the "Mixed Agriculture and Settlement" Landscape Character Type in the Caithness and Sutherland Landscape Character Assessment (Stanton, 1998).

19.91 The PCUBs have been designed following consultation with The Highland Council (THC) Planning and Development and Historic Environments Team and Scottish Natural Heritage (SNH). MeyGen has completed a number of design iterations including a design workshop with THC and SNH.

19.92 The design evolution of the PCC started with the concept of a traditional barn structure commonly found in the region and a combination of standard modular building structures to provide the control room. The design workshop (6th September 2011), held on site between MeyGen, THC and SNH was used to discuss the design of all the onshore works.

19.93 The desire expressed by THC was that the buildings should be designed in the spirit of the North Highland Onshore Visioning work[5]. THC recommended that traditional barn structures would not be appropriate and the buildings needed to both celebrate the fact they are a part of the new marine power industry as well as be sympathetic to their surroundings. MeyGen was prepared to support the design approach as long as it could be realised at a small additional cost. It should be noted that it is not the intention of MeyGen to attract uninvited visitors to the PCC as there are to be no facilities for visitors. All visitor information is planned to be located at John o' Groats.

19.94 The design brief was revised to specify a set of functional modern industrial buildings that complied with all the project requirements but also satisfied the statutory historic environment interests (i.e. scheduled monuments and their setting, category A listed buildings and their setting and Inventory designed landscapes). In addition, work was carried out to assess the indications of past anthropogenic activity on the two sites identified to ensure building design and site layout was planned to avoid all potential archaeological sites.

19.95 The landowner's and local resident's views were also taken into account in the design and layout of the sites with particular respect to layout, visual impact, noise and access requirements. The result of all the consultations and considerations was an iterative design process which resulted in a revised design for the PCUB which is still essentially an economic steel enclosure, required to satisfy the functional requirements, but shaped to blend with the exposed landscape and softened by being partly clad in natural materials. The control building is a more traditional structure also clad in natural materials.

[5] http://www.highland.gov.uk/NR/rdonlyres/637F7B9A-0444-45F7-85A5-5860630255F5/0/OnshoreVisioningReportFinal160511c.pdf

MITIGATION OF LANDSCAPE, SEASCAPE AND VISUAL IMPACTS INCORPORATED INTO DESIGN
▪ Reduction of overall site footprint to minimise loss of physical landscape and seascape elements; ▪ Limiting PCUB height and lowering the buildings by taking away superficial soil layers; ▪ Siting of main PCUBs, control building, and other physical infrastructure within the PCC use natural topographic screening to minimise visibility – in terms of both overall visual envelope (ZTV) and actual visibility from key viewpoints; ▪ Building orientation designed to minimise impact in key viewpoints: e.g. orientation of the main PCUBs has been harmonised with the open vistas when viewed from both the Canisbay Kirk and from the ferry route between Gills Bay and Orkney; ▪ Siting, non-alignment and spacing of PCUBs to minimise additional visual confusion and avoid conflict with existing adjacent historic features and buildings; ▪ Building scale designed to be compatible with scale of landscape and seascape character of site and wider context; ▪ Distinctive building form creates strong identity and clear rationale relating to renewable marine energy source; ▪ A curved roof to reflect the surrounding landscape; ▪ Building form and finishes, include use of natural materials, designed to reflect aesthetic qualities associated with landscape and seascape character of site and wider context; and ▪ Use of local stone walling in harmony with existing uses to help screen control building.

Table 19.17: Mitigation

Note on context and design process

19.96 It is important at the outset to put into context the overall nature of the residual landscape, seascape, and visual effects which will result from this development. In terms of basic footprint, height, and massing, the building group formed by the PCUBs, which constitutes the main source of these impacts, will undoubtedly be larger than the great majority of existing built structures in the study area.

19.97 However, it is crucial to note that in terms of scale (as distinct from specific dimensions) relative to the expansive scale of the existing landscape and seascape context, it is not considered that they will appear to be out of scale, rather, they will tend to be accommodated within this context. In addition, except where they are viewed from close range within the development site boundary, it is considered that their form will "read" within the wider landscape context as predominantly horizontal, (as distinct from the predominantly vertical form of a wind turbine for instance), which will also tend towards acceptable accommodation in a landscape dominated by horizontal landforms, big skies, and distant seascape horizons.

19.98 Accordingly, it is stressed that a fundamental consideration for the assessment of this development is that both the overall sensitivity of the landscape and seascape, and the overall magnitude of potential effects, are of a relatively low order, reflecting an inherent compatibility of the development with its context.

Offshore impacts

19.99 As there is no permanent offshore infrastructure, it has not be necessary to assess the impacts associated with the permanent offshore infrastructure. Effects during the operational and maintenance phase relate to additional vessel activity and lighting associated with maintenance works – this is not considered likely to result in any significant change to the seascape, landscape or visual baseline.

Impacts during construction and installation phase

19.100 During this phase, temporary impacts will occur related to technical operations associated with Horizontal Directional Drilling (HDD) works for the cable landfall; subsequent cable installation through the HDD bore; and construction of the Power Converter Unit Buildings (PCUB) and a control building.

19.101 These temporary impacts have been assessed in terms of the landscape, seascape and visual receptors as identified for the Operations and Maintenance phase. Changes to the landscape and seascape resource due to these operations will not be discernable. While activities associated with drilling, cable drawing and construction and installation of the permanent PCUB's and associated access roadway, hard standings and land forming etc will be visible to varying degrees, mitigation including direction and masking of lighting, minimising disturbed areas, and use of temporary bunding and appropriately designed screen fencing, will ensure that the magnitude of change relating to visual amenity will be negligible.

19.102 Accordingly, it is not considered that there will be any significant residual landscape, seascape, or visual impacts during the Construction and Installation phase.

Impacts during decommissioning phase

19.103 Decommissioning of the onshore facilities will involve removal of plant, dismantling and a high degree of recycling of the building enclosures and regarding / replanting of the site. The endpoint of the decommissioning process will be the return of the site to the pre-development (i.e. as existing) condition. Therefore there will be no residual landscape or visual impacts.

19.6.2 Assessment of landscape impacts - physical changes to the landscape

19.104 Landscape impacts are assessed in relation to two categories: physical changes to the landscape of the development site; and changes to landscape character.

Ness of Quoys

19.105 In addition to the introduction of the built components of the development (described fully in Section 5) there will be a loss of an area of pasture grassland of low landscape and conservation value.

19.106 The introduction of the three PCUB buildings and control building, together with the access road, car park and other ancillary elements, represent a large scale and fundamental change to the physical characteristics of the site. Although other changes will be minor, overall this is considered to result in a major magnitude of change. The sensitivity of the receptor as described in the baseline description in low/medium.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low/Medium	Major	Moderate	Significant

Ness of Huna

19.107 In addition to the introduction of the built components of the development (described fully in Section 5) the following changes will occur to the landscape:

- loss of an area of pasture grassland of low landscape and conservation value; and
- loss of areas of gorse scrub of moderate landscape and conservation value.

19.108 The introduction of the three PCUB buildings and control building, together with the access road, car park and other ancillary elements, represent a large scale and fundamental change to the physical characteristics of the site. Although other changes will be minor, overall this is considered to result in a major magnitude of change. The sensitivity of receptor, as described in the baseline description is low/medium.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low/Medium	Major	Moderate	Significant

19.6.3 Assessment of landscape impacts - changes to landscape character and designated areas

Mixed Agriculture and settlement LCT

19.109 Two discrete geographical units of this LCT occur within the study area. One is located on the western margin of the study area, including the townships of Barrock and Inkstack, and is not affected by the ZTVs of either site. The discussion below focuses on the larger unit which extends from the Mey estate in the west to John o' Groats in the east, and includes the Island of Stroma.

- Ness of Quoys

19.110 The magnitude of change will be inherently limited within this landscape type within the context of continuing change of composition and balance over many years:

- Although the majority of this landscape unit will be affected by visibility of the development, higher ground at Hill of Mey, Hill of Warse, and Mool Hill effectively screen the development, giving smaller areas unaffected by visibility in the western, southern, and eastern margins of the unit, including the coast at John o' Groats;
- The theoretical views occur at separation distances varying from zero approaching the site to approximately 7km: while the impact at close range will be large, over much of the unit the development elements will not generally form recognisable new components and will be viewed as part of the wider landscape; and
- Although sited to minimise visual conflict, the development will tend to form a new focal point within the setting of Canisbay Kirk.

19.111 Taking account of all of the above, the overall magnitude of change is considered to be moderate. The sensitivity of the receptor, as described in the baseline, is low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Moderate	Minor	Not Significant

- Ness of Huna

19.112 With the exception of an additional area of theoretical visibility on the coastline and south of John o' Groats, the change resultant from the Ness of Huna site will not differ in any significant detail from the Ness of Quoys site. Accordingly the overall magnitude of change is considered to be moderate. The sensitivity of the receptor, as described in the baseline, is low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Moderate	Minor	Not Significant

Sweeping Moorland LCT

19.113 Two discrete geographical units of this LCT occur within the study area. One small unit is located between Gills Bay and the headland at St John's Point, and has a dominant coastal aspect. Accordingly it is assessed fully as part of the Seascape Assessment in Section 19.6.4. The discussion below focuses on the larger unit which covers the majority of the southern section of the study area.

- Ness of Quoys

19.114 The ZTV indicates that theoretical visibility of the development will be confined to the northern margin of the unit, on the northern slopes of Warth Hill, extending west to Hill of Rigifa (305722). To the south of this higher ground, the remaining much larger proportion of the unit will be unaffected, with the exception of a small area of high ground at Hill of Stroupster.

19.115 South and east of Hill of Rigifa, and at Hill of Stroupster, actual visibility is currently screened by coniferous plantation.

19.116 The theoretical views occur at separation distances varying from approximately 1.5 to 5km: at these distances the development elements will not generally form recognisable new components and will be viewed as part of the wider landscape.

19.117 Taking account of all of the above, the overall magnitude of change is considered to be minor. The sensitivity of the receptor, as described in the baseline, is low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

- Ness of Huna

19.118 The change resultant from the Ness of Huna site will not differ in any significant detail from the Ness of Quoys site.

19.119 The overall magnitude of change is considered to be minor**.** The sensitivity of the receptor, as described in the baseline, is low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

High Cliffs and Sheltered Bays LCT

19.120 A single discrete geographical unit of this LCT occurs within the study area, located between Duncansby Head and Skirza Head. (This is closely related to the Local Coastal Character Area Duncansby Head to Skirza Head and the assessment below should be read in conjunction with paragraphs 19.166 to 19.170).

- Ness of Quoys

19.121 The ZTV indicates that there would be theoretical visibility of the development from the northern and central parts of the unit, affecting the following areas:

- The immediate vicinity of Duncansby Head; and
- An area of higher ground inland from the Head, extending from approximately 2km east of the lighthouse, to link with the Hill of Crogodale in the central part of the unit, and including the clifftop path adjacent to the Stacks of Duncansby.

19.122 The areas with theoretical visibility fall within the Duncansby Head SLA (See also Paragraphs 19.129 to 19.133).

19.123 The theoretical views occur at separation distances of approximately 6km: at this distance the development elements will not be a prominent feature and will be viewed as part of the wider landscape.

19.124 The views to the development do not coincide with the major focus of views from within this unit, which are eastward to the Stacks and the open sea – the exception to this being the panorama from the Duncansby Head car park.

19.125 Taking account of all of the above, the overall magnitude of change is considered to low**.** The sensitivity of the receptor, as described in the baseline, is high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

- Ness of Huna

19.126 The change resultant from the Ness of Huna site will differ from the Ness of Quoys only to the extent that the theoretical visibility will occur over rather shorter separation distances (2.5-4km compared to 4-6km).

19.127 The overall magnitude of change is considered to be minor. The sensitivity of the receptor, as described in the baseline, is high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

Small Farms and Crofts LCT

19.128 Three discrete geographical units of this LCT occur within the study area, in the townships of Skirza, Nybster/Auckengill, and Rattar/Scarfsferry. None of these units are affected by the ZTVs of either site.

Duncansby Head Special Landscape Area

- Ness of Quoys

19.129 The ZTV indicates that there would be theoretical visibility of the development from almost the entire extent of the SLA. The views to the development do not coincide with the major focus of views from within the SLA, which are eastward to the Stacks and the open sea; the exception to this being the panorama from the Duncansby Head car park.

19.130 The theoretical views occur at separation distances of approximately 4-6km: at these distances the development elements will not be a prominent feature and will be viewed as part of the wider landscape.

19.131 There will be some compromise of the special experiential qualities of the SLA including the perceived naturalness and wildness of the coastline due to visibility of the new development.

19.132 Taking account of all of the above, the overall magnitude of change is considered to be moderate. The sensitivity of the receptor, as described in the baseline, is high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

- Ness of Huna

19.133 The change resultant from the Ness of Huna site will differ from the Ness of Quoys only to the extent that the theoretical visibility will occur over rather shorter separation distances (2.5-4km compared to 4-6km). The overall effects however are considered to fall into the same categorisation.

19.134 The overall magnitude of change is considered to be moderate. The sensitivity of the receptor, as described in the baseline, is high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

Castle of Mey Historic Garden and Designed Landscape (HGDL)

19.135 This site does not fall within the ZTV of either of the two sites and accordingly there will be no effects.

Search Areas for Wild Land (SAWL)

19.136 There are no SAWL areas present within the study area of this assessment.

19.6.4 Assessment of seascape impacts

19.137 This section assesses the indirect effects of the proposed development on the seascape character of the Local Coastal Character Areas within the study area as identified and described in the baseline section above (Section 19.5).

19.138 Under the definitions as set out in the methodology the effects are confined to the Local Coastal Character Areas which fall within the Zones of Theoretical Visibility of either or both of the project sites.

19.139 Local Coastal Character Areas within the study area which are not affected are:

- Freswick Bay
- Ness Head – Brough Head

19.140 The areas are described in turn in clockwise order around the coastline starting at the north-west boundary of the study area.

LCCA 1: Ham to St John's Point

- Ness of Quoys

19.141 This unit does not fall within the ZTV of the Ness of Quoys site and accordingly there will be no seascape character effects.

- Ness of Huna

19.142 The overall extent of the seascape unit affected by change will be very localised and will amount to less than a tenth of the total length of the coastline of the unit.

19.143 The ZTV indicates that there would be theoretical visibility of the development from a short section of coastline immediately west of St John's Point for a distance of approximately 600m. The remainder of the coastline within the unit (a length of approximately 8km) does not fall within the ZTV.

19.144 The change will affect some key landscape and visual characteristics to a limited degree. The areas with theoretical visibility occur within rough, uncultivated ground adjacent to St John's Point. The theoretical views occur at separation distances of approximately 6km: at this distance the development elements will not be a prominent feature and will be viewed as part of the wider landscape. There will be some limited effects on the seascape experience due to visibility of the new development including on the perceived naturalness and wildness of the coastline.

19.145 Taking account of all of the above, the overall magnitude of change is considered to be minor/negligible**.** The sensitivity of the receptor, as described in the baseline, is medium/low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium/Low	Minor/Negligible	Minor	Not Significant

LCCA 2: St John's Point to Gills Bay

- Ness of Quoys

19.146 The overall extent of the seascape unit affected by change will be large. The ZTV indicates that there would be theoretical visibility of the development over the entire length of the coastline (c.3.5km).

19.147 The change will affect key landscape and visual characteristics including view and the settings of historical features.

19.148 The theoretical views occur at separation distances of between approximately 2 and 4km: at these distances the development elements, although not dominant, will constitute recognisable new components in the landscape.

19.149 There will be some limited effects on the seascape experience due to visibility of the new development including on the perceived naturalness and wildness of the coastline.

19.150 Taking account of all of the above, the overall magnitude of change is considered to be moderate/minor**.** The sensitivity of the receptor, as described in the baseline, is medium/high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium/High	Moderate/Minor	Moderate/Minor	Not Significant

- Ness of Huna

19.151 The overall extent of the seascape unit affected by change will be large. The ZTV indicates that there would be theoretical visibility of the development over the entire length of the coastline (c.3.5km).

19.152 The change will affect key landscape and visual characteristics, including views and settings of historical features.

19.153 The theoretical views occur at separation distances of between approximately 3.5-5.8km: at these distances the development elements will not generally form recognisable new components and will be viewed as part of the wider landscape.

19.154 There will be some limited effects on the seascape experience due to visibility of the new development including on the perceived naturalness and wildness of the coastline.

19.155 Taking account of all of the above, the overall magnitude of change is considered to be minor. The sensitivity of the receptor, as described in the baseline, is medium/high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium/High	Minor	Minor	Not Significant

LCCA 3: Gills Bay to Duncansby Head

- Ness of Quoys

19.156 The ZTV indicates that there would be theoretical visibility of the development over approximately 4.7km of coastline in the western section of the unit, between Gills Bay Pier and Ness of Huna. Southern and eastern sections of the coastline of the island of Stroma (a length of approximately 4.3km) also fall within the ZTV. The remainder of the coastline within the unit (a length of approximately 7.3km) does not fall within the ZTV.

19.157 The change will affect some key landscape and visual characteristics to a limited degree. Views, including seaward views, views of and from Stroma, views east and west parallel to the coastline, views from Gills Bay pier, and settings of historical features including Canisbay Kirk.

19.158 The theoretical views occur at separation distances of between approximately 2km to zero on the mainland approaching the site itself: at these distances the development elements will constitute relatively prominent new components in the landscape.

19.159 There will be some limited effects on the aesthetic qualities of the seascape experience due to visibility of the new development.

19.160 Taking account of all of the above, the overall magnitude of change is considered to be moderate**.** The sensitivity of the receptor, as described in the baseline, is medium/low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium/Low	Moderate	Moderate/Minor	Not Significant

- Ness of Huna

19.161 With the exception of Bay of Sannick, the ZTV indicates that there would be theoretical visibility of the development over the entire mainland length of the coastline (approximately 8.3km). Southern and eastern sections of the coastline of the island of Stroma (a length of approximately 4.3km) also fall within the ZTV.

19.162 The change will affect some key landscape and visual characteristics to a limited degree. Views, including seaward views, views of and from Stroma, views east and west parallel to the coastline, views from Gills Bay and John O'Groats piers, and settings of historical features including Canisbay Kirk and the old mill at Huna.

19.163 The theoretical views occur at separation distances of between approximately 3.75km and zero approaching the site itself: at these distances the development elements will constitute recognisable to relatively prominent new components in the landscape.

19.164 There will be some limited effects on the aesthetic qualities of the seascape experience due to visibility of the new development.

19.165 Taking account of all of the above, the overall magnitude of change is considered to be moderate/major**.** The sensitivity of the receptor, as described in the baseline, is medium/low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium/Low	Moderate/Major	Moderate	Significant

LCCA 4: Duncansby Head to Skirza Head

- Ness of Quoys

19.166 The overall extent of the seascape unit affected by change will be localised and will amount to less than a third of the total length of the coastline of the unit.

19.167 The ZTV indicates that there would be theoretical visibility of the development from the northern part of the unit, affecting the immediate vicinity of Duncansby Head, including the car park and cliffs to the north, the lighthouse area, and the footpath southwards from the 63m AOD trig point for a distance of approximately 600m and the cliffs and cliff-top path adjacent to the Stacks of Duncansby for a distance of approximately 1km (a dip in the topography between Duncansby Head and the Stacks screens views to the west towards the development).

19.168 The remainder of the coastline within the unit (a length of approximately 3.5km) does not fall within the ZTV.

19.169 The change will affect some key landscape and visual characteristics to a limited degree:

- The areas with theoretical visibility fall within the Duncansby Head SLA;
- The theoretical views occur at separation distances of approximately 4-6km: at these distances the development elements will not be a prominent feature and will be viewed as part of the wider landscape;
- The views to the development do not coincide with the major focus of seascape views from within this unit, which are eastward to the Stacks and the open sea – the exception to this being the panorama from the Duncansby Head car park; and
- There will be some limited effects on the seascape experience due to visibility of the new development including on views of key features and their settings, and the perceived naturalness and wildness of the coastline.

19.170 Taking account of all of the above, the overall magnitude of change is considered to be low**.** The sensitivity of the receptor, as described in the baseline, is high.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

- Ness of Huna

19.171 The change resultant from the Ness of Huna site will differ from the Ness of Quoys site only to the extent that the theoretical visibility will occur over rather shorter separation distances (2.5-4km compared to 4-6km). The overall effects however are considered to fall into to same categorisation as follows:

19.172 The overall magnitude of change is considered to be low**.** The sensitivity of the receptor, as described in the baseline, is low.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

19.6.5 Assessment of visual impacts

19.173 Visual impacts are assessed on a total of 11 specific viewpoints. The location of each of these viewpoints is illustrated on Figure 19.5 and Figure 19.6. Photomontages relating to the different viewpoints are presented in Figures 19.8 to 19.17 for Ness of Quoys and Figures 19.18 to 19.25 for Ness of Huna. The photomontages are also included in the LSVIA Technical Appendix on the accompanying CD.

19.174 Assessment of other receptor categories, including settlements, roads, and ferry routes is not presented independently for the purposes of this study. Rather, these categories have been included by the selection of viewpoints, which was specifically designed to be representative of all categories of receptor likely to experience significant effects.

19.175 The assessment is based on the visibility of the Project throughout the ZTV area and detailed analysis of possible visual impacts from the viewpoints chosen following the desk study and field analysis, and subsequently agreed with SNH and THC. An onsite workshop was held with these stakeholders on 6th September 2011 to refine the selection of viewpoints based on actual visibility. A number of provisional viewpoints were omitted and others added as a result of this process. A number were also added at the request of THC (Pre-application advice ref. 11/03214 part 8).

19.176 The effects on each viewpoint are presented with reference to a set of images; for pragmatic purposes these are arranged to show firstly impacts on all viewpoints of the Ness of Quoys site, followed by the impacts on all viewpoints of the Ness of Huna site.

Visual Impacts - Ness of Quoys

- Viewpoint 06.1-U/C road to A836 and Canisbay

19.177 This viewpoint is located at the junction of two unclassified minor roads between Stemster and Canisbay, at an elevation of approximately 45m AOD. There is a wide northerly view towards Orkney and Stroma. The land falls towards the coastal strip and the development site is partially hidden at a lower elevation. Scattered buildings at near and intermediate distances form visual foci. Field boundaries are strong horizontal elements in the landscape.

19.178 The sensitivity of this receptor is assessed as low.

19.179 The prevalent landforms, proximity of Mool Hill and the falling levels from this receptor point towards the shoreline means that the development is partly obscured and indistinct. Not all of the PCC buildings will be seen and existing closer buildings, field boundaries and fencing elements mitigate against significant impacts. The magnitude of change is assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

- Viewpoint 09.2– Rear of Village hall at Huna

19.180 This viewpoint is located at the Huna village / meeting hall adjoining the A836. It represents a transient receptor point for traffic in both directions on the 'A' road. The road is the predominant feature, with individual houses and agricultural buildings set within field boundaries defined by fencing and hedging. The grassland / pasture predominant in the landscape falls in gently rolling forms to the shoreline. Overhead power lines are visible breaking the seascape at the horizon line.

19.181 The sensitivity of this receptor is assessed as low.

19.182 The receptor addresses the open level grassland / pasture with agricultural developments and hedgerow field boundaries typical of landscape character types 10, 14 and 15 (Figure 19.7). There are open views across the site to the north towards Stroma and Orkney. The land falls somewhat before rising towards the shore escarpment. The impact of the PCC buildings to the west of the receptor will be modified by following prevalent ground levels. The magnitude of impact is considered to be minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

- Viewpoint 11 - Canisbay kirk & graveyard

19.183 This viewpoint is located at the 'A' listed Canisbay Kirk and its adjoining graveyard. The church and burial ground are predominant and important landscape features and attract high numbers of visitors as well as local worshippers. Beyond the drystone walled enclosure the landform to the shore escarpment is regular and undulating grass and pastureland. The view is of the Ness of Quoys site at a similar elevation, with the Ness of Huna headland beyond and Huna House on the horizon.

19.184 The sensitivity of this receptor is assessed as high.

19.185 The PCC development is clearly visible relatively close to the receptor. Landform mitigates the vertical scale of the development and it is largely outwith the predominant views to Stroma and the Orkney islands to the north. However the buildings will break the open sea views and landscape horizon to the east and the magnitude of impact is therefore assessed as major.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Major	Major	Significant

- Viewpoint 14 - A836 at lay-by

19.186 This viewpoint is located on the main A832 eastward of Mey Hill and is a typical transient receptor for traffic moving east towards John O'Groats. Similar to the St John's point viewpoint, the hill descent provides wide and panoramic views to the east and north east. The landscape scale is very large and individual elements in it, such as Canisbay Kirk, Huna House, Canisbay settlement etc, are visible but of insignificant scale.

19.187 The sensitivity of this receptor is assessed as low.

19.188 The Project is visible but within the landscape scale and distance from the receptor, appears as insignificant. It does not break the horizon line formed by the Pentland Firth to the north-east and Duncansby head to the east, and lies in a context of grouped agricultural and residential buildings. The magnitude of impact is therefore assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

- Viewpoint 15.2 -War memorial

19.189 This viewpoint located at the War Memorial above Canisbay settlement and overlooks the site and the firth from an elevated position. There are substantial mature deciduous trees and hedgerows in the foreground and significant individual and grouped buildings in the Canisbay settlement, with the coastal grasslands and sea beyond, which combine to form a structured and sequential wide vista to the north east. The Ness of Quoys site is obscured by trees but will be partly visible over the winter months.

19.190 The sensitivity of this receptor is assessed as medium.

19.191 The PCC site will be obscured by the deciduous trees in the foreground, and partly obscured by the Georgian house immediately to the NE of the receptor point. In the winter months the development will be partially visible but, given the distance of the development site from the receptor, will appear as a new element of comparable visual scale to the agricultural buildings in the foreground, Canisbay Church and settlements visible to the north-east. The magnitude of impact is therefore assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 16.2 – Canisbay north side

19.192 This viewpoint located at the eastern entry/exit to the Canisbay settlement 1.5Km south of the A832. Although small and relatively scattered, Canisbay is the most significant settlement east of John O'Groats. The view from its eastern access point is at a relatively low elevation but of a panoramic nature, with intermediate ground levels falling to the north and opening the view to the westerly Pentland Firth and Hoy on the horizon. The Ness of Quoys site is located in this vista, although at a lower elevation.

19.193 The sensitivity of this receptor is assessed as medium.

19.194 The Quoys site lies on the land / sea horizon line, but will not break the horizon line and will be partly contained within the mass of St Johns point beyond. Not all the PCUB's will be seen and will be visible at a low level. The landscape impact is considered as moderate.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Moderate	Moderate	Significant

- Viewpoint 20.1 Ferry; South West of Stroma

19.195 This viewpoint is a typical transient receptor for passengers on the Gills Bay – St Margaret's Hope ferry; and for receptors on Stroma. Transient views extend from N and NW Stroma to the Gills Bay harbour entrance to the west of the site. The view to the shore is defined by horizontals, seascape and panoramic views to the east towards Duncansby Head. Canisbay Kirk is a significant feature. The lower lying coastal grasslands and settlements are visually contained by the rising land to moorland at the horizon.

19.196 The sensitivity of this receptor is assessed as medium.

19.197 The Quoys site is some 2km from the easternmost ferry approach and the development will appear as contained below the land horizon to the south of Duncansby Head. The landscape scale adjoining the Quoys site from this receptor is also modified by Mool Hill to the south of the site which will mitigate the scale of the development. The development appears as a significant feature in the coastal landscape although visually contained below the horizon line of moorland beyond. The magnitude of change is considered to be moderate.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Moderate	Moderate	Significant

- Viewpoint 23 - St John's Point: fort

19.198 This viewpoint located at St John's Point (ruined Fort site) on Mey Hill, elevated at approximately 60m AOD to the west of the site. Views to the east towards Duncansby head incorporate the site at some 3.5km distance. This view is defined by the sweep of Gills Bay; the headlands beyond, culminating at Duncansby; and the head of Crees in the foreground. Huna House and Canisbay Kirk are visible features although at considerable distance. While the Ness of Quoys is visible, it is at some distance from this viewpoint and contained within the landscape by the rising moorlands beyond and the strong horizontal geology of the foreshores and the very large scale of the view.

19.199 The sensitivity of this receptor is assessed as medium.

19.200 The PCC will be visible from this elevated receptor; the building forms will be visually contained within the pastureland landscape and will relate to the developed agricultural field / building group patterns. From this viewpoint the three PCUBs will appear as a linear formation but proposed cladding / roof colours and landform / adjoining planting mitigation will reduce impact. The magnitude of impact is therefore assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 25 - Duncansby head

19.201 This viewpoint located at the Duncansby Head visitor car park, elevated at approximately 40m AOD and 5.5km east of the site. It provides extensive open and panoramic views to the Orkney Islands and the mainland north coast. John O' groats is in the foreground with Stroma in the middle distance with St Johns Point and Mey Hill prominent some 9km due west. This receptor point is of high significance due to its geographic prominence and attractiveness to visitors and tourists.

19.202 The sensitivity of this receptor is assessed as high.

19.203 This receptor point is over 5km east of the PCC site. Although the development is visible it appears as a relatively minor and insignificant element of the wider landscape. As such the magnitude of visual impact is assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

- Viewpoint 27 - A835 West of Huna

19.204 This is a transient receptor, indicative of the views from the A835 for westbound traffic. The Quoys site is visible in the middle distance with Mey Hill beyond. Scattered agricultural and residential properties break the near and far horizons. There are open views to the Inner Firth and Stroma offshore.

19.205 The sensitivity of this receptor is assessed as low.

19.206 The development is clearly visible on the near horizon although largely contained below the far Mey Hill headland beyond. The scale of the PCC buildings is mitigated by local land form and its horizontal roof forms. The magnitude of change is assessed as moderate.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Moderate	Minor	Not Significant

19.207 Each of the viewpoints assessed above for Ness of Quoys are illustrated in Figures 19.8 to 19.17 below.

Figure 19.8: Ness of Quoys viewpoint 06.1 – please refer to Technical Appendix for larger version

9.2

E336310 | N973220

NESS OF QUOYS

Viewpoint **1.5km** from nearest Ness of Quoys site boundary.

55° included angle

Figure 19.9: Ness of Quoys viewpoint 09.2 – please refer to Technical Appendix for larger version

11

E334360 | N972820

NESS OF QUOYS

Viewpoint **0.1km** from nearest Ness of Quoys site boundary.

80° included angle

Figure 19.10: Ness of Quoys viewpoint 11 – please refer to Technical Appendix for larger version

14

E331890 | N973110

NESS OF QUOYS

Viewpoint **2.5km** from nearest Ness of Quoys site boundary.

50° included angle

Figure 19.11: Ness of Quoys viewpoint 14 – please refer to Technical Appendix for larger version

15.2

E334190 | N971640

NESS OF QUOYS

Viewpoint **1.2km** from nearest Ness of Quoys site boundary.

55° included angle

Figure 19.12:Ness of Quoys viewpoint 15.2 – please refer to Technical Appendix for larger version

16.2

E335140 | N972480

NESS OF QUOYS

Viewpoint **0.3km** from nearest Ness of Quoys site boundary.

85° included angle

Figure 19.13: Ness of Quoys viewpoint 16.2 – please refer to Technical Appendix for larger version

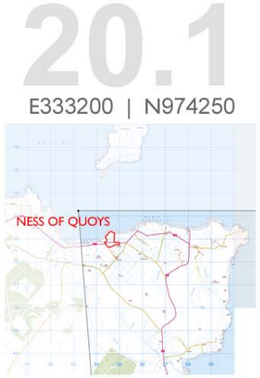


Figure 19.14: Ness of Quoys viewpoint 20.1 – please refer to Technical Appendix for larger version

23

E331100 | N975150

NESS OF QUOYS

Viewpoint **3.8km** from nearest Ness of Quoys site boundary.

65° included angle

Figure 19.15: Ness of Quoys viewpoint 23 – please refer to Technical Appendix for larger version

25

E340500 | N973250

NESS OF QUOYS

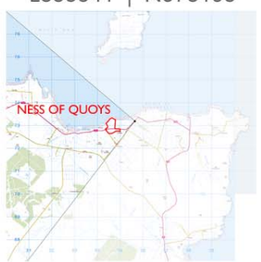
Viewpoint **3.8km** from nearest Ness of Quoys site boundary.

65° included angle

Figure 19.16: Ness of Quoys viewpoint 25 – please refer to Technical Appendix for larger version

27

E335641 | N973198



NESS OF QUOYS

Viewpoint **0.9km** from nearest Ness of Quoys site boundary.

95° included angle

Figure 19.17:Ness of Quoys viewpoint 27 – please refer to Technical Appendix for larger version

Visual Impacts - Ness of Huna

- Viewpoint 06.2 - Junction u/c roads Huna and Canisbay

19.208 This viewpoint is located at the junction of two unclassified minor roads between Stemster and Canisbay, at an elevation of approximately 45m AOD. There is a wide northerly view of Orkney and Stroma. The land falls towards the coastal strip and the development site(s) are partially hidden at a lower elevation. Scattered buildings at near and intermediate distances are visually significant. The landscape character changes from peripheral moorland at the viewpoint to coastal grassland and crofts. Field boundaries are strong horizontal elements in the landscape. Mool Hill to the north between the viewpoint and the coast obscures Huna.

19.209 The sensitivity of this receptor is assessed as low.

19.210 The prevalent landforms, proximity of Mool Hill and the falling levels from this receptor point towards the shoreline means that the development is partly obscured and indistinct. Not all of the PCC buildings will be seen and existing closer buildings, field boundaries and fencing elements mitigate against significant impacts. The magnitude of change is assessed as minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Minor	Minor	Not Significant

- Viewpoint 09.1 - Village hall, Huna on A836

19.211 This viewpoint is located at the Huna village / meeting hall adjoining the A836. It represents a transient receptor point for traffic in both directions on the 'A' road. The road is the predominant feature, with individual houses and agricultural buildings set within field boundaries defined by fencing and hedging. The grassland / pasture predominant in the landscape falls in gently rolling forms to the shoreline. Overhead power lines are visible breaking the seascape at the horizon line.

19.212 The sensitivity of this receptor is assessed as low.

19.213 The receptor addresses the open level grassland / pasture with agricultural developments and hedgerow field boundaries. There are open views across the site to the north towards Stroma and Orkney. The land falls somewhat before rising towards the shore escarpment. The impact of the Huna PCC buildings will be modified by following prevalent ground levels. The magnitude of impact is considered to be moderate.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Low	Moderate	Minor	Not Significant

- Viewpoint 15.1 - War memorial

19.214 This viewpoint located at the War Memorial above Canisbay settlement and overlooks the sites and the firth from an elevated position. There are substantial mature deciduous trees and hedgerows in the foreground and significant individual and grouped buildings in the Canisbay settlement, with the coastal grasslands and sea beyond, which combine to form a structured and sequential wide vista to the north east.

19.215 The sensitivity of this receptor is considered to be medium.

19.216 The Huna site is NE of the receptor and appears as immediately above the Canisbay settlement. The PCUB's break the land / sea horizon but are contained within the sea horizon. The distance from the receptor point, and the more proximate Canisbay settlement, mean that the PCUB's will be perceived at a comparable scale to the settlement. The magnitude of change is considered to minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 16.1 - Canisbay north side

19.217 This viewpoint located at the eastern entry/exit to the Canisbay settlement 1.5km south of the A832. Although small and relatively scattered, Canisbay is the most significant settlement east of John o' Groats. The view from its eastern access point is at a relatively low elevation but of a panoramic nature, with intermediate ground levels falling to the north and opening the view to the westerly Pentland Firth and Hoy on the horizon. The Ness of Huna site is located in this vista, although at a lower elevation.

19.218 The sensitivity of this receptor is considered to be medium.

19.219 The Huna site lies on the land / sea horizon line, proximate to Huna House and grouped residential / agricultural buildings adjoining the A836 at this point. The PCUB's will bear a relationship with the group of buildings on the A road and beyond. The magnitude of change is considered to be minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 17 – John o' Groats Pier

19.220 This viewpoint located at John o' Groats pier, indicative of the viewpoints for visitors to the tourist attraction. The view from the pier is strongly defined by the shoreline escarpments and foreshore rock strata. The Ness of Huna headland is visible although mainly concealed by projecting coastal headland and its escarpment. The magnitude of impact is therefore considered negligible.

19.221 The sensitivity of receptor is considered medium.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Negligible	Negligible	Not Significant

- Viewpoint 20.2 – Ferry; South West of Stroma

19.222 This viewpoint is a typical transient receptor for passengers on the Gills bay – St Margaret's Hope ferry; and for receptors on Stroma. Transient views extend from N and NW Stroma to the Gills Bay Harbour entrance to the West of the site. The view to the shore is defined by horizontals, seascape and panoramic views to the east towards Duncansby Head. Canisbay church is a significant feature. The lower lying coastal grasslands and settlements are visually contained by the rising land to moorland at the horizon.

19.223 The sensitivity of this receptor is assessed as medium.

19.224 The Huna site is some 3km from the easternmost ferry approach and the development will appear as well contained below the land horizon to the south of Duncansby Head. The landscape scale adjoining the site from this receptor is also peripherably modified by Mool Hill to the south which will mitigate the scale of the development somewhat. The development appears as a significant feature in the coastal landscape although at distance from the receptor and visually contained below the horizon line of moorland beyond. Accordingly the landscape impact is considered to be minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 23 - St John's Point; fort

19.225 This viewpoint located at St John's Point (ruined Fort site) on Mey Hill, elevated at approximately 60m AOD to the West of the site. Views to the east towards Duncansby head incorporate the site at some 3.5km distance. This view is defined by the sweep of Gills Bay; the headlands beyond, culminating at Duncansby; and the Head of Crees in the foreground. Huna House and Canisbay Kirk are visible features although at considerable distance. While the Ness of Quoys and Ness of Huna sites are visible, they are at some distance from this viewpoint and contained within the landscape by the rising moorlands beyond and the strong horizontal geology of the foreshores and the very large scale of the view.

19.226 The sensitivity of this receptor is considered to be medium.

19.227 The Huna site lies some 5km to the east of this receptor and the elevated receptor position relative to the site means that it is wholly contained within the wider landscape and the horizon line of Duncansby Head to the east. Although the PCUB's are larger in scale than Huna House and the adjoining settlement on the A836, the separation distance to the receptor means that the impact will be minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
Medium	Minor	Minor	Not Significant

- Viewpoint 25 - Duncansby Head

19.228 This viewpoint is located at the Duncansby Head visitor car park, elevated at approximately 40m AOD and 5.5Km east of the site. Extensive open and panoramic views to the Orkney Islands and the mainland north coast. John o' Groats is in the foreground with Stroma in the middle distance with St Johns Point and Mey hill prominent some 9km due west.

19.229 The sensitivity of this receptor is considered to be high.

19.230 The Huna site is visible from this receptor but well contained within the vast seascape context and below the horizon line formed by Mey Hill some 8km to the west. The PCUB configuration and location on the site will result in a high degree of landscape integration and a relatively low visual profile. The separation distance is over 5km. The magnitude of change is considered to be minor.

Sensitivity of receptor	Magnitude of impact	Consequence	Significance
High	Minor	Minor	Not Significant

19.231 The Ness of Huna viewpoints assessed above are illustrated in Figures 19.18 to 19.25 below.

6.2

E336296 | N972165

NESS OF HUNA

Viewpoint **1.0km** from nearest Ness of Huna site boundary.

30° included angle

Figure 19.18:Ness of Huna viewpoint 6.2 – please refer to Technical Appendix for larger version

9.1

E336310 | N973220

NESS OF HUNA

Viewpoint **0.0km** from nearest Ness of Huna site boundary.

85° included angle

Figure 19.19: Ness of Huna viewpoint 9.1 – please refer to Technical Appendix for larger version

15.1

E334190 | N971640

NESS OF HUNA

Viewpoint **2.5km** from nearest Ness of Huna site boundary.

85° included angle

Figure 19.20: Ness of Huna viewpoint 15.1 – please refer to Technical Appendix for larger version

16.1

E335140 | N972480

NESS OF HUNA

Viewpoint **1.2km** from nearest Ness of Huna site boundary.

115° included angle

Figure 19.21:Ness of Huna viewpoint 16.1 – please refer to Technical Appendix for larger version

17

E337960 | N973480

NESS OF HUNA

Viewpoint **1.2km** from nearest Ness of Huna site boundary.

60° included angle

Figure 19.22: Ness of Huna viewpoint 17 – please refer to Technical Appendix for larger version

20.2

E333200 | N974250

NESS OF HUNA

Viewpoint **3.0km** from nearest Ness of Huna site boundary.

85° included angle

Figure 19.23: Ness of Huna viewpoint 20.2 – please refer to Technical Appendix for larger version

23

E331100 | N975150

NESS OF HUNA

Viewpoint **5.2km** from nearest Ness of Huna site boundary.

65° included angle

Figure 19.24: Ness of Huna viewpoint 23 – please refer to Technical Appendix for larger version

25

E340500 | N973250

NESS OF HUNA

Viewpoint **4.0km** from nearest Ness of Huna site boundary.

65° included angle

Figure 19.25:Ness of Huna viewpoint 25 – please refer to Technical Appendix for larger version

19.7 Potential Variances in Environmental Impacts

19.232 As noted above, this assessment has of necessity considered two potential sites for the PCC and related onshore development and landscape/seascape and visual impacts have been assessed and included for both sites, pending a decision (which will be based on technical, site availability and related factors still to be determined at the time of writing).

19.233 This assessment has included the potential variances of impact arising from the differing landscape and visual consequences from the key receptors and transient perceptions, which will occur from the development on either site. However for the onshore aspects of the Project, as only one site will be developed as part of the Project, the actual impact will be less than that presented in this assessment.

19.234 Offshore installation and maintenance / operational impacts will not vary with either onshore development option.

19.8 Cumulative Impacts

19.8.1 Introduction

19.235 MeyGen has in consultation with Marine Scotland and The Highland Council identified a list of other projects (MeyGen, 2011) which together with the Project may result in potential cumulative impacts. The list of these projects including details of their status at the time of the EIA and a map showing their location is provided in Section 8; Table 8.3 and Figure 8.1 respectively.

19.236 Having considered the information presently available in the public domain on the projects for which there is a potential for cumulative impacts, Table 19.18 below indicates those with the potential to result in cumulative impacts from a Landscape, Seascape and Visual perspective. The consideration of which projects could result in potential cumulative impacts is based on the results of the project specific impact assessment together with the expert judgement of the specialist consultant.

Project title	Potential for cumulative impact	Project title	Potential for cumulative impact	Project title	Potential for cumulative impact
MeyGen Limited, MeyGen Tidal Energy Project, Phase 2	✓	SHETL, HVDC cable (onshore to an existing substation near Keith in Moray)	×	OPL, Ocean Power Technologies (OPT) wave power ocean trial	×
ScottishPower Renewables UK Limited, Ness of Duncansby Tidal Energy Project	✓	Brough Head Wave Farm Limited, Brough Head Wave Energy Project	×	MORL, Moray Offshore Renewables Ltd (MORL) offshore windfarm	✓
Pelamis Wave Power, Farr Point Wave Energy Project	×	SSE Renewables Developments (UK) Limited, Costa Head Wave Energy Project	×	SSE and Talisman, Beatrice offshore Windfarm Demonstrator Project	×
Sea Generation (Brough Ness) Limited, Brough Ness Tidal Energy Project	×	EON Climate & Renewables UK Developments Limited, West Orkney North Wave Energy Project	×	BOWL, Beatrice Offshore Windfarm Ltd (BOWL) offshore windfarm	✓
Cantick Head Tidal Development Limited, Cantick Head Tidal Energy Project	×	EON Climate & Renewables UK Developments Limited, West Orkney South Wave Energy Project	×	Northern Isles Salmon, Chalmers Hope salmon cage site	×
SSE, Caithness HVDC Connection - Converter station	×	ScottishPower Renewables UK Limited, Marwick Head Wave Energy Project	×	Northern Isles Salmon, Pegal Bay salmon cage site	×
SSE, Caithness HVDC Connection - Cable	×	SSE Renewables Developments (UK) Limited, Westray South Tidal Energy Project	×	Northern Isles Salmon, Lyrawa salmon cage site	×
RWE npower renewables, Stroupster Windfarm	✓	EMEC, Wave Energy test site (Billia Croo, Orkney)	×	Scottish Sea Farms, Bring Head salmon cage site	×
SSE, Gills Bay 132 kV / 33 k V Substation Phase 1: substation and overhead cables (AC)	✓	EMEC, Tidal energy test site (Fall of Warness, Orkney)	×	Northern Isles Salmon, Cava South salmon cage site	×
SSE, Gills Bay 132 kV / 33 k V Substation Phase 2: HVDC converter station and new DC buried cable	✓	EMEC, Intermediate wave energy test site (St Mary's Bay, Orkney)	×	Scottish Sea Farms, Toyness salmon cage site	×
SHETL, HVDC cable (offshore Moray Firth)	×	EMEC, Intermediate tidal energy test site (Head of Holland, Orkney)	×	Northern Isles Salmon, West Fara salmon cage site	×

Table 19.18: Summary of potential cumulative impacts

19.237 The following sections summarise the nature of the potential cumulative impacts for each potential Project phase:

- Construction and installation;
- Operations and maintenance; and
- Decommissioning.

19.8.2 Potential cumulative impacts during construction and installation

19.238 The cumulative impacts of the construction and installation phases of the Project onshore and marine activity offshore have degrees of joint visibility which vary with receptor sensitivity and proximity. Offshore activity, consisting of specified vessels at varying degrees of frequency and location, and to varying degrees tidal related, may be considered to be of a transient nature. Although there will be a degree of joint visibility, the differing nature and frequencies of onshore and offshore activities will mitigate against more significant cumulative impacts. The ZTV mapping for both sites indicates a limited potential for significant cumulative impact in terms of assessed viewpoints.

19.8.3 Potential cumulative impacts during operations and maintenance

19.239 Wider cumulative impacts can arise from the joint visibility of a range of developments. Those noted below are considered to have potential for cumulative impacts due to *simultaneous* or *successive* visibility (Guidance on Cumulative Effect of Windfarms SNH, 2005).In the case of the windfarms listed below, it is noted that due to the fundamental distinction in nature between them and the proposed Project, with no prominent visual characteristics in common, potential cumulative impacts will be minimal.

- MeyGen Tidal Energy Project , Phase 2 (total 398MW in the Inner Sound); Phase 2 of the MeyGen Tidal Energy Project will comprise the deployment of a further 312MW offshore and associated

cables to shore and onshore infrastructure. The exact geographical location, extent and nature of the onshore facilities required for Phase 2 are not yet defined and will incorporate lessons learned from, and technology advancements beyond Phase 1 of the Project. These factors will influence the potential for, nature of and significance of any cumulative impacts;

- Ness of Duncansby Tidal Energy Project (Scottish Power Renewables UK Ltd); proposed 95MW wave energy development and associated onshore facilities; details and onshore site unknown but adjoins Duncansby Head. Onshore facilities will of necessity be located close to Duncansby Head and close to sea level and any cumulative impact is not likely to be significant;

- Gills Bay 132kV/33kV substation (SHETL); construction of enclosed substation close to Gills Bay. Precise nature and location not known. The development may fall within the ZTVs dependant on precise location and a degree of cumulative impact may occur;

- Stroupster Windfarm. Consented windfarm of 12 turbines to tip height of 113m. It is likely that the ZTV of this project will overlap with the ZTVs of both Ness of Quoys and Ness of Huna and there may be simultaneous or successive visibility;

- MORL, Moray Offshore Renewables Ltd (MORL) offshore windfarm. Approximately 200 turbines of 158.5-182m tip height. Assuming a study area of 35km radius from the outer edge of the MORL development area, there will be overlap with the MeyGen Phase 1 study area and dependent on the ZTV potentially therefore a degree of cumulative impact may occur; and

- BOWL, Beatrice Offshore Windfarm Ltd (BOWL) offshore windfarm. Approximately 920MW offshore windfarm development consisting up to 184 turbines of maximum tip height of approximately 150m. Assuming a study area of 35km radius from the outer edge of the Beatrice development area, there will be overlap with the MeyGen Phase 1 study area and dependent on the ZTV potentially therefore a degree of cumulative impact may occur.

19.8.4 Potential cumulative impacts during decommissioning

19.240 As noted above, decommissioning operations for the onshore facilities will involve removal of plant, dismantling and a high degree of recycling of the building enclosures, and regrading / replanting of the site. These works will have a very restricted visual envelope and it is not considered that they would lead to any significant cumulative impacts with the above projects.

19.8.5 Mitigation requirements for potential cumulative impacts

19.241 No mitigation is required over and above the project-specific mitigation.

19.9 Proposed Monitoring

19.242 None required.

19.10 Summary and Conclusions

19.243 This LSVIA has assessed the residual onshore and offshore impacts of the proposed Project, in terms of the construction and installation, operation and maintenance, and decommissioning phases. Assessments have been prepared and included for two potential sites, only one of which will be developed during Phase 1 of the Project.

19.244 The assessment has noted two primary considerations at the outset.

19.245 Firstly, that the baseline characteristics of the landscape, seascape, and visual resources of the study area, (notably its expansive scale, and dominant horizontality of visual composition) are inherently compatible with the proposed development.

19.246 Secondly, that the assessment has proceeded in parallel with the development of specific design objectives to ensure that residual impacts on these resources are minimised. Taking account of professional guidance from both a seascape and landscape perspective, and having regard to particular local attributes of the sites and their settings, the design incorporates substantial “embedded” mitigation measures relating not only to the primary issues of scale and form, but detailed considerations including micrositing, orientation, natural topographic screening, and materials and finishes.

19.247 The combination of inherent compatibility and sensitive design result in a limited number of impacts which are considered to be significant. These are exclusively related to onshore infrastructure and would occur during the Operations and Maintenance phase.

19.248 For the Ness of Quoys site, significant impacts are as follows:

- Direct physical changes to the landscape of the site itself;

- Indirect landscape impacts due to visibility on the Duncansby Head Special Landscape Area; and

- Impacts on the visual amenity of three viewpoints: VP 11, Canisbay Kirk, VP16.2 Canisbay village and VP 20, the route of the Gills Bay ferry within Inner Sound.

19.249 For the Ness of Huna site, significant impacts are as follows:

- Direct physical changes to the landscape of the site itself;

- Indirect landscape impacts due to visibility on the Duncansby Head Special Landscape Area;

- Impacts on the visual amenity of 1 viewpoint: VP 17 John O’Groats Pier; and

- Impacts on the seascape of Local Coastal Character Area 3, Gills Bay to Duncansby Head.

19.250 Direct residual landscape impacts to both sites are acknowledged as still being significant notwithstanding the design mitigation. Similarly, significant visual impacts from a small number of the closest range viewpoints are to be expected, but it is again stressed that design mitigation has avoided and/or reduced the large majority of the residual visual impacts to levels which are not considered significant. The significant impact of the Ness of Huna alternative on the Gills Bay to Duncansby Head seascape unit is due predominantly to the large geographical extent of the ZTV along the immediate coastline, reflecting the difficulty of mitigating visual effects from this perspective.

19.251 Neither site was considered to have significant residual cumulative impacts in conjunction with the agreed list of additional existing or planned projects.

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