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Orkney Islands Council

Landscape Capacity Assessment for Wind Energy in Orkney

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EXECUTIVE SUMMARY

OBJECTIVES AND METHOD

This study has considered the capacity of the Orkney landscape to accommodate onshore wind energy development. The landscape capacity assessment is based on an assessment of landscape sensitivity and value of the different landscape character types and areas of Orkney together with the evolving wind energy scenario. This has involved a staged process:

- *Firstly assessing the underlying capacity of the Orkney landscape to accommodate wind turbine development;*
- *Secondly, assessing the degree of cumulative change resulting from operating and consented wind turbines in Orkney;*
- *Thirdly, assessing the extent to which cumulative consented development has reached the limit of the landscape's capacity to acceptably accommodate wind energy developments;*
- *Finally, assessing residual capacity and the level of further development that could acceptably be accommodated within areas of Orkney.*

The study is based on the premise that, given current renewable energy targets, there will be a degree of landscape change and effects on visual amenity resulting from wind energy development that requires careful management. In applying the assessment process, the study has addressed a number of concepts and issues that affect the perceived significance and acceptability of cumulative changes caused by multiple wind energy developments in the landscape.

STRUCTURE OF THE REPORT

The main report is divided into 6 chapters describing the assessment process, findings and conclusions. There are a number of appendices containing detailed information relevant to the assessment.

***Chapter 1 Introduction** describes the background to the project.*

***Chapter 2 Cumulative Impact and Capacity Methodology** describes the basis of the assessment of cumulative effects and landscape capacity. It describes the key criteria used in assessing landscape sensitivity and value and in determining the degree of cumulative impacts on the landscape. The method is a staged, transparent process, balanced between objective assessment and informed professional judgement. Chapter 2 navigates the reader through the rest of the assessment process, outlining the purpose of each chapter and the relevant tables and figures.*

***Chapter 3 Landscape Baseline** outlines the geography, landscape character types and landscape designations of the Orkney archipelago. Landscape character types and landscape character areas are as defined in the SNH Orkney landscape character assessment (1998).*

***Chapter 4 Visual Baseline** describes the visual sensitivity assessment. This involves a computer generated intervisibility assessment across the study area, focussing on the visibility of the Orkney landscape from residential receptors, transport routes and key viewpoints.*

***Chapter 5 Wind Turbines in the Study Area** describes the distribution of consented and proposed wind energy developments, from single turbines to windfarms, across Orkney.*

Chapter 6 Assessment of Landscape Capacity and Cumulative Change** is a detailed capacity and cumulative impact assessment. It assesses the underlying capacity of the landscape for wind energy development; the extent to which current development has utilised the underlying capacity and the remaining or residual capacity for wind energy development. The assessment in Chapter 6 is carried out for the fourteen main populated islands and their satellites, based on generic assessments of landscape sensitivity and capacity for each landscape character type provided in **Appendix 3.** Generic assessments are adjusted as appropriate to suit the island contexts of individual landscape character areas. Appendix 3 and Chapter 6 also give detailed guidance on the appropriate size and siting of wind turbines and windfarms in the landscape character types, areas and islands. The analysis of capacity and cumulative development across Orkney is shown spatially on maps in **Figures 6.1 to 6.3.

*The study concludes with a summary map, **Figure 6.4**, indicating areas with underlying capacity for wind energy development and overlapping areas in which cumulative impact limits development (i.e. where consented development limits the potential for future development due to occupying the underlying capacity). This figure also highlights an area identified as suitable for future strategic wind energy development, where a greater degree of landscape change may be appropriate to accommodate more intensive wind energy development. The summary figure is also shown as **Figure A** following this executive summary.*

SUMMARY OF FINDINGS

The Orkney Landscape

The Orkney archipelago comprises numerous closely grouped islands, tending to be low lying or with low rounded hills, separated by sounds and firths, creating a characteristic combination of landscape and seascape. The island landscapes are predominantly pastoral with the exception of the central uplands of the larger islands, and the rugged hills and cliffs of the western seaboard. The most rugged of the islands is Hoy, in the south west of the archipelago, characterised by distinct glaciated hills and valleys and a dramatic coast. Towards the north east the islands become less dramatic, often including sandy beaches and bays and gently sloping or undulating pastures. The population of Orkney is dispersed throughout the islands in farms, crofts and houses which are found frequently in the landscape. Kirkwall on Mainland is by far the largest settlement and the capital of the islands.

Assessment of Underlying Capacity

There are no areas of Orkney with underlying capacity for the scale of multi-turbine windfarms found in parts of mainland Scotland; there are no locations where single wind energy developments greater than 20MW could be accommodated without exceeding the underlying landscape capacity.

The main constraints to development include:

- *The modest scale and extent of the island landscapes;*
- *The lack of extensive large scale uplands into which turbines can be readily absorbed;*
- *The highly dispersed population and patterns of settlement that occur on the islands, resulting in widespread visual sensitivities;*
- *The presence of areas with outstanding scenic qualities and wildness; the significance of the landscape to the setting of the World Heritage Site; and the sensitive coastline and seascape which is a defining feature of the Orkney islands.*

However capacity exists in the Moorland Hills landscapes of Mainland for modestly sized arrays of turbines greater than 50m total height. Away from the uplands, capacity for turbines taller than 50m is found in the coastal lowlands in the more remote peninsulas and headlands, typically of landscape types Low Island Pastures, Undulating Island Pastures and Low Moorland where there is a strong relationship with the wider seascape and an often undramatic coastline, although turbines still require careful siting to avoid impacts to sensitive coastlines and coastal features.

The dispersed pattern of settlement, comprising farms, crofts, residences, roads and electricity lines scattered across the lowland landscapes has a good capacity for smaller turbines, typically to 30m, and more occasional single or small groupings of turbines between 30 and 50m.

The most sensitive landscape types with the least capacity for wind energy include the coastal Cliff Landscapes, Coastal Hills and Heaths, Holms and much of the wilder hill landscapes of Hoy.

Consented Wind Energy Developments at July 2013

Operational and consented wind turbines in Orkney comprise a total of 780 turbines overall. The vast majority are turbines less than 20m tall, grouped singly or in small clusters in the lowland landscape, most occurring in the Inclined Coastal Pastures, Low Island Pastures and Coastal Basins character types. Arrays of more than three turbines of 50m+ are found on West Mainland, Sanday and Stronsay, with the largest turbines on Burgar Hill up to 116m. Single or small groups of turbines up to 80m are quite frequently found throughout the islands, often in lowland locations, sometimes as community wind energy developments such as on Shapinsay and Eday.

Past Planning Decisions

A number of applications for wind energy developments in Orkney have been refused, withdrawn or dismissed at appeal. All of the larger refused applications have been on West Mainland, involving developments of up to 3 turbines greater than 50m total height. The reasons for refusal vary but decisions include adverse landscape and visual impacts as a factor.

CAPACITY FOR FURTHER WIND ENERGY DEVELOPMENT

The following is a summary of the areas of highest opportunity and constraint with respect to wind energy developments of all sizes.

Areas with the Highest Underlying Capacity

Figure A identifies in dark green the areas which have the highest underlying capacity in Orkney for wind energy development, irrespective of the existing consented levels of development.

The main areas are:

1. Brough Ness, South Ronaldsay;

2. Flotta and the landscape around Lyness to the south west of Scapa Flow;

3. The south facing slopes of the Moorland Hills of West Mainland overlooking Scapa Flow;

4: The northern Moorland Hills of West Mainland;

5. Rothiesholm on Stronsay;

6. Spur Ness, southern Sanday.

These areas have the capacity to accommodate larger sizes of turbine, typically over 50m, and/or greater numbers and concentrations ***relative to other areas*** *of landscape in Orkney. This is based on a combination of one or more factors including suitable landscape character, lower visual sensitivity or lower value. Not all of these factors are present in every area identified and the analysis and the guidance on siting and design in Chapter 6 and Appendix 3 should be followed.*

Areas of Limited Underlying Capacity

The majority of the lowland areas of Orkney have limited underlying capacity, typically suited to small scale developments of turbines up to 50m tall, which are usually easily absorbed into the productive, settled, agricultural landscape, and more occasional individual turbines between 50 and 80m. Within these lowland landscapes capacity varies, with more sensitive character types including the exposed Ridgeline Island Landscapes, and enclosed Loch Basins and Coastal Basins. These areas are shown in light green in Figure A.

Areas with No Underlying Capacity

There are areas with no underlying capacity in Orkney. These are left uncoloured in Figure A:

1. Most of the Moorland Hills of Hoy;

2. The Rugged Glaciated Hills and Glaciated Valleys of Hoy;

3. The Cliff Landscapes of Hoy, West Mainland and Westray, with associated Coastal Hills and Heaths;

4. The northern tip of Papa Westray;

5. The Moorland Hill tops of southern West Mainland, Rousay and Eday; and

6. The Holms.

It is recommended that these landscape types and areas remain undeveloped to protect their character, avoid widespread visibility of turbines, protect key viewpoints and features and particularly to protect the landscapes and the settings of the National Scenic Area and World Heritage Site.

Areas Where Cumulative Impact Limits Further Development

Many areas of Orkney have consented developments, or developments nearby, which result in landscapes having reached or are close to reaching their limits of cumulative wind energy development. These are hatched in red in Figure A:

1. The north western corner of South Ronaldsay, around Widewall Bay;

2. The Inclined Coastal Pastures etc including, and adjacent to the Burgar Hill and Hammars Hill turbine developments on the east coast of West Mainland, extending across the sound to the Inclined Coastal Pastures on the south coast of Rousay;

3. The Coastal Basin to the north of St Mary's in East Mainland;

4. Most of Deerness on East Mainland;

5. The Coastal Basin in the north east of Rousay;

6. The Loch Basin around Pierowall on Westray.

These areas are defined by the following criteria:

- *The developed areas of windfarms and turbines (operational and consented) and the cumulative extent of their impacts on the surrounding landscape;*
- *The underlying landscape capacity within the LCAs and the surrounding LCAs;*
- *The extent of area within which further significant development should be limited, to avoid extending cumulative landscape and visual impacts between the groups of turbines within the cumulative area and other turbines outside the area.*

The boundaries shown in Figure A are indicative. They are described in more detail for each area in Section 6, together with the main objectives for limiting further development. In the case of specific development proposals there should be an assessment relating to the detailed criteria.

Areas of Potential Future Strategic Wind Energy Development

The premise of this assessment is that in most areas wind energy development will result in a degree of landscape change, and this assessment has identified an acceptable level of development which would introduce a non-fundamental or acceptable level of change to key landscape characteristics and visual resources.

Within the wider context of Orkney, it may be appropriate to go beyond this approach of 'landscape accommodation' to allow landscapes to change more fundamentally in order to meet local and national policy objectives for wind energy development, and thus helping to prevent unacceptable levels of development in areas of greater landscape sensitivity.

Only one such location is identified in Orkney, encompassing Flotta, Fara and part of the west coast of Hoy around Lyness as identified on Figure A. The reasons for this area being identified as suitable for more significant landscape change include:

- *A partly industrialised character unique in Orkney, with a history of military and industrial development including the existing Flotta oil terminal and the semi-industrialised nature of the landscape around Lyness;*
- *The large scale seascape of Scapa Flow into which larger wind energy developments could be absorbed;*
- *The presence of the substantial landmass of Hoy, against which turbines would often be backclothed.*

Nevertheless the scale of large wind energy developments in this area would require careful assessment, especially in order to avoid unacceptable impacts on the NSA and its setting.

It is emphasised that this is a strategic level landscape and visual study, providing a context for consideration of capacity for, and the cumulative effects of, existing and potential future wind turbine developments in Orkney. No site specific conclusions should be drawn from it in relation to current, proposed or future wind turbines and windfarms.

As a strategic landscape and visual study this does not address specific localised impacts such as effects on individual residential receptors or other sensitive receptors. All wind energy proposals should be considered on their own unique locational and design characteristics as well as their strategic context. All proposals should be subject to landscape, visual and cumulative impact assessment including (if required) a full environmental assessment.

Legend

Capacity

- Areas with Highest Underlying Capacity
  1. *Southern South Ronaldsay*
  2. *East Hoy & Flotta*
  3. *Southern Moorland Hills, West Mainland*
  4. *Northern Moorland Hills, West Mainland*
  5. *South Stronsay*
  6. *South Sanday*
- Areas with Limited Underlying Capacity
- Areas with No Underlying Capacity
- Areas where Cumulative Impact Limits Development
  1. *Widewall bay*
  2. *Evie / Southern Rousay*
  3. *St Marys*
  4. *Deerness*
  5. *North East Rousay*
  6. *Pierowall*
- Landscape Character Areas
- Area of Potential Fututre Strategic Wind Energy Development

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Figure A

Indicative Wind Turbine Development Opportunitites and Constraints

N

0 5 10 20 Km

1.0 INTRODUCTION

1.1 Background

Scottish Planning Policy (*SPP 2014*) states that local authorities should set out a spatial framework indentifying those areas that are likely to be most appropriate for onshore windfarms, following the approach shown in Figure 1.1 below.

Figure 1.1: Extract from Scottish Planning Policy 2014 on Spatial Frameworks for Windfarms

Table 1: Spatial Frameworks

Group 1: Areas where wind farms will not be acceptable: National Parks and National Scenic Areas.		
Group 2: Areas of significant protection: Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.		
National and international designations: • World Heritage Sites; • Natura 2000 and Ramsar sites; • Sites of Special Scientific Interest; • National Nature Reserves; • Sites identified in the Inventory of Gardens and Designed Landscapes; • Sites identified in the Inventory of Historic Battlefields.	**Other nationally important mapped environmental interests:** • areas of wild land as shown on the 2014 SNH map of wild land areas; • carbon rich soils, deep peat and priority peatland habitat.	**Community separation for consideration of visual impact:** • an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.
Group 3: Areas with potential for wind farm development: Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.		

Scottish Government policy in SPP and web based guidance clearly indicates that cumulative development within areas may lead to eventual limits on further development. Paragraph 169 of SPP identifies cumulative issues as one of a number of potential constraints to wind energy development. Landscape and visual amenity are areas of concern when looking at cumulative effects of wind energy development.

Orkney's potential for wind energy is being realised partly through increased interest in small and medium sized lowland wind energy developments in addition to larger scale commercial developments traditionally located in more remote areas. Concern about the capacity of the landscape to accommodate smaller sized developments has been raised by Orkney Island Council Elected Members and members of the public. Scottish Government web based guidance (*Onshore Wind Turbines, May 2014*) states:

> *'Planning authorities are more frequently having to consider turbines within lower-lying more populated areas, where design elements and cumulative impacts need to be managed'.*

This study is an assessment of the capacity of the Orkney landscape and visual amenity to accommodate all types of onshore wind energy development and an assessment of current and potential future cumulative issues. New Supplementary Guidance will be prepared taking into account the findings of this study.

1.2 Consultancy Appointment

Orkney Islands Council, in Partnership with and jointly funded by Scottish Natural Heritage (SNH), have appointed Ironside Farrar to undertake a strategic landscape capacity assessment with respect to wind energy development across the local authority area. The key purpose of this study is to provide detailed guidance on the capacity of the landscape to accommodate wind turbine development and to inform the review of the Development Plan spatial frameworks and supplementary guidance.

The key study objectives are:

- Review the current position of the installed, consented and scoped wind energy developments based on Orkney Island Council records;
- In accordance with the SPP provide suggested broad areas of search for project developments of differing scale; provide suggestions for areas requiring significant protection from wind energy projects of all scales; provide suggestions for areas with potential constraints and identify criteria for decision making;
- Advise on the capacity of individual landscape character areas to accommodate a range of scales / types of development;
- Provide siting and design guidance for those landscape character areas that are identified as having some capacity for specific scales of development;
- Provide advice on likely cumulative effects taking into account existing and consented wind energy projects in the Orkney area;
- Provide guidance on a consistent approach for determining planning applications for single turbines and for small and medium scale projects.

This study specifically assesses landscape and visual sensitivity, landscape value and landscape capacity together with the impact of cumulative wind energy development in order to determine where significant protection from further development may be required. This study addresses these requirements through a staged assessment process detailed in Sections 2.0 to 6.0.

1.3 National and Local Policy

National and local planning policies in Scotland are well disposed towards the development of onshore wind energy. However it is accepted that there are limitations imposed by environmental sensitivities and the capacity of areas to accept cumulative development. Therefore the acceptability of multiple windfarms and turbines and the cumulative landscape and visual impacts of development has to be considered in the light of national and development plan policy. **Appendix 1** provides an overview of current national policy and guidance.

Scottish Planning Policy (SPP 2014) continues to strongly support onshore wind energy. It continues to support the undertaking of Spatial Frameworks and capacity studies. In comparison to SPP2010 key changes in emphasis are the recommendation for inclusion of all scales of wind energy development in spatial frameworks and the provision of a more detailed hierarchy and explanation of constraints to and opportunities for wind energy development.

1.4 Landscape Capacity and Cumulative Impacts

SPP and Scottish Government guidance identifies cumulative impacts and landscape capacity as being critical to the identification of broad areas of search. This study has thus been prepared to inform the Council on the issues of landscape capacity and cumulative impact. Accordingly it comprises four main themes:

- A strategic landscape capacity study, investigating the underlying capacity of landscapes within Orkney to accommodate wind energy development;
- A cumulative assessment examining the level of cumulative development of operating, consented and proposed wind turbines and windfarms in Orkney;
- Guidance on the levels and types of wind turbine development throughout Orkney that would be acceptable in landscape terms, taking into account the first two considerations;
- Criteria to assist in the determination of single turbine developments and small and medium scale turbines.

It is emphasised that this is a strategic level landscape and visual study, providing a context for consideration of capacity for, and the cumulative effects of, existing and potential future wind turbine developments in Orkney. No site specific conclusions should be drawn from it in relation to current, proposed or future wind turbines and windfarms.

As a strategic landscape and visual study this does not address specific localised impacts such as effects on individual residential receptors or other sensitive receptors. All wind energy proposals should be considered on their own unique locational and design characteristics as well as their strategic context. All proposals should be subject to landscape, visual and cumulative impact assessment including (if required) a full environmental assessment.

2.0 CUMULATIVE IMPACT AND CAPACITY METHODOLOGY

2.1 Purpose of Methodology

The purpose of the following assessment is to determine the capacity of the Orkney landscape to accommodate wind energy development and to determine the levels of cumulative development that would be acceptable across Orkney. The assessment takes into account existing cumulative development within and around Orkney and is based on the premise that current renewable energy policies will lead to a future level of landscape change that requires careful management.

The key objectives of the study are outlined in Section 1.2. The methodology serves these objectives through clear assessment of sensitivity and landscape capacity across Orkney, together with an assessment of the cumulative effects of current consented wind energy development and the potential for accommodating further development in the future.

Nevertheless it is recognised, in SNH and Scottish Government Guidance provided in Appendix 2, that the assessment of landscape capacity and cumulative impacts is not a straightforward exercise. The background considerations and detailed methodology for this process are detailed in **Appendix 2**. The following is a summary of the methodology, key considerations and guide to the presentation of findings and recommendations.

2.2 Study Stages

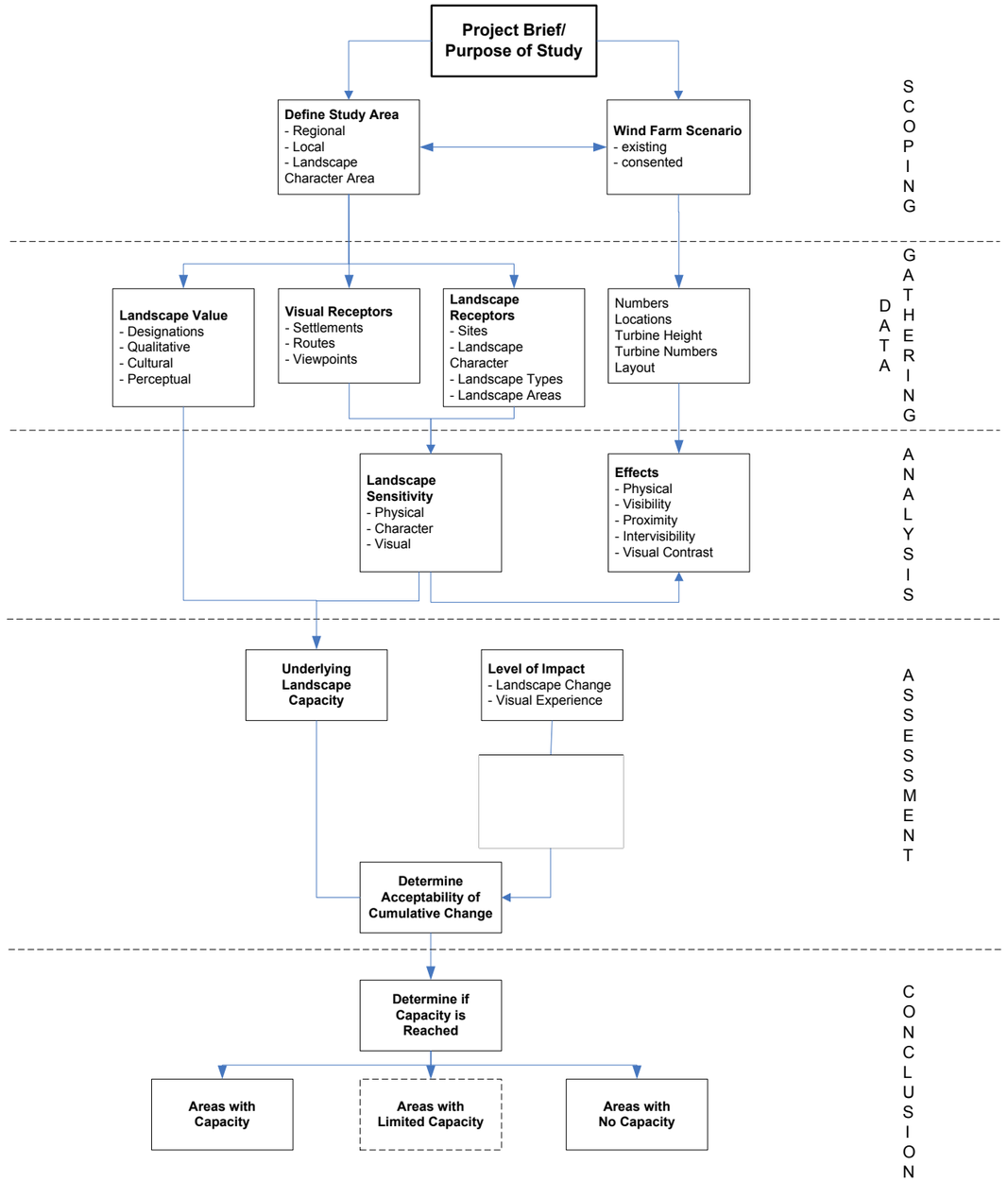
The assessment is a staged process comprising the following steps:

1) Define the study area and characterise the landscape and visual baseline and scope of wind energy development types to be included in the strategic study.
2) Assess landscape capacity based on landscape character types (LCTs) and landscape character areas (LCAs) in Orkney. This assessment considers landscape character sensitivity, visual sensitivity and landscape value.
3) Assess the capacity of the Orkney landscape to acceptably accommodate wind energy development of different types and scales based on the assessment of sensitivity and value of the LCTs and the LCAs on different islands. This is an assessment of the *underlying* landscape without taking the effects of existing wind turbines into account.
4) Record the current type and extent of consented wind energy development in Orkney i.e. both built and unbuilt developments with a planning consent.
5) Determine the extent to which cumulative consented development (both built and unbuilt) has occupied the underlying capacity of the landscape to accommodate wind energy developments.
6) Further to the assessment of landscape capacity and cumulative development, identify areas in which:

- there is no underlying landscape capacity for wind energy development;
- consented cumulative development limits landscape capacity for further wind energy development;
- there is remaining landscape capacity for wind energy development.

The assessment process is summarised as a flow chart in Figure 2.1 below.

Figure 2.1. Cumulative Impact and Landscape Capacity Methodology Flowchart



The assessment and spatial strategy is followed by guidance on appropriate types and levels of wind energy development for the areas in which there is remaining capacity.

2.3 Scope of Assessment

2.3.1 Area Covered

The study is carried out for the local authority area of Orkney, and includes all islands of the archipelago, with the exception of the outlying Sule Stack and Sule Skerry which lie some 50km to the west of the main islands.

2.3.2 Wind Energy Development Types

The study considers all sizes of turbines and developments operating, consented or proposed, as well as potential future scenarios where appropriate. Size categories used for this study are shown in Table 2.1.

Capacity assessment and guidance is provided for all turbine sizes. While small to medium size turbines of <30m blade to tip height do not have the same qualities of scale, prominence and widespread visibility of larger turbines, significant cumulative effects can result from their proliferation in settled lowland locations. Current Scottish Government energy policy is likely to result in continued pressure for further small scale developments in such locations.

Table 2.1. Turbine Size Categories in This Study

Size Category	Blade Tip Height	Typical Use
Small	Turbines less than 20m in height	Typically used for domestic schemes
Medium	Turbines 20m to <30m in height	Typically used for domestic and farm schemes
Medium / Large	Turbines 30m to <50m in height	Typically used for farm and industrial schemes
Large	Turbines 50m to <80m in height	Single turbine schemes (e.g. community turbines) and smaller turbines used in commercial schemes
Very Large	Turbines 80m to 125m	Typical turbines used in commercial windfarms but also on some single turbine schemes

2.4 Landscape and Visual Baseline

The landscape baseline assessment includes a description and classification of landscape character and record of designations and features that contribute to landscape value. The landscape character assessment is based on landscape character types (LCTs) in Orkney identified and described in the *Orkney landscape character assessment* (SNH, 1998) – see Section 3.2 and Table 3.1 below.

Landscape value is determined partly through landscape designations. Orkney includes a nationally designated National Scenic Area. Related designations that can contribute to landscape value and character are recorded. These include natural and cultural heritage designations, recreational / visitor facilities and recreational paths / cycle ways. Other factors affecting perceptions of value include relative wildness, which has recently been assessed across Scotland by SNH.

The visual baseline assessment involves a computer-based intervisibility assessment based on different turbine heights and receptor types. Whilst a simplistic approach, this helps to identify the areas that are most likely to be sensitive and areas in which wind turbines might be least visible.

2.5 Method for Determining Landscape Sensitivity and Capacity

The method for determining landscape sensitivity and capacity is detailed in **Appendix 2**. This involves consideration of the two main elements discussed in 2.4 above:

1) The sensitivity of the landscape fabric and character to turbine development, which includes landscape features, elements and characteristics and its visual sensitivity, including intervisibility and receptor types.
2) The value of the landscape as determined by stakeholders. This may include national or local recognition by landscape designation or cultural association, or value to a community of interest such as local residents or an interest group.

Appendix 2 describes a breakdown of the physical and perceptual characteristics that contribute to landscape character, visual sensitivity and value. Each criterion is described and evaluated in terms of its sensitivity to wind energy development. An overall assessment of **high, medium** or **low** is derived from a composite of all the criteria. There is no consistent relative weighting of criteria as, in the case of each landscape type or area, different criteria are likely to be critical in the sensitivity assessment.

Following the above assessment, an overall professional judgement on capacity for developments of different types is made on the basis of sensitivity and value. Landscape capacity is rated according to the degree to which wind turbines may be accommodated without significant and/or adverse effects on sensitivity and value. The descriptive criteria below for **high, medium** and **low** describe the main thresholds on a continuum between no capacity and high capacity.

Low Capacity: A landscape that is both sensitive to wind turbine development and has a high value, where only a slight level of change can be accommodated without significantly affecting any of the key defining criteria

Medium Capacity: A landscape that has some sensitivity to wind turbine development and has some aspects of value, where a moderate level of change can be accommodated which may significantly affect some of the defining criteria

High Capacity: A landscape that has low sensitivity to wind turbine development and has low value, and can accommodate change that significantly affects most of the key defining criteria

Broadly speaking there is an inverse relationship between landscape sensitivity/value and capacity. However, this is not a simple relationship that can be expressed in a matrix: a balance of judgement is made in each case as, for example, landscape value may be a more important factor than sensitivity in some cases; and vice versa in others.

Turbine height and the size and layout of types of turbine development may relate better to some LCTs than others and the geographical extent of LCAs within some otherwise suitable LCTs may limit capacity for development.

2.6 Defining Landscape Change and Cumulative Capacity

An understanding of cumulative impacts and change in the landscape is key to determining acceptable levels of development and whether or not areas have reached cumulative capacity. This is discussed below and in further detail in **Appendix 2**.

2.6.1 Cumulative Change

Appendix 2 Section 2.7 discusses in detail the issues involved in determining cumulative change thresholds and the acceptability of these changes. It refers to Scottish Government web based Guidance (2013) and SNH siting and design guidance (2009) for onshore wind energy developments. Key factors that affect the perception of cumulative change include:

- the distance between individual windfarms and/or turbines;
- the distance over which they are visible;
- the overall character of the landscape and its sensitivity to windfarms;
- the siting and design of the windfarms themselves (particularly turbine height and windfarm size); and
- the way in which the landscape is experienced.

In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail. The methodology therefore sets out defined levels of change to the landscape and visual environment that might occur or be experienced depending on the size, number and location of turbines to be built within an area.

The descriptions in Table 2.2 set out a gradated landscape typology that defines increasing levels of cumulative landscape and visual impact of turbines by describing their effect on landscape character and the experience of those living in or travelling through the landscape. These descriptions are used without prejudice as a tool to illustrate cumulative landscape change to all parties involved in planning wind energy development.

Further generic illustration of the concept is provided in Part 1 Section 5 of the SNH guidance (see guidance paragraphs 5.5 and 5.6 and illustrative sketches, also shown below Table 2.2). The extent of current and potential future wind turbine landscape types in Orkney is described in detail in chapter 6 and illustrated in Figures 6.2 and 6.3.

2.6.2 Determining Acceptable Levels of Change

The SNH siting and design guidance identifies three broad levels of cumulative change in the landscape that may be set by local authorities depending on landscape sensitivity and value and local policy objectives:

- **Landscape Protection:** Maintain existing landscape character.
- **Landscape Accommodation:** Accept a degree of change providing this does not fundamentally alter key landscape characteristics and visual resources.
- **Landscape Change:** Accept large amounts of change that may fundamentally alter key landscape characteristics and visual resources.

The descriptions in Table 2.2 provide a basis on which to understand and determine levels of change. However it is the collective decision of stakeholders in the planning process, including local authorities and their population, that ultimately determines the levels of cumulative landscape change, that are acceptable across their area, and thereby the capacity.

2.7 Presentation of Assessment and Findings

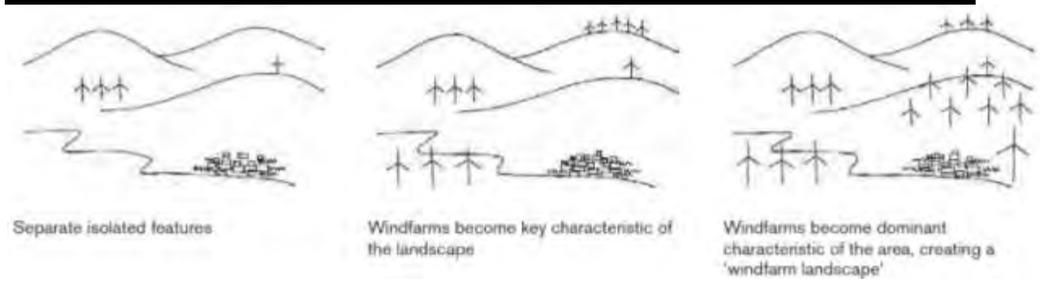
The study assessment and findings are presented in the following chapters:

Chapter 3: Landscape Baseline

This chapter defines and describes the study area, including the geographical extent and landscape character of Orkney. It also reviews other relevant information including landscape-related constraints, such as wildness, natural and cultural heritage designations.

Table 2.2: Description of Levels of Cumulative Wind Turbine Development

Landscape Type	Landscape Character	Visual Experience
Landscape with no Wind Turbines	A landscape type or area in which no, or a minimal number/size of wind turbines is present, or visible from neighbouring areas.	There would be no, or negligible, effects on visual receptors.
Landscape with Occasional Wind Turbines	A landscape type or area in which windfarms or wind turbines are located and/or are close to and visible. Turbines are not of such a size, number, extent or contrast in character that they become one of the defining characteristics of the landscape's character.	Visual receptors would experience occasional close-quarters views of a windfarm or turbines and more frequent background views of windfarms or turbines. Some of the turbines would not be perceived as being located in the landscape character type or area. No overall perception of wind turbines being a defining feature of the landscape.
Landscape with Wind Turbines	A landscape type or area in which a windfarm, windfarms or wind turbines are located and/or visible to such an extent that they become *one* of the defining characteristics of the landscape character. However, they are clearly separated and not the single most dominant characteristic of the landscape.	Visual receptors would experience frequent views of windfarms or wind turbines as foreground, mid-ground or background features, affecting their perception of the landscape character. However there would be sufficient separation between windfarms and turbines and sufficient areas from which wind turbines are not visible such that they would not be seen as dominating the landscape over all other landscape features.
Wind Turbine Landscape	A landscape type or area in which windfarms or wind turbines are extensive, frequent and nearly always visible. They become the dominant, defining characteristic of the landscape. Nevertheless there is a clearly defined separation between discrete developments.	Visual receptors would experience views of windfarms and wind turbines as foreground, mid-ground and background features, to the extent that they are seen as the most dominant aspect of landscape character. Few areas would be free of views of wind turbines, although groupings would appear separated.
Windfarm	Landscape fully developed as a windfarm with no clear separation between groups of turbines. Few if any areas where turbines not visible.	Visual receptors would always be close to and nearly always in full view of wind turbines, with no clear separation between groups of turbines.



Illustrations from SNH Siting and Design of Windfarms in the Landscape (2009)

The assessment of landscape capacity and cumulative landscape change is based on the SNH Orkney landscape character assessment. This assessment divides the landscape into Landscape Character Areas (LCAs) of twenty three Landscape Character Types (LCTs) identified in the study. Baseline assessments of landscape sensitivity specifically with respect to wind energy are provided for each of the landscape character types in Appendix 3. The information in Chapter 3 informs the subsequent assessment of landscape capacity detailed in Chapter 6.

Detailed review or refinement of landscape character types and their boundaries is not within the scope of this study, but some observations are included where relevant to the assessment.

Chapter 4: Visual Baseline

This chapter details the analysis carried out to establish the relative visibility and visual sensitivity of different parts of Orkney. This involves a computer-based intervisibility assessment based on different turbine heights and receptor types. The resulting maps are shown in **Appendix 4.**

The information in Chapter 4 informs the assessment of landscape capacity as detailed in Chapter 6.

Chapter 5: Wind Turbines in the Study Area

This chapter describes the operating, consented and proposed wind turbine developments in the study area at July 2013. There is a detailed breakdown of numbers and sizes of turbines and windfarms in Orkney. Locations of turbines are illustrated in Figure 5.1. There is also an analysis of turbine size ranges and distribution in relation to landscape character.

Appendix 5 reviews the factors involved in wind turbine location, size, design and distribution that affect landscape, visual and cumulative impacts.

Details of individual developments are given in **Appendix 6.**

Chapter 6: Assessment of Landscape Capacity and Cumulative Change

This chapter analyses and assesses the information in the previous chapters to determine the landscape and visual impacts of, and capacity for, wind energy development across Orkney, island by island. The assessment is summarised in **Tables 6.2a-n** and **Figures 6.1 to 6.3.** The capacity assessment is informed by the detailed assessment of landscape sensitivity and value for each landscape character type**,** and generic assessments of capacity for wind energy developments for each of the twenty two rural landscape character types, shown in **Appendix 3**. The assessment informs the subsequent spatial strategy and includes guidance on turbine size and distribution. Further details of how to use Table 6.2 together with the figures are given at the start of Chapter 6.

The capacity assessment and current cumulative change for each of the islands is then combined to come to an assessment of capacity and cumulative effects for the whole of Orkney.

Further spatial and design guidance for locating wind turbines in areas with residual capacity for further development and areas with restricted capacity is given in Chapter 6, with generic guidance for each LCT provided in Appendix 3.

2.8 Detailed Guidance

Appendix 3 also gives guidance on appropriate turbine sizes, cluster sizes and separation between groups of turbines for each LCT. Chapter 6 applies the generic LCT guidance to LCAs on each of the individual islands, providing further detail of the proposed acceptable level of cumulative development in LCAs and the island as a whole.

Appendix 5 of this report contains detailed discussion of how turbine size, group size and group separation affects perceptions of wind energy and landscape character. Further guidance is given in SNH publications *Siting and Designing windfarms in the landscape* and *Siting and Design of Small Scale Wind Turbines of between 15 and 50m in height*. Chapter 6 also briefly outlines the main considerations in developing the specific guidance.

2.9 Potential Opportunities and Constraints

The main spatial findings of the detailed assessment are summarised on a map in **Figure 6.4.** This shows the distribution of the following areas:

- Areas with significant underlying landscape capacity;
- Areas with limited underlying landscape capacity;
- Areas with no underlying landscape capacity;
- Areas with underlying capacity which is limited by cumulative development (which may overlap with parts of some or all of the above areas); and
- Areas of potential future strategic wind energy development.

Finally it is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as protection of wildlife, proximity to dwellings, aviation restrictions or lack of grid connection. These issues are not the subject of this assessment.

2.10 How to Use this Report

2.10.1 For All Sizes of Development

The main purpose of this report is to inform strategic decision making on the acceptability of different scales of wind energy development within the landscape of Orkney, and to provide guidance on the acceptable size, groupings, spacing and siting of turbines to avoid unacceptable cumulative landscape effects.

In the case of specific turbine developments, this report can be used to understand the likely acceptability of such a development in landscape terms depending on the degree to which it conforms to the guidance provided. A staged process to using this report in such a case would be:

- Establish the scale of the proposals in terms of the number of turbines, turbine sizes and type, layout, height, location and relationship to natural and manmade features in the landscape such as buildings, roads, field boundaries, landform and vegetation.
- Identify the island Landscape Character Area (LCA) of the development, and neighbouring character areas if nearby, as shown on Figure 3.3, and at the start of the island assessments provided in Section 6.
- Identify the underlying sensitivity and capacity for the LCA(s). The generic capacity for the Landscape Character Type (LCT) is provided in Appendix 3 and summarised in Section 6 and Table 6.2, which also highlights island specific variations in sensitivity and capacity. Figure 6.4 can be used to quickly determine whether the site falls into an area of particular capacity or constraint.
- Establish the residual capacity of the LCA based on the existing and proposed *Wind Turbine Landscape Types* shown in Figures 6.2 and 6.3, the proximity to consented turbine developments (Figure 5.1), and the assessment in Section 6.
- Determine whether the recommended separation distances identified in Table 6.2 can be maintained. The guidance in Section 6.2.3 should be referred to in the case of proximity to different size turbines and across LCAs.
- Determine whether the proposals conform to the heights, groups sizes and siting guidance provided in Section 6 and Table 6.2, and how the proposals relate to any sensitive aspects of the LCA(s).

2.10.2 For Small Turbines (<20m)

The guidance provided in Section 2.10.1 is applicable to turbines of all sizes including those <20m, and can be used to identify in broad terms where capacity for developments <20m may exist, likely acceptable group sizes and separation distances. There are however particular characteristics of small turbine developments which are important to the way they are perceived and their ability to be acceptably absorbed into a landscape.

In comparison to turbines greater than 20m, small turbines are more diverse in their design with more varied forms, colours, blade configurations, rotation speeds and rotation directions. Small turbines are likely to be sited within landscapes already including significant amounts of built development with which turbines would be seen, such as roads, houses, farm buildings, pylons or other turbines. The scale of the turbines means that their visibility is much more likely to be influenced by local topography, vegetation or other built development.

The following guidance is provided in addition to the process outlined in Section 2.10.1 when considering the likely acceptability of <20m turbines in the landscape:

- The type and style of the proposed turbine(s) should be considered in relation to those existing (or consented) that will be seen with the development to avoid visual incoherence caused when different styles of turbines are seen within the same view. The coherence of a group of similar turbines can easily be disrupted by the introduction of a differently styled turbine into a view.
- From important viewpoints care should be taken to avoid small turbines being back-grounded by larger more distant turbines, as this can cause confusion about turbine scales and their relationship to the landscape.
- For turbines <20m there may be more opportunities for topography, buildings and trees to provide screening and prevent intervisibility between developments, which may allow a reduction in the recommended separation distances. However care should be taken to avoid unacceptable sequential effects, for example from multiple developments being seen when travelling along a linear route such as a road or path.
- The size and lowland locations of most <20m turbines means that they may benefit from backclothing more often than larger upland developments, and their restricted visual influence may provide more certainty about the conditions against which they will be viewed. In this case turbines coloured to minimise contrast against their background may be an effective mitigation.
- Turbines <20m are most likely to appear rational in the landscape when they are seen to have a relationship with an associated energy user, be it a house, farm, infrastructure or an industrial development. The relationship should be such that the turbine(s) are not seen to be dominant or overbearing. Isolated small turbines, with no apparent rationale, should be avoided.
- Groups of turbines of all scales should be arranged to correspond to the predominant pattern of the landscape within which they will be seen. In lowland locations manmade features are most likely to define the landscape pattern, and it is likely that small turbines are best aligned to the pattern of roads, tracks, walls and field boundaries.

Further guidance is provided in the SNH publication *Siting and design of Small Scale Wind Turbines of between 15 and 50 metres in height (2012)*.

Conformance or otherwise to the guidance provided in this report does not comprise a definitive assessment of the acceptability of the project in landscape terms. Conditions local to development proposals will have a strong influence on the acceptability of an individual development and this guidance is not a substitute for a project specific landscape and visual impact assessment.

3.0 LANDSCAPE BASELINE

The following section defines and describes the study area, including the geographical extent and landscape character of Orkney. It also reviews other relevant information including landscape-related designations, natural and cultural heritage constraints. In the latter case it is the extent to which they may have a bearing on landscape character and value that is the primary consideration in this study.

3.1 Study Area

The study area for this assessment is shown in Figure 3.1. The southernmost of the Orkney Isles lies approximately 10km to the north of the Scottish mainland, separated by the Pentland Firth. The Orkney archipelago comprises approximately 70 islands, of which 20 are inhabited. The archipelago extends 60km from east to west, and 80km from north to south, the islands are separated by numerous channels and firths, with a total land area of 990km^2. The islands have a population of approximately 20,000, the most populous and largest island being Mainland, which includes the capital Kirkwall.

Mainland can be divided into West and East Mainland, with Kirkwall situated on the isthmus between the two land areas. The islands of Burray and South Ronaldsay lie to the south of East Mainland, connected by a series of causeways and small holms.

Hoy and the other South Isles of Flotta and Graemsay lie to the south of West Mainland. The islands of Mainland, Hoy, South Ronaldsay and Burray enclose the vast natural harbour of Scapa Flow.

A short distance north of Mainland is Shapinsay, and the island grouping of Rousay, Egilsay and Wyre, which comprise the Inner North Isles. Further north are the main Outer North Isles of Westray, Stronsay, Eday and Sanday, with the smaller islands of Papa Stronsay, Papa Westray and North Ronaldsay the smallest of the populated islands in this northern group.

The islands include the Hoy and West Mainland National Scenic Area (NSA), one of only 40 in Scotland, and the Heart of Neolithic Orkney World Heritage Site on West Mainland.

The study focuses on the 14 largest of the inhabited islands, but the consideration is given to all parts of the local authority area, with exception of the remote Sule Stack and Sule Skerry located well to the west of the main Orkney islands. The Scottish mainland lies approximately 10km to the south of Orkney, and while wind developments in the north Scottish coast could potentially have an influence on Orkney, and vice versa, the two areas are distinctly separate and cumulative effects arising because of intervisibility of developments within the two local authority areas are considered insignificant.

The potential influence of offshore wind developments is outside the scope of this study.

3.2 Baseline Landscape Character Assessment

3.2.1 Landscape Context

The islands of Orkney are predominantly low lying, smooth and gently sloping. Islands range in size from the smallest holms less than 1km in length to Mainland Orkney, extending approximately 30km north to south and 40km east to west and comprising 20% of the archipelago land area. Trees and woodland are largely absent, accentuating the smooth contours of the islands. Areas of higher ground are found on the moorland hills of the larger islands, in particular West Mainland and Hoy, with the highest point on the islands, at 479m, found in the more rugged glaciated hills of northern Hoy. The dramatic high cliffs of the western coastline rise to 350m at St John's Head, Hoy, contrasting with the less dramatic coast and the low lying loch basins and bays found on the islands further east.

With the exception of the more elevated areas of moorland hills and heath, much of the lower lying and coastal landscapes are in productive agricultural use, often comprising improved pasture for cattle and sheep, with significant arable production.

The level of development of the islands provides the impression of a generally populated and productive rural landscape. Outside the main population centres of Kirkwall and Stromness, low density settlement is widespread in the form of small farms and individual dwellings, with the occasional small village or hamlet.

Large scale industry is mostly absent, however the east coast of Hoy, near Lyness, and the island of Flotta have historically been the site of twentieth century military based industrial development. The naval facilities closed in the post war period, but during the 1970s the Flotta oil terminal was developed. The development was designed sensitively to sit unobtrusively within the landscape, however the terminal is still a strong influence on the character of eastern Hoy, Flotta, and neighbouring islands, and makes south west Scapa Flow Orkney's most industrialised landscape. More widely, wind energy production at a variety of scales has become a feature of the Orkney landscape in recent years.

Orkney is renowned for its Neolithic archaeological sites, the most important of which are protected as the Heart of Neolithic Orkney World Heritage Site. The landscape context of these sites is thought often to have been significant to their original siting, and is also important in how the sites are experienced today. More recent history is evidenced by the numerous wartime structures found throughout the islands, and particularly around Scapa Flow.

The *Orkney landscape character assessment (SNH 1998)* describes the Orkney landscape in detail and serves as a basis for landscape related policy making and planning decisions, as described in *the Orkney Local Plan (2004)* and *Orkney Structure Plan (2001).*

3.2.2 Landscape Character

Table 3.1 and Figure 3.3 define the landscape in more detail. There are a total of twenty three landscape character types identified in the *Orkney landscape character assessment*

(SNH, 1998), areas of which are found throughout the archipelago. The twenty two rural character areas are the subject of this study, the twenty third being *Urban and Rural Development* and urban in character. Landscape character types and the islands in which they are present are summarised in Table 3.1.

The following descriptions are an overview of the landscape character types. These broad groupings are not provided in the SNH landscape character assessment, however they are provided to allow a general overview of Orkney landscape character. It is important to acknowledge that there is a degree of overlap between many of the LCTs and LCAs, particularly due to the pervasive influence of agriculture and scattered settlement throughout Orkney. Full descriptions of the individual LCTs are provided in the *Orkney landscape character assessment.*

Island Landscapes

Landscape character types (LCT) *Holms* and *Whaleback Island Landscapes* often encompass the entirety of the landscape of smaller islands i.e. there are no other landscape character types present on the islands. *Holms* are the smallest of the islands found throughout Orkney except at the extreme western and northern edges. Islands are less than 2km in length, uninhabited, with smooth domed topography and occasional lighthouses or other maritime navigational aids.

Whaleback Island Landscapes, when comprising the entirety of an island landscape, are larger than *Holms* and sometimes with a sparse population and some development, but similar in shape and profile to *Holms*. South Walls is the most developed and largest example of this LCT. In one instance on Burray this LCT is a component of a larger landmass with other LCTs.

Ridgeline Island Landscapes are the largest scale of the three island landscape types, found on the islands of Shapinsay, Westray, Papa Westray and Stronsay. Ridgeline Island landscapes are elongated and narrow, with a low ridge running along their length. These landscapes include small scale farming and settlement, often with strong patterns of rectilinear fields sloping towards the coast.

Pastures

Orkney includes several pastoral landscape character types, sharing similarities of pattern and scale, but distinguishable by their particular island contexts, relationship to the coast, and variations in landform. *Low Island Pastures* are farmed landscapes commonly found in low lying coastal areas of the northern islands and East Mainland. This LCT often includes exposed coastal headlands and promontories. *Undulating Island Pasture* is similar in character, occurring in similar situations, but with a more pronounced undulating topography and sometimes low hills. *Inclined Coastal Pastures* are areas of sloping farmland found on narrow coastal strips, typically with higher moorland to the rear. This LCT is found on the fringes of many of the hillier islands. *Coastal Granite Pastures* are unique to the hilly farming landscape found at Stromness in West Mainland, while the flat *Coastal Plains* are found in only one location close to Kirkwall Airport.

Hills, Hill Fringes and Uplands

Moorland Hills are found in the interior of the hillier, larger islands of Hoy and Mainland, and also the smaller islands of Rousay and Eday. This LCT includes large tracts of sparsely developed, unenclosed rough grassland and heath, and is found at the highest points of the islands. An exception to this is on Hoy where the rugged landscapes of *Glaciated Hills,* and associated *Glaciated Valleys,* at the northern end of the island, include the highest points in Orkney. Upland landscapes at lower elevations are found in South Ronaldsay, East Mainland, Shapinsay and Stronsay, characterised by *Plateau Heaths and Pasture*. Found largely on West Mainland but also on small areas of Hoy, *Rolling Hill Fringe* transitions between the unenclosed uplands and the more settled lowland farming landscapes. *Isolated Coastal Knolls* occur in only two locations on the east coast of West Mainland; rounded low hills standing separate from the *Moorland Hills* further inland, in prominent coastal locations amongst lowland pastures.

Basins

Low lying *Coastal Basins* are found mainly on Mainland and South Ronaldsay, but also in small areas of Stronsay and Eday. These landscapes are flat, open, and enclosed by higher ground to landward, often including wetlands and other waterbodies. These are settled, productive agricultural landscapes. Similar in character are *Loch Basins* found in inland areas dominated by waterbodies. The largest area of this LCT is found in west Mainland and is the setting to the 'Heart of Neolithic Orkney' World Heritage Site. *Peatland Basins* are found in both upland and lowland locations but are largely undeveloped, unenclosed, and support few productive land uses other than peat cutting.

Coastal Landscapes

Orkney has a varied coastline, ranging from dramatic high cliffs to enclosed sandy bays. The most dramatic and wild coastal landscapes are those of the *Cliff Landscapes* found most extensively on the west coast of Mainland, Hoy, Westray, with *Coastal Hills and Heaths* often providing an undeveloped hilly hinterland. In contrast, towards the more sheltered parts of east Orkney and in particular on Sanday are found low coastlines of extensive sandy beaches and dunes. Dotted around the archipelago are sheltered *Enclosed Bay Landscapes* of sand or shingle, sometimes popular for recreation.

Islands and Seascape

In considering any part of the Orkney landscape it is also important to consider the role of the sea and neighbouring islands in providing a broader context contributing to the character of landscape types and islands as a whole.

Whereas the remotest and smallest islands such as North Ronaldsay lie within a wide open sea context, the majority of the islands are separated by relatively narrow channels or slightly wider firths. In these locations higher ground or an extensive landmass on one island can influence the landscape of a neighbour, but also the separating stretch of sea can provide a wider-scale more open context than might be the case in a single landmass.

There are two defining examples:

- The Neolithic World Heritage site on West Mainland, where the containing effects of the surrounding hills on the island act together with the more dramatic Hoy Hills seen on the horizon to the southwest; and
- The vast natural harbour of Scapa Flow which, although a significant stretch of sea, is entirely surrounded by islands which provide a degree of visual containment. In this case the open water adds scale and distance to the landscape, with the several surrounding islands seen almost as a single enveloping coastline.

3.3.2 Local Landscape and Landscape Related Designations

There are no current local landscape designations such as Special Landscape Areas or Areas of Great Landscape Value found in other parts of Scotland.

The only other landscape designation found in Orkney are sites on the Inventory of Gardens and Designed Landscapes. There are three sites on the inventory: Melsetter, Skaill and Balfour. Planning policy looks to preserve and enhance these gardens and designed landscapes as well as their setting. Their presence is an indicator of landscape value, the character of which may be sensitive to development in their wider setting.

3.4 Other Designations

There are a number of designations that, whilst not solely landscape related, clearly indicate landscape value and inform the assessment process. These are shown in Figures 3.4 and 3.5.

3.4.1 Historic and Cultural Designations

There are a number of designated cultural heritage sites within Orkney where existing planning policies in the Orkney Local Development Plan and associated Supplementary Guidance protect the sites and their setting. The Heart of Neolithic Orkney World Heritage Site comprises several monuments – Maeshowe, Skara Brae, the Stones of Stenness (with the Watch Stone and Barnhouse Stone) and the Ring of Brodgar, together with numerous adjacent standing stones and burial mounds. Supplementary Planning Guidance identifies Inner Sensitive Zones of the World Heritage Site and looks to preserve and enhance the 'outstanding universal value' of the site and its wider landscape setting.

Scheduled Monuments (SAMs) are primarily a historic or archaeological designation. However they can be of landscape significance in their own right and contribute to the character and value of a landscape. Furthermore, the character of these sites may be sensitive to development affecting their landscape setting. There are numerous SAMs scattered throughout Orkney, testimony to the rich cultural heritage of the islands: from Neolithic chambered cairns and Iron Age brochs to sites from the First and Second World Wars.

Table 3.1. Landscape Character Types by Island in Orkney (SNH Orkney Assessment, 1998)

Landscape Character Type	Islands Locations
1. Holms	*Numerous small islands throughout the archipelago*
2. Whaleback Island Landscapes	*South Walls; Burray; Egilsay; Gairsay; Wyre; Fara; Graemsay; Faray; Fara*
3. Ridgeline Island Landscapes	*Shapinsay; Stronsay; Westray; Papa Westray*
4. Low Island Pasture	*Flotta; East Mainland; Stronsay; Eday; Sanday; Westray; North Ronaldsay.*
5. Undulating Island Pasture	*East Mainland; Sanday; Westray*
6. Coastal Plain	*East Mainland*
7. Coastal Basin	*East Mainland; West Mainland; Burray; South Ronaldsay; Rousay; Eday; Stronsay*
8. Inclined Coastal Pasture	*East Mainland; West Mainland; Hoy; South Ronaldsay; Burray; Rousay; Stronsay; Eday*
9. Coastal Granite Pastures	*West Mainland*
10. Isolated Coastal Knolls	*East Mainland*
11. Enclosed Bay Landscapes	*Hoy; West Mainland; Eday*
12. Coastal Hills and Heath	*West Mainland; Rousay; Westray*
13. Cliff Landscapes	*Hoy; South Ronaldsay; East Mainland; West Mainland; Westray*
14. Coastal Sand Landscapes	*South Ronaldsay; Burray; Eday; Sanday; North Ronaldsay*
15. Peatland Basins	*East Mainland; West Mainland; Rousay; Eday*
16. Loch Basins	*West Mainland; Rousay; Stronsay; Westray*
17. Low Moorland	*Flotta; South Ronaldsay; East Mainland; Stronsay; Papa Westray*
18. Plateau Heaths and Pasture	*South Ronaldsay; East Mainland; Rousay; Stronsay*
19. Rolling Hill Fringe	*Hoy; West Mainland*
20. Moorland Hills	*Hoy; West Mainland; Rousay; Eday*
21. Glaciated Valley	*Hoy*
22. Glaciated Hills	*Hoy*
23. Urban and Rural Development	*Flotta; South Ronaldsay; Burray; Kirkwall; Finstown; Pierowall*

Of Orkney's six Conservation Areas two are rural areas (Brodgar / Stennes and Eynhallow) with the others being urban in nature (Kirkwall, Stromness, Balfour Village and St Margaret's Hope). Their setting in the landscape is integral to their character.

Listed buildings contribute to the landscape character in terms of their value and setting. They are found throughout Orkney with the greatest concentration found within settlements and some of the smaller islands such as North Ronaldsay. The siting of wind energy development should be sensitive to their qualities and setting.

3.4.2 Nature Conservation Designations

Orkney includes areas of international, national and local natural heritage designations which include RAMSAR sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSI) and Local Nature Conservation Sites. These contribute to the character and value of the landscape throughout Orkney.

3.5 Wildness Mapping

SNH's wild land policy (Policy Statement No. 02/03) recognises the importance both of wild land in Scotland's countryside and to perceptions of wildness to society. The policy also notes the potential for development to erode the extent of wild land and perceptions of wildness in other areas.

SNH has recently completed a mapping exercise in which the factors that contribute to wildness in a landscape have been combined and mapped to create a detailed picture of wildness on a relative scale (*Relative Wildness Throughout Scotland, January 2013*).

Forty two Wild Land Areas have been identified across Scotland, based on the assessment of wildness (*Mapping Scotland's Wildness, SNH, 2013*). The Scottish Government's NPF3, published in June 2014, recognises wild land as a "nationally important asset", and indicates Scotland's wildest landscapes merit strong protection.

One Wild Land Area is included on Hoy. Other areas with high 'relative wildness' include the upland areas of *Moorland Hills* and *Cliff Landscapes* of the western coastline, and *Holms* scattered throughout the archipelago.

Figure 3.6 of this report shows relative wildness in Orkney. This information is used to identify areas with the highest wildness qualities in the study area and informs the assessment of landscape value of landscape character areas.

3.6 Other Relevant Matters

Other areas of interest which contribute to landscape value include walking trails, cycle routes, viewpoints, golf courses, picnic sites or other sites of interest identified on Ordnance Survey mapping. These sites are taken into account in the assessment of value, and have been used as viewpoints for the assessment of visual sensitivity, and are shown in Figure 4.1.

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Figure 3.1

Study Area

N

0 5 10 20 Km

Legend

- Study Area
- Settlements
- Lochs
- Landscape Character Areas

Elevation

- 450 - 500mAOD
- 400 - 450mAOD
- 350 - 400mAOD
- 300 - 350mAOD
- 250 - 300mAOD
- 200 - 250mAOD
- 150 - 200mAOD
- 100 - 150mAOD
- 50 - 100mAOD
- 0 - 50mAOD

Code	Landscape Character Type
ISLD	Coastal Island
LOCH	Inland Loch
LOCH_ISLD	Loch Island
ORK1	Holms
ORK2	Whaleback Island Landscapes
ORK3	Ridgeline Island Landscapes
ORK4	Low Island Pastures
ORK5	Undulating Island Pasture
ORK6	Coastal Plain
ORK7	Coastal Basins
ORK8	Inclined Coastal Pastures
ORK9	Coastal Granite Pastures
ORK10	Isolated Coastal Knolls
ORK11	Enclosed Bay Landscapes
ORK12	Coastal Hills and Heath
ORK13	Cliff Landscapes
ORK14	Coastal Sand Landscapes
ORK15	Peatland Basins
ORK16	Loch Basins
ORK17	Low Moorland
ORK18	Plateau Heaths and Pasture
ORK19	Rolling Hill Fringe
ORK20	Moorland Hills
ORK21	Glaciated Valley
ORK22	Rugged Glaciated Hills
ORK23	Urban and Rural Development

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Figure 3.2

Topography

N

0 5 10 20 Km

Legend

Study Area

Code - Landscape Character Type

- ISLD - Coastal Island
- LOCH - Inland Loch
- LOCH_ISLD - Loch Island
- ORK1 - Holms
- ORK2 - Whaleback Island Landscapes
- ORK3 - Ridgeline Island Landscapes
- ORK4 - Low Island Pastures
- ORK5 - Undulating Island Pasture
- ORK6 - Coastal Plain
- ORK7 - Coastal Basins
- ORK8 - Inclined Coastal Pastures
- ORK9 - Coastal Granite Pastures
- ORK10 - Isolated Coastal Knolls
- ORK11 - Enclosed Bay Landscapes
- ORK12 - Coastal Hills and Heath
- ORK13 - Cliff Landscapes
- ORK14 - Coastal Sand Landscapes
- ORK15 - Peatland Basins
- ORK16 - Loch Basins
- ORK17 - Low Moorland
- ORK18 - Plateau Heaths and Pasture
- ORK19 - Rolling Hill Fringe
- ORK20 - Moorland Hills
- ORK21 - Glaciated Valley
- ORK22 - Rugged Glaciated Hills
- ORK23 - Urban and Rural Development

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Figure 3.3

Landscape Character Types

N

0 5 10 20 Km

Legend

- Study Area
- Listed Buildings
- Wild Land Area
- National Scenic Area
- Special Areas of Conservation
- Ramsar Sites
- Gardens and Designed Landscapes
- Scheduled Ancient Monuments
- Sites of Special Scientific Interest
- Landscape Character Areas

Code	Landscape Character Type
ISLD	Coastal Island
LOCH	Inland Loch
LOCH_ISLD	Loch Island
ORK1	Holms
ORK2	Whaleback Island Landscapes
ORK3	Ridgeline Island Landscapes
ORK4	Low Island Pastures
ORK5	Undulating Island Pasture
ORK6	Coastal Plain
ORK7	Coastal Basins
ORK8	Inclined Coastal Pastures
ORK9	Coastal Granite Pastures
ORK10	Isolated Coastal Knolls
ORK11	Enclosed Bay Landscapes
ORK12	Coastal Hills and Heath
ORK13	Cliff Landscapes
ORK14	Coastal Sand Landscapes
ORK15	Peatland Basins
ORK16	Loch Basins
ORK17	Low Moorland
ORK18	Plateau Heaths and Pasture
ORK19	Rolling Hill Fringe
ORK20	Moorland Hills
ORK21	Glaciated Valley
ORK22	Rugged Glaciated Hills
ORK23	Urban and Rural Development

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Figure 3.4

Natural and Cultural Heritage Designations (1 of 2)

N

0 5 10 20 Km

Legend

- Study Area
- WHS Inner Sensitive Zone
- WHS Potentially Sensitive Area
- Open Space
- Conservation Areas
- Local Nature Conservation Sites
- Landscape Character Areas

Code	Landscape Character Type
ISLD	Coastal Island
LOCH	Inland Loch
LOCH_ISLD	Loch Island
ORK1	Holms
ORK2	Whaleback Island Landscapes
ORK3	Ridgeline Island Landscapes
ORK4	Low Island Pastures
ORK5	Undulating Island Pasture
ORK6	Coastal Plain
ORK7	Coastal Basins
ORK8	Inclined Coastal Pastures
ORK9	Coastal Granite Pastures
ORK10	Isolated Coastal Knolls
ORK11	Enclosed Bay Landscapes
ORK12	Coastal Hills and Heath
ORK13	Cliff Landscapes
ORK14	Coastal Sand Landscapes
ORK15	Peatland Basins
ORK16	Loch Basins
ORK17	Low Moorland
ORK18	Plateau Heaths and Pasture
ORK19	Rolling Hill Fringe
ORK20	Moorland Hills
ORK21	Glaciated Valley
ORK22	Rugged Glaciated Hills
ORK23	Urban and Rural Development

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Figure 3.5

Natural and Cultural Heritage Designations (2 of 2)

N

0 5 10 20 Km

Legend

- Study Area
- Lochs
- Landscape Character Areas

Level of Wildness

High

Low

Code	Landscape Character Type
ISLD	Coastal Island
LOCH	Inland Loch
LOCH_ISLD	Loch Island
ORK1	Holms
ORK2	Whaleback Island Landscapes
ORK3	Ridgeline Island Landscapes
ORK4	Low Island Pastures
ORK5	Undulating Island Pasture
ORK6	Coastal Plain
ORK7	Coastal Basins
ORK8	Inclined Coastal Pastures
ORK9	Coastal Granite Pastures
ORK10	Isolated Coastal Knolls
ORK11	Enclosed Bay Landscapes
ORK12	Coastal Hills and Heath
ORK13	Cliff Landscapes
ORK14	Coastal Sand Landscapes
ORK15	Peatland Basins
ORK16	Loch Basins
ORK17	Low Moorland
ORK18	Plateau Heaths and Pasture
ORK19	Rolling Hill Fringe
ORK20	Moorland Hills
ORK21	Glaciated Valley
ORK22	Rugged Glaciated Hills
ORK23	Urban and Rural Development

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Figure 3.6

Relative Wildness

N

0 5 10 20 Km

4.0 VISUAL BASELINE

The following section details the analysis that was carried out to establish the relative visibility and visual sensitivity of different parts of Orkney.

4.1 Visual Receptors

In a study of landscape capacity and cumulative landscape impacts, it is important to consider visibility, and the effects of cumulative impact on visual receptors. This not only feeds into the assessment of landscape sensitivity and capacity (see Section 2.2), but also builds up a picture of how visual receptors in and around Orkney might perceive wind turbines within the Orkney landscape.

The types of potentially sensitive visual receptors within Orkney are broadly categorised into three groups, represented by the following locations:

- Residential receptors, represented by postal code addresses;
- Routes, representing travelling receptors, and including roads, ferry routes, long-distance footpaths and cycle routes;
- Viewpoints, representing visitors, selected from popular walking destinations, visitor attractions, and viewpoints identified on OS maps.

The locations of residential receptors, routes, and viewpoints are illustrated on Figure 4.1.

Whilst there are workplace receptors in Orkney, these have not been included, as it is common practice in Landscape and Visual Impact Assessment (LVIA) that people at work are considered to be low sensitivity visual receptors.

4.2 Visibility Analysis

An assessment of visibility was made from the residential receptors, routes and viewpoints illustrated in Figures 4.1. This was carried out using a computer based technique in which the intervisibility between receptors and landforms, or objects of specific heights on the landforms, is determined. The more intervisibility, the greater the visual sensitivity is likely to be. The method is described in more detail in **Appendix 2.**

The extent of the visibility assessment was generally a 15km radius from the receptors. In our experience this is the distance within which the great majority of significant impacts from wind farms or large turbines are likely to occur. Whilst it is recognised that impacts occur beyond this distance (up to 35km and beyond in EIA best practice) the results are considered to adequately distinguish between locations of potentially greater or lesser sensitivity.

Results of the visibility analysis are illustrated in Figures 4.2 to 4.4 (in **Appendix 4**). The colours show the differences in indicative visual sensitivity across Orkney. Red colours indicate areas that are most visible from the greatest numbers of receptors, grading through orange, yellow and green to blue areas that are seen by fewest receptors and uncoloured areas that would not be seen at all.

4.2.1 Residential Receptors

Figure 4.2 shows indicative visual sensitivity from residential receptors defined by gazetteer address data. As may be expected, sensitivity to visibility from residential receptors is strongly related to the patterns of population within the islands. The most visually sensitive locations are therefore the high points of the *Moorland Hills* to the east of West Mainland which are in the vicinity of the large population centre of Kirkwall. More moderate levels of sensitivity are found on land surrounding Wide Firth to the north west of Kirkwall, including the west coast of Shapinsay. There is also a moderate level of sensitivity to developments around Stromness, also a reflection of its relatively high population. The majority of the land area of Orkney has a relatively low visual sensitivity from residential receptors.

4.2.2 Transport Routes

Figure 4.3 shows indicative visual sensitivity from routes, including roads, the National Cycle Network Route 1 and ferries. West Mainland and Kirkwall have the highest density of roads in Orkney, and therefore much of West Mainland and in particular the *Moorland Hills* have high sensitively. Other sensitive areas include the open flat landscape of Shapinsay, visible from West Mainland and passing ferry routes; parts of the South Isles around Scapa Flow including Flotta and Burray; and some of the more elevated areas of Rousay and Eday.

Areas of lower sensitivity include the more remote Outer North Isles, particularly the lower lying areas, and large parts of Hoy which lack roads and are often screened from view by landform.

4.2.3 Viewpoints

Figure 4.4 shows indicative visual sensitivity from viewpoints selected for this study. On the basis of these the most visually sensitive areas are the summits of the *Moorland Hills* on West Mainland. This sensitivity is a reflection of their central, elevated location in Orkney and so their proximity to a relatively high number of viewpoints.

Other sensitive areas include the large *Loch Basin* of West Mainland, and Scapa Flow coast including the east coast of Hoy, the west coast of South Ronaldsay, and the south coast of West Mainland. This is a reflection of the openness of the landscape/seascape as well as the presence of viewpoints associated with the World Heritage Site.

Areas tend to be less sensitive to views from viewpoints when the landscape is more enclosed / topographically screened, and in more remote locations. These less sensitive areas include the remote west coast of Hoy, North Ronaldsay, and the enclosed basin landscape types, for example the *Coastal Basins* of West Mainland, Rousay.

4.2.4 Analysis of Visibility

The visibility analysis confirms some empirical observations of visual sensitivity across Orkney but provides a more nuanced assessment, determining which geographical areas are the most and least visually sensitive.

Lack of trees and the infrequency of development means that Orkney is an open landscape, where 'bare earth' computer based assessments undertaken for this study are a good representation of visibility conditions on the ground.

Upland areas tend not to be extensive and the widely settled landscape of the islands mean these upland areas are often visually sensitive. The lower lying landscapes of the less populated islands, particularly the Outer North Isles, have a low visual sensitivity because of a relative absence of visual receptors and the low prominence of the landform. However in some instances the more extensive and uniformly flat lowland landscapes are very open and have visual sensitivities, as found on Sanday.

Areas of higher visibility may have a bearing on their capacity for wind turbines development, although the relationship may not be simple. High visibility could mean high visual sensitivity but may also indicate exposed larger scale locations suitable for turbines. Based on the computer assessment and on observation, the following are identified as areas of higher sensitivity:

- The *Moorland Hills* of West Mainland, particularly those towards the east coast but also those to the south. These landscape areas have higher visibility from residential receptors, transport routes and viewpoints;
- Areas of *Rolling Hill Fringe*, *Plateau Heaths and Pasture*, and *Low Island Pasture* in the vicinity of Kirkwall, with high visibility from residential receptors and transport routes;
- The *Ridgeline Island Landscape* of Shapinsay, particularly the western part, with higher visibility from residential receptors, transport routes and viewpoints;
- The main *Loch Basin* of West Mainland, in particular the southern part which has high visibility particularly from transport routes and viewpoints;
- The landscapes around Scapa Flow including the *Inclined Coastal Pastures of* east coast Hoy and western Burray, the *Low Moorland / Low Island Pastures* of Flotta, and various landscape types of north western South Ronaldsay, with higher visibility from viewpoints and transport routes;
- The extensive and flat *Low Island Pastures* of Sanday, the open landscape of which is highly visibile to most receptor types on the island.

The least visible areas may have capacity to conceal turbines and site them away from most receptors. However their lack of visibility may indicate landscape character sensitivities such as smaller scale and greater levels of settlement, or alternatively remoteness. Areas least visually sensitive to turbine developments include:

- The western coast and much of the interior *Moorland Hills* of Hoy;
- The southern tip of South Ronaldsay;
- The north western parts of Rousay, including the Peatland Basin towards the centre of the island;
- Parts of the Outer North Isles including North Ronaldsay, southern Stronsay, north western Westray and Papa Westray.
- The *Low Island Pastures* to the north of East Mainland including Tankerness and Deerness.

The findings of the visibility assessment are incorporated in the analysis and assessment. Nevertheless, as discussed above, they require careful interpretation in relation to sensitivity of receptors, landscape character and the importance of some more distant views.

Legend

- Study Area
- Viewpoints

Road Classifications

- B Road
- A Road
- Cycle Route
- Ferry Line
- Address Points
- Settlements

Viewpoints	Island	Name
B1	Burray	Hillside
B2	Burray	Lamb Holm
E1	Eday	Leeniedale Hill
E2	Eday	Vinquoy Hill
E3	Eday	Stone of Setter
EG1	Egilsay	St Magnus Church
EK1	Mainland (East Kirkwall)	Ayre Picnic Site
EK2	Mainland (East Kirkwall)	Newark Bay Picnic Site
EK3	Mainland (East Kirkwall)	The Gloup (attraction, walks) & Mull Head Nature Reserve
EK4	Mainland (East Kirkwall)	The Ward (Summit)
EK5	Mainland (East Kirkwall)	Warthill
EK6	Mainland (East Kirkwall)	Hamley Hill (Summit)
EK7	Mainland (East Kirkwall)	Sands of Wideford, nr Kirkwall Airport
FL1	Flotta	West Hill
H1	Hoy	Binga Fea
H10	Hoy	Martello Tower
H11	Hoy	Melsetter
H2	Hoy	Lyrawa Hill
H3	Hoy	Wee Fea
H4	Hoy	Rackwick
H5	Hoy	Moaness
H6	Hoy	Pegal Bay Picnic Site
H7	Hoy	Dwarfie Stane
H8	Hoy	Hoy Nature Reserve
H9	Hoy	Quoyness Picnic
NR1	North Ronaldsay	Hollandstoun
NR2	North Ronaldsay	Trolla Vatn
PW1	Papa Westray	North Hill
PW2	Papa Westray	Knap of Howar
R1	Rousay	nr Kierfa Hill
R2	Rousay	Mid Howe
R3	Rousay	Faraclett
R4	Rousay	Trumland House
R5	Rousay	Blotchnie Fiold
S1	Stronsay	John's Hill
S2	Stronsay	Vat of Kirbuster
S3	Stronsay	Both Hellia
SA1	Sanday	Backaskail Bay
SA2	Sanday	Wart Hill
SA3	Sanday	Flea Hill
SA4	Sanday	Bay of Lopness Picnic
SA5	Sanday	Whale Point
SH1	Shapinsay	Balfour Heritage Centre
SR1	South Ronaldsay	Serrigar
SR2	South Ronaldsay	Bur Wick
SR3	South Ronaldsay	The Wart
SR4	South Ronaldsay	Sand of Wright Picnic Site
SR5	South Ronaldsay	Isbister
W1	Westray	East Kirbest
W2	Westray	Lock of the stack
W3	Westray	Ness of Tuquoy
W4	Westray	Rackwick
W5	Westray	Fitty Hill
W6	Westray	Sunnybank
WK1	Mainland (West Kirkwall)	Wideford Hill
WK2	Mainland (West Kirkwall)	Keelylang Hill
WK3	Mainland (West Kirkwall)	Hobbister Hill
WK4	Mainland (West Kirkwall)	Ward Hill
WK5	Mainland (West Kirkwall)	Stromness Citadel
WK6	Mainland (West Kirkwall)	Hill of Lyndardy
WK7	Mainland (West Kirkwall)	Hill of Midland
WK8	Mainland (West Kirkwall)	Skara Brae
WK9	Mainland (West Kirkwall)	Vestra Fold
WK10	Mainland (West Kirkwall)	Kitchener Memorial / Marwick Head
WK11	Mainland (West Kirkwall)	Mid Hill/ Birsay Moors Nature Reserve
WK12	Mainland (West Kirkwall)	Costa Hill
WK13	Mainland (West Kirkwall)	Ring of Brodgar
WK14	Mainland (West Kirkwall)	Barnhouse Stone
WK15	Mainland (West Kirkwall)	Maeshome
WK16	Mainland (West Kirkwall)	Click Mill
WK17	Mainland (West Kirkwall)	Brocch of Burness
WK18	Mainland (West Kirkwall)	Knowe of Onston
WK19	Mainland (West Kirkwall)	Tingwall
WK20	Mainland (West Kirkwall)	Cuween
WK21	Mainland (West Kirkwall)	Point of Buckquoy
WK22	Mainland (West Kirkwall)	Orphir bay
WY1	Wyre	Wyre Heritage Centre

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Figure 4.1

Transport Routes, Residential Receptors & Viewpoints

N

0 5 10 20 Km

5.0 WIND TURBINES IN THE STUDY AREA

This section lists and describes the operating, consented and proposed wind turbine developments in the study area at July 2013. A brief explanation of turbine and windfarm size categories used in this study is given below.

5.1 Size of Wind Turbines and Windfarms

There are a number of overlapping and interacting factors which affect the potential landscape and visual effects of wind energy developments. The four main factors are:

- Size of turbine
- Turbine design (shape/ blades/ tower /colour)
- Numbers of turbines (within groups and / or single turbines spread across an area)
- Distribution of turbine groupings (spacing between groups and/or single turbines)

The effects of these factors will in turn differ depending on the character of the landscape in which the turbines are located. The factors and their effects are discussed in detail in **Appendix 5** of this report. Tables 2.1 and 5.1 provide a classification of wind turbine sizes and wind energy development sizes. These provide a basis on which turbine size and distribution is mapped and discussed in the following sections.

There is no current 'accepted' classification of commercial windfarm sizes in Scotland. Existing and proposed wind energy developments vary in turbine numbers and turbine sizes; from single small turbines to over 200 very large turbines. Individual turbines vary in size from below 15m to more than 140m, with maximum outputs from a few kW to greater than 3MW.

In comparison to much of Scotland, wind energy development in Orkney is small scale, but turbines are widespread and occur frequently in the landscape. The overwhelming majority of developments are below 20m total height, and typically single turbine developments. Their frequency within the landscape is a reflection of historic patterns of land tenure and farming practices. Settlements are few and small farms and houses are widely scattered across the lowland landscapes, many of which having an associated domestic, farm or community wind energy development. Larger scale single turbine are a feature of the wind energy landscape, sometimes constructed as community developments. The single turbines found on Eday (77m), Shapinsay (67m) and Flotta (100m) have become defining features of these small islands. The largest development of turbines in Orkney is at Burgar Hill, West Mainland, comprising only seven turbines between 76m and 116m, and no single development on has an output of more than 20MW.

Table 5.1 refers to small, medium, large etc. size wind energy developments. For clarity the wind energy development size categories relate wherever possible to published guidance or planning application procedures. The 20MW size to which SPP currently refers is shown in the Table 5.1 below, although it should be noted that emerging Government policy is recommending the abandonment of this scale threshold.

Table 5.1. Wind Energy Development Size Categories

Size Category	Size Criteria	Planning Criteria/ Illustrative Examples
Small	A development of 3 or fewer turbines.	As defined by SNH guidance on assessment of small scale wind energy development (*SNH 2012*)
Small/Medium	A windfarm of more than 3 turbines up to 20MW output	*E.g. Between 4 turbines over 50m and 10x2MW turbines or 6x3MW turbines*
Medium	A windfarm between 20MW and 50MW output	Windfarms up to 50MW are dealt with as local planning authority applications. *E.g. Between 7x3MW and 16x3MW turbines*
Large	Windfarms greater than 50MW output	Windfarms over 50MW are Section 36 Applications dealt with by Scottish Ministers. *E.g. A minimum size of 20x2.5MW or 17x3MW turbines*
Very Large	Windfarms greater than 100MW output	*E.g. A minimum size of 50 turbines over 125m tall*

5.2 Wind Turbine Distribution in the Study Area

Consented and proposed wind energy developments within the study area are listed, together with details (where available) of location, number and height of turbines etc, in **Appendix 6**. The locations are shown in **Figures 5.1.**

At July 2013 there were within Orkney a total of 780 turbines that are consented and 28 that are planned pending a decision.

5.2.1 Operating and Consented Wind Turbines within Orkney

As of July 2013 574 of operating and consented turbines (74%) are small (<20m in height); 140 (18%) are medium (20-<30m); 19 (2%) medium/large (30-<50m); 32 (4%) large (50-<80m), and 15 (2%) very large (80-125m). Most of the turbines are single, with the remainder in small groups of no greater than 8 turbines. Turbines of 80m or higher are

found in only three locations: in the south of Sanday; at Burgar Hill on Mainland; and a single turbine on Flotta.

The largest consented installation in Orkney is for 7 turbines on Burgar Hill, which falls into the 'small / medium' size category of Table 5.1, an illustration of the constraints to large wind energy developments within this small scale island landscape.

Figure 5.2 Consented and Operational Turbines by Size

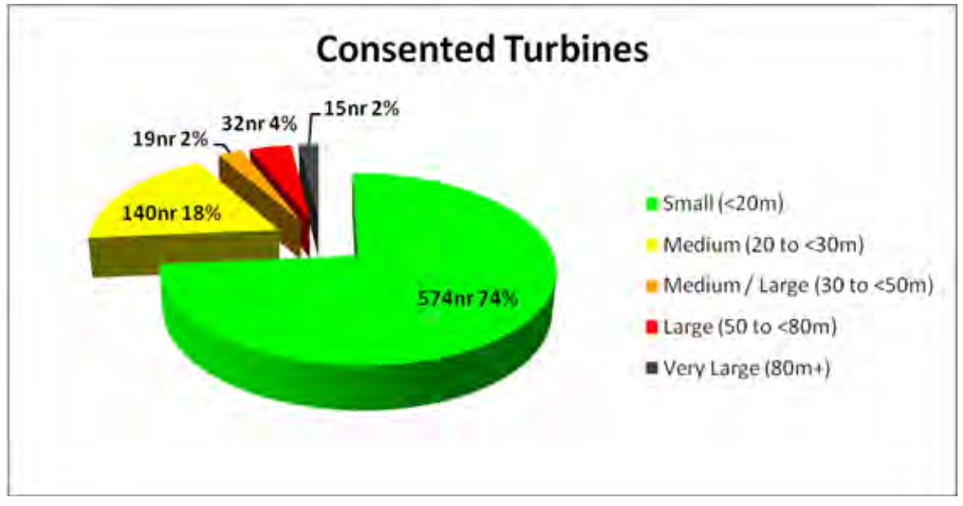
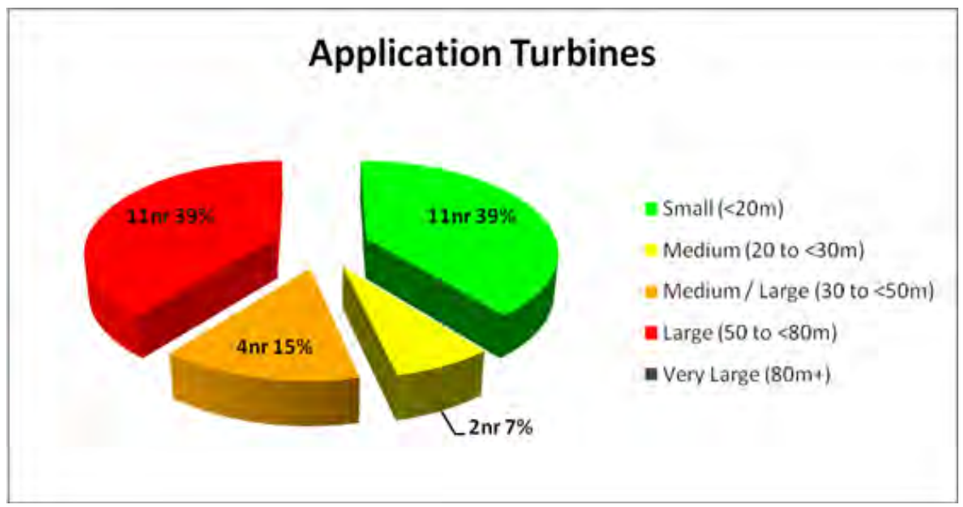


Figure 5.3 Application Turbines by Size



5.2.2 Proposed Wind Turbines in Orkney

As of July 2013 there were planning applications for 28 turbines awaiting consent. Proposed turbines differ in that a greater proportion are over 30m, with 11 (39%) above 50m, but none over 80m. The greatest numbers of larger turbine applications are found on the east coast of Hoy (one 47m turbine, five 67m turbines).

5.2.3 Proposals That Have Been Refused / Withdrawn

A number of windfarm proposals have been refused or withdrawn at planning application stage or dismissed at appeal in recent years. The majority of the refusals have been for small turbines and frequently due to adverse landscape and visual impacts. Four of the larger schemes that have been refused / withdrawn are:

- Gruff Hill, nr Houton: 3x100m turbines (dismissed 2004), primarily on the basis of damage to the SPA.
- Enyas Hill: 3x90m turbines (dismissed 2005) mainly due to unacceptable landscape and visual effects on the *Isolated Coastal Knolls* landscape character.
- Merranblo, nr Stromness: 3x67m turbines (refused 2008), due to unacceptable effects on the World Heritage Site.
- Skeabrae: 3 x 56m turbines (withdrawn 2013), potential unacceptable effects on World Heritage Site.

5.3 Landscape Character of Turbine Locations

Most wind developments in Orkney are found within the lowland pastoral landscape types (Figure 5.4). The numerous smaller turbines, below 30m, are found predominantly within the *Inclined Coastal Pastures*, *Rolling Hill Fringe*, *Coastal Basins* and *Low Island Pastures* landscape types, closely following the patterns of farming and housing development. These lowland developments are typically of single or small groups of turbines, often associated with an individual farm or house. Turbines are well distributed throughout the lowland landscapes, a reflection of the dispersed nature of settlement resulting from historic patterns of land tenure and the resultant high numbers of small farms and crofts.

Turbines greater than 50m are found in lowland and upland landscapes, as individual turbines or small groups. The *Moorland Hills* landscape type is the only large scale upland landscape in Orkney, and is of limited extent and visually prominent. The presence of larger turbines in lowland landscapes reflects the scarcity of upland landscapes into which larger turbines can be sited. This pattern of larger turbines in lowland landscapes creates issues of scale when seen with smaller scale farms and houses, as sometimes seen in the *Undulating Island Pasture* landscapes of Deerness and Westray.

Larger turbines are occasionally sited on smaller islands, for example the 67m turbines on the *Ridgeline Island Landscapes* of Shapinsay and Westray, and the 77m turbine on the west coast of Eday. Such turbines are often community developments, and become defining features of the island landscape.

While an extensive upland landscape is absent in Orkney, the large scale seascape of the archipelago is the setting to some of the larger turbine developments. For example the

long, low peninsula on which the 100m turbines of Sanday are located helps create some detachment from the main island landmass, with turbines often viewed in a wider seascape setting. Well sited and appropriately sized turbines in coastal locations can often appear rational, with maritime associations with wind, and where vertical structures, such as lighthouses and masts, are expected landscape features. However sensitive coastal landscapes are abundant in Orkney, with no wind developments found on the dramatic *Cliff Landscapes* typically found on the west coast.

Figure 5.4 Consented Turbines by Landscape Character Type

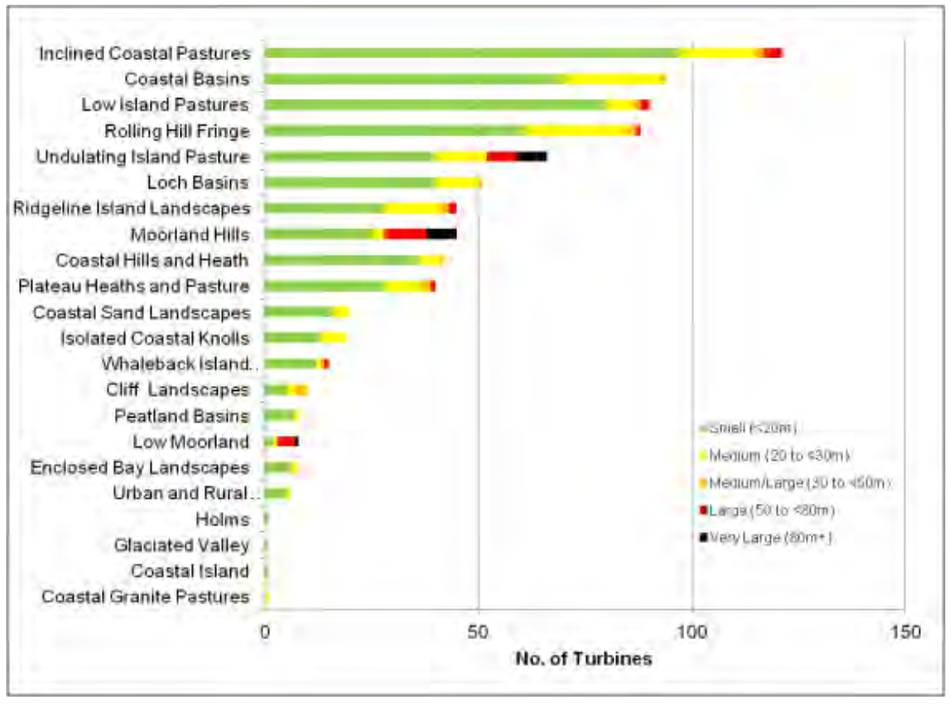
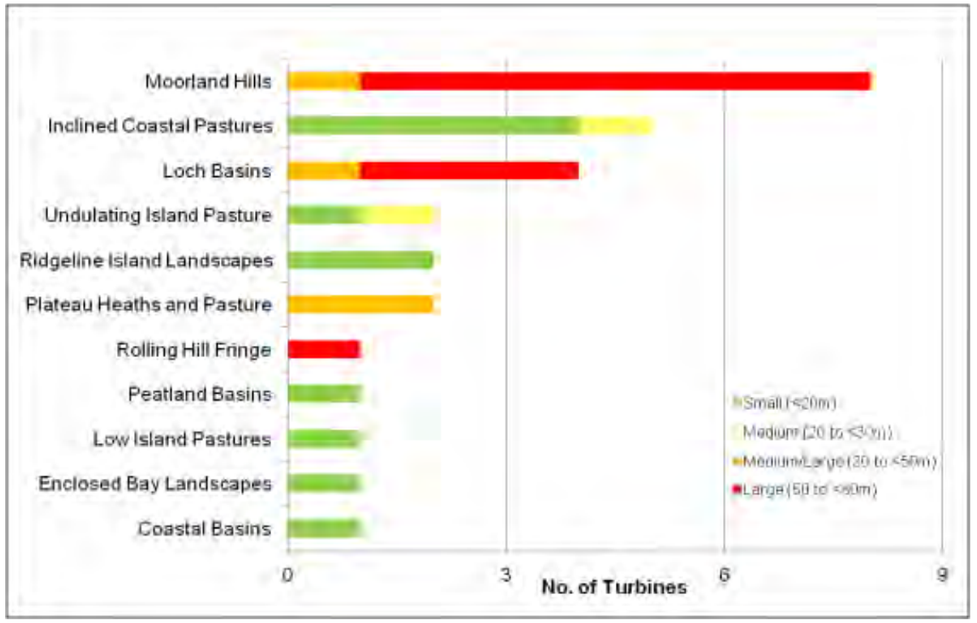


Figure 5.5 Application Turbines by Landscape Character Type



Legend

Wind Turbines - Existing / Consented

- Small (<20m)
- Medium (20 to <30m)
- Medium / Large (30 to <50m)
- Large (50 to <80m)
- Very Large (80m to <125m)

Wind Turbines - Applications

- Small (<20m)
- Medium (20 to <30m)
- Medium / Large (30 to <50m)
- Large (50 to <80m)

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6.0 ASSESSMENT OF LANDSCAPE CAPACITY AND CUMULATIVE CHANGE

6.1 Assessment Purpose and Process

The purpose of the following assessment is to determine the capacity of the Orkney landscape to accommodate wind turbine development and to determine what levels of cumulative development would be acceptable across Orkney. The assessment involves four stages:

1) Firstly assessing the underlying capacity of the Orkney landscape to accommodate wind turbine development;
2) Secondly, assessing the degree of cumulative change resulting from operating and consented wind turbines in the study area;
3) Thirdly, assessing the extent to which cumulative consented development has reached the limit of the landscape's capacity to acceptably accommodate wind energy developments; and
4) Finally, assessing residual capacity and the level of further development that could acceptably be accommodated within areas of Orkney.

An assessment methodology is given in **Chapter 2.0** and further detailed in **Appendix 2**. The basis of the assessment is the Generic Landscape Capacity Assessment, provided in Appendix 3, carried out for each of the 22 rural Landscape Character Types (LCTs). These generic assessments provide the basic building blocks for the main island based capacity assessments found in this section of the report. The island assessments are broken down by Landscape Character Area (LCA), the capacity of which are based on the generic LCT assessment adjusted where necessary to reflect the island contexts in which the LCAs occur.

An assessment for each of the main populated islands is provided in this section, and **Figures 6.1 to 6.4** following. A tabular summary of the assessment and guidance is provided with each island section (Tables 6.2 a-n). A blank table with an explanation of each column/section is shown in Figure 6.1.

Maps in Figure 6.1 show the capacity for turbines of each size category in each LCT and LCA as determined by the assessment in Table 6.2. The assessment gives a broad category of high, medium or low (see method in Chapter 2).

Figures 6.2 and 6.3 are maps showing the extent of existing and proposed wind turbine landscape types in Orkney. The types are explained in Table 2.2.

- The extents shown in Figure 6.2 are an illustrative approximation based on size and distribution of consented turbines and the modulating effects of topography and landscape character.
- The extents shown in Figure 6.3 illustrate the proposed acceptable extent of future wind turbine development through its effect on the landscape.

The areas shown are approximate, based on landscape character and topography, and account for key constraints and opportunities. In all cases the figures should be interpreted through the further detailed descriptions and guidance given in this report.

This assessment is organised according to the major islands of Orkney, and Table 6.2 is separated into sections to show the assessment for each island or island group. Each section is preceded by a brief summary of the landscape character of the island and a map highlighting the distribution of the relevant LCT/LCAs. The map also shows the distribution of consented and proposed wind turbines (as of July 2013) for ease of reference.

Where there are significant variations in sensitivity, capacity or consented levels of development within the LCTs across Orkney, the relevant LCAs are given a separate assessment. Where significant capacity has been identified, detailed illustrated guidance on turbine siting is provided for LCT/LCAs. This is followed by a summary of capacity and cumulative effects for the whole local authority area.

Further spatial guidance regarding areas with restricted capacity and areas with capacity for further development are given at the end of this chapter and illustrated in **Figure 6.4**. This also includes an area identified for potential future strategic wind energy development, where it may be appropriate to exceed landscape capacity to accommodate larger scale development, as described in Section 6.5.5.

6.2 Guidance

Section 6.3 and Table 6.2 summarises guidance on turbine sizes, group sizes and separation between groups of turbines for each island LCA that would limit cumulative development to the proposed acceptable limit. The details relate to turbines of each size category (small, medium, medium/large, large and very large). It is stressed that the group size and spacing details for an area envisage the capacity for accommodating turbines of a ***single size category*** in the area, ***not*** for accommodating all categories together. There may be potential for accommodating different turbine sizes in the same area, but this would depend on the characteristics of the area, and accommodating one size of turbine will affect the ability to accommodate further turbines of any other size. Further guidance on this is given in Section 6.2.3.

Further detailed and illustrated guidance for islands, LCTs, and LCAs is given following the analysis in Table 6.2. The relative positioning and group spacing of turbines is discussed in the detailed guidance for each area.

As highlighted in Section 2.3 of this report, guidance on small turbines, below 20m blade tip height, applies at a local level and is generic. This guidance is provided within the assessment in this section and in Appendix 3.

Appendix 5 of this report contains detailed discussion of how turbine size, design, group size and group separation affects perceptions of wind energy and landscape character. Further guidance is given in the SNH publications *Siting and Designing windfarms in the landscape* and *Siting and Design of Small Scale Wind Turbines of between 15 and 50*

metres in height. The following briefly outlines the main considerations in developing the specific guidance for this assessment.

6.2.1 Turbine Size

The guidance on turbine sizes generally relates most clearly to the horizontal and vertical scale of the landscape, complexity of landscape pattern and the presence or absence of smaller scale features and elements such as trees and houses. Small, medium and medium/large size turbines (under 50m blade tip height) are most able to be accommodated in smaller scale landscapes with more complex patterns and smaller scale reference features. Large and very large turbines (50m+ and 80m+ blade tip respectively) are most successfully accommodated in larger scale landscapes with simpler landforms and fewer small scale references. Smaller turbine sizes may also be accommodated in such landscape types, although it may be more appropriate or rational to utilise such landscapes for larger scale turbines. Furthermore, the relative proximity of smaller and larger size turbines would need to be carefully controlled.

The larger scale upland landscapes in Orkney are relatively restricted in their capacity due to their limited extent and visual sensitivity. However some of the more remote low island landscapes, seen within a large scale seascape setting, may be able accommodate larger turbines and groups.

6.2.2 Turbine Group Size

Turbine group sizes relate to scale and complexity of the landscape, particularly to landform and pattern. In general larger scale more simple landscapes with gentle landforms and simpler patterns can accommodate larger groups of turbines, subject to having the physical capacity (i.e. available area).

6.2.3 Separation between Turbine Groups

Turbine size and group size can be generically related to landscape character when applied to a single turbine or windfarm, or across a number of windfarms. However, separation between groups of turbines is one of the most important factors in controlling cumulative effects. This is because of the high prominence and extensive visibility of most larger turbines leading to effects on landscape character well beyond the turbine, as discussed in detail in Appendix 5.

The guidance in Table 6.2 therefore gives approximate separation distances that should be applied between turbine groupings (including single turbines) in order to achieve the desired turbine landscape typology. The main factors controlling the proposed separation distance are:

1) Proposed Turbine Landscape Type: each proposed type detailed in Table 2.2 requires a different separation distance to achieve the landscape and visual criteria described.
2) Turbine Size: larger turbines require a greater separation than smaller turbines to achieve the same landscape type.
3) Group Size: larger groups of turbines require a greater separation distance to achieve the same landscape type.
4) Landscape Character Type: this has an effect on all the above factors. In terms of visibility, more open landscapes with modest landforms are likely to require greater separation distances, whereas landscapes with significant topography and woodland cover give the potential to reduce visibility. Factors such as scale and pattern can have a more subjective effect. The presence of other tall objects (such as electricity pylons) and of development also affects the perception of turbine development.

The distances given in Table 6.2 are approximate, relating primarily to (1) and (2) above as in this case large groups are not proposed. Landscape character including topography is also important: where landforms are capable of visually separating turbine groups the distance between landforms is a consideration in setting distances.

In the case of small LCAs or islands the separation distances for larger turbines might mean that, in theory, only one grouping would be comfortably accommodated within the area.

Separation distances also apply between a development in one landscape type and another in an adjacent type, or between turbines of different size categories. In such situations an average of the two recommended distances would be most appropriate.

In all cases the distances are an approximate range intended for guidance. Separation distances between specific proposals should therefore be considered in more detail on a case by case basis. In areas where turbine groupings can be accommodated, co-ordination between developments in order to accommodate more turbines within the landscape capacity is desirable. This includes encouraging turbines of a similar size and clustering as a group in preference to separation.

6.2.4 Other Factors which Influence Guidance

The capacity assessment for some generic LCTs does not cover the variation found between or even within individual LCAs of that type. This is usually because of one or two key landscape factors which partially override the characteristics including:

- All or part of the LCA is much more prominent and visible than the bulk of the area covered by the LCT;
- A particularly small area is covered by the unit compared with the main areas of the LCT, or it is located on a small island;
- Some or all of the LCA lies in an area designated to protect a landscape or setting of a town;
- Close proximity to other more sensitive neighbouring LCAs which would be significantly affected by wind energy proposals otherwise suitable for the LCT;
- Close proximity to other LCTs, settlements or industry which reduces the sensitivity of a unit or part of a unit compared with the bulk of the area covered by the LCT.

A combination of any of these factors might limit the ability of a specific LCA, or part thereof, to accommodate a level of development otherwise acceptable to the LCT. The

main areas are identified in Table 6.2 and Figures 6.1 to 6.4 but any specific development should be considered in more detail and assessed against local factors where appropriate.

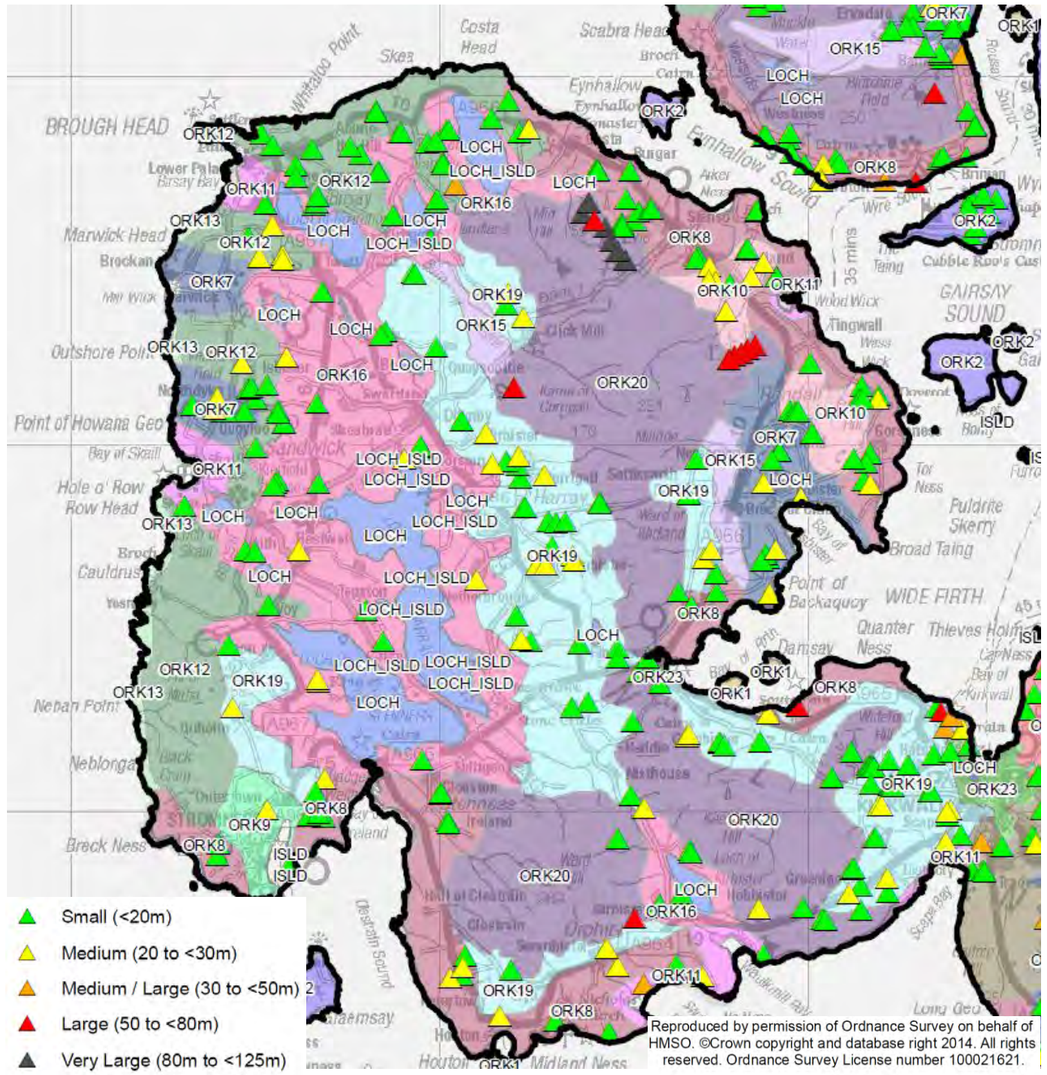
Finally it is emphasised that this assessment is focused on landscape and visual issues. Areas which have been identified as suitable on this basis may be restricted by other unrelated factors such as protection of wildlife, proximity to dwellings, aviation restrictions or lack of grid connection. These potential constraints are not the subject of this assessment.

Table 6.1 Explanation of Table 6.2 a-n used for the Island Based Capacity Assessment

Key:	No Capacity	Low Capacity	Medium Capacity	High Capacity																
Island Landscape Character Types	**Generic Landscape Sensitivity and Capacity by Turbine Size**							**Island Specific Capacity by Turbine Size**					**Residual Capacity by Turbine Size**					**Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings**
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
SNH Landscape Character Type	Landscape Sensitivity as Appendix 3	Landscape Value as Appendix 3	Generic base landscape capacity, as Appendix 3, excluding existing turbine developments. Colour coded from 'no' to 'high' capacity.					Island specific landscape capacity, with brief explanation of differences to generic capacity. Colour coded from 'no' to 'high' capacity where applicable.					Residual capacity for turbines according to size, from 'no' to 'high' residual capacity.					Proposed wind energy landscape type, as indicated on Figure 6.3. Indicative turbine groupings and spacings, based on those in Appendix 3 but adjusted where necessary to suit island context.

WEST MAINLAND (Including Gairsay)

West Mainland comprises the single largest land area within the study, and for the purposes of this assessment includes all areas of Mainland to the west of Kirkwall. Its relatively large size and developed nature are attributes of a landscape with some suitability for larger scale wind developments. However these attributes are offset to an extent by the presence of the World Heritage Site, a sizable population, and the presence of a nationally designated National Scenic Area.



ORK1 – Holms
ORK2 – Whaleback Island Landscapes
ORK7 – Coastal Basins
ORK8 – Inclined Coastal Pastures
ORK9 – Granite Coastal Pastures
ORK10 – Isolated Coastal Knolls
ORK11 – Enclosed Bay Landscapes
ORK12 – Coastal Hills and Heaths
ORK13 – Cliff Landscapes
ORK15 – Peatland Basins
ORK16 – Loch Basins
ORK19 – Rolling Hill Fringe
ORK20 – Moorland Hills

Landscape Types in West Mainland (13 total)

1 Holms; 2 Whaleback Island Landscapes; 7 Coastal Basins; 8 Inclined Coastal Pastures; 9 Granite Coastal Pastures; 10 Isolated Coastal Knolls; 11 Enclosed Bay Landscapes; 12 Coastal Hills and Heath; 13 Cliff Landscapes; 15 Peatland Basins; 16 Loch Basins; 19 Rolling Hill Fringe; 20 Moorland Hills

Description

West Mainland is approximately 27km in extent from north to south, 23km east to west. To the east and south are gently sloping and rounded *Moorland Hills*, rising to a maximum of 268m AOD at Ward Hill towards the south of the area. These hills are fringed typically by the settled, pastoral LCTs *Inclined Coastal Pastures* and *Rolling Hill Fringe*. Towards the west is an extensive loch basin, situated around the Loch of Stenness and Loch of Harray to the south, and encompassing the smaller Loch of Boardhouse and Loch of Hundland to the north. This low lying area of large waterbodies and nearby sea create the impression of an inundated, partly flooded landscape, however this area is well settled and agriculturally productive. West of the loch basin more sparsely developed low hills and heathland rise towards the cliffs of the rugged western seaboard of the island, a coastline interspersed with the occasional coastal basin or bay. The landscape is treeless, with the exception of those planted around some properties. The relative large size and topography of the area means that the surrounding seascape is less of a defining feature than for many of the smaller island landscapes.

There is a strong visual relationship between south west Mainland and the high hills of northern Hoy, while to the north east the hilly island of Rousay is barely separated from mainland by the narrow Eynhallow Sound.

The lowland areas of West Mainland are settled, with Stromness, Finstown and Dounby the main concentrations of population outside of Kirkwall. The lowland areas include widespread low density development of small farms, crofts and settlements, sometimes loosely associated into small villages and hamlets. A well developed road network runs through entire area with the exception of the uplands and western coastline. The dominant land use is agriculture, with little commercial or industrial development.

Some of Orkney's most important heritage sites are found in the area, and the basin around Loch of Stenness and Loch of Harray is the location of the 'Heart of Neolithic Orkney' World Heritage Site. The Hoy and Mainland National Scenic Area includes the south western parts of the area.

The Island of Gairsay to the east of West Mainland is included within this assessment, as are two small *Holms* in the Bay of Firth.

Underlying Landscape Capacity for Wind Energy

The *Moorland Hills* of West Mainland present one of the largest scale landscapes in Orkney, within which larger turbines can be accommodated. The moorland comprises rounded, low hills separated by the valleys of small burns, vegetated by unenclosed rough pasture and heath. However the height of the hills constrains turbine development to no more than 80m. Larger wind

energy developments in these areas tend to be highly visible from the surrounding lowlands and neighbouring islands, including the sensitive World Heritage Site.

The settled nature of the transitional *Rolling Hill Fringe* landscape generally prohibits larger scale wind development, but frequent turbines up to 30m could be accommodated within the landscape. More occasional groups of turbines between 30 and 50m, and single turbines between 50 and 80m could be absorbed into the landscape, benefiting from the back clothing provided by the *Moorland Hills* to the rear. Areas of the LCT with a lower capacity exist around the population centre of Kirkwall, and areas close the lochs of Stenness and Harray due to the visual sensitivity of the World Heritage Site. Capacity for similar scale developments also exists along the settled *Inclined Coastal Pastures* occurring along the southern and western coasts, which often benefit from the back clothing of *Moorland Hills.*

The main *Loch Basin* around the lochs of Stenness and Harray is geographically quite extensive, approximately 15km north to south and up to 6km east to west. The pattern of agriculture and settlement, the prominence of vertical features in a wide basin landscape, and the proximity to important heritage sites in the main LCA constrain the capacity for larger wind developments. Capacity exists for turbines from 30 to 50m in small numbers, but situated away from the central basin floor**.** The two smaller *Loch Basins* to the north around Loch of Swannay, and to the south around Loch of Kirbister are of much smaller scale, with capacity only for occasional small turbines up to 30m.

Coastal Hills and Heath in the west and north are upland areas of low elevation up to approximately 150m AOD. The degree of settlement and farming practices varies from undeveloped with unenclosed farmland to the south west, to more settled and enclosed to the north. This landscape is the setting to the rugged coast, therefore potential for wind development is low, with capacity for occasional turbines up to 30m.

Three areas of *Coastal Basin* are present – two smaller ones to the west and one larger to the east of the island. These settled, farming LCAs have capacity for turbines up to 30m, with the occasional 30 to 50m turbines as suggested in the generic assessment. However substantial parts of the largest area to the east are seen as the mainly undeveloped foreground to sea views across to the Bay of Kirkwall from the Busy A966, and this flat landscape would be sensitive to all but occasional small scale wind energy developments.

Isolated Coastal Knolls are small, rounded hills which intrude into the coastal lowlands at two locations to the east of West Mainland. These hills are distinct and quite prominent features of undeveloped upland character, set within an otherwise settled coastal landscape. These character areas are sensitive to wind developments, but turbines up to 30m could be accommodated at their fringes.

Other smaller LCTs with no or very limited capacity include *Cliff Landscapes*, *Enclosed Bay Landscapes*, and *Peatland Basins* due to their inherent landscape sensitivity as described within the generic landscape assessments provided in Appendix 3.

Consented Wind Developments in 2013

Wind energy developments on West Mainland are geographically widespread and encompass the full range of turbine development sizes found in Orkney, ranging from numerous turbines up to 20m to those up to 116m at Burgar Hill. Wind energy developments occur most frequently along the coastal fringes from the north east to the south east of West Mainland. The more rugged western coast, the Lochs of Stenness and Harray loch basin, Stromness, and the *Moorland Hills* have less frequent development.

The most intensively developed wind energy landscapes occur around the Burgar Hill and Hammars Hill developments (seven and five turbine developments respectively of 50m+), resulting in *Wind Turbine Landscapes* occurring because of multiple developments of different sized turbines often in view.

Turbines up to 30m are most frequent throughout the lowland *Inclined Coastal Pastures, Rolling Hill Fringe*, and *Coastal Basins*. Developments are typically only one or two turbines found close to farm buildings and houses. Some larger arrays of turbines up to 20m are present, for example near Kirkwall there is a consented development of eight small turbines. Turbines in the 30 to 50m range are unusual, with the exception of a small concentration around Kirkwall. Much of these lowland areas therefore appear as *Landscapes with Occasional Wind Turbines*, but with occasional *Landscape with Wind Turbines* occurring, for example in the Rolling Hill Fringe. Most of the lowland areas appear as *Landscape with Occasional Wind Turbine,* due to the small size of most of the developments which are quite easily absorbed into the landscape.

The majority of the upland areas of types *Moorland Hills, Coastal Hills and Heaths*, and *Cliff Landscapes* are considered *Landscape With No Wind Turbines*.

Assessment of Residual Capacity for Future Development

The best opportunities for further large wind turbine developments, of multiple turbines between 50 to 80m, exists only within the *Moorland Hills*. The presence of the existing wind farm developments in the northern hills means residual capacity here is very low. In the southern area of *Moorland Hills*, there is residual capacity on the south facing slopes overlooking Scapa Flow, away from the *Moorland Hill* tops and the north facing slopes.

Additional developments of single 30 to 80m turbines could best be accommodated within the *Moorland Hills*, *Rolling Hill Fringe* and *Inclined Coastal Pastures*, with some residual capacity for turbines between 30 and 50m within the *Coastal Basin* landscape type. Where possible turbines in the *Rolling Hill Fringe* should be backclothed against Moorland Hills to avoid skylining. Residual capacity for single turbines greater than 50m does not exist within the other landscape types of West Mainland.

Most LCTs could accommodate some further development of turbines up to 30m, with the exception of *Cliff Landscapes*, *Peatland Basins,* some of the less developed areas of *Coastal Hills and Heath,* and the elevated areas of the *Isolated Coastal Knolls*. The landform of *Inclined Coastal Pastures* and *Rolling Hill Fringe* is best able to absorb such developments, and capacity for development will depend upon the patterns of settlement.

The proposed limit to wind energy development is a *Landscape With Wind Turbines* along much of the eastern and southern coastal fringe, and the *Rolling Hill Fringe* to the north east of the Loch of Harray, with much of the rest of the area a *Landscape with Occasional Wind Turbines*. Sensitive coastal and upland locations should remain a *Landscape with No Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of West Mainland. Generic guidance for each LCT is provided in Appendix 3.

1 Holms; 2 Whaleback Island Landscapes: Retain islands as characteristically free from wind development, with the exception of potentially small turbine(s) associated with the farm on Gairsay.

7 LCT Coastal Basins: Landscape area near Quoyloo on the west coast is close to capacity and risks becoming a *Wind Turbine Landscape*. The large basin on the east coast is in places flat and visually exposed, to the east of the A966 turbines would be prominent from the road, and 30-50m turbines should be avoided here.

8 Inclined Coastal Pastures: Most residual capacity occurs along the southern coast, but turbines greater than 30m would not be appropriate in the LCAs adjacent to Stromness and where they may impact on the NSA. Parts of the north eastern coast, opposite Rousay, are close to capacity.

9 Coastal Granite Pastures: A unique LCT occurring only around and including Stromness with low capacity and no residual capacity for turbines greater than 20m. Refer to generic guidance.

10 Isolated Coastal Knolls: The northern most area around Vishall Hill appears over capacity, including two prominent 20-30m turbines near the hill top. Greater residual capacity for turbines up to 30m occurs in the vicinity of the larger scale Enyas Hill in the south, but more elevated sites are to be avoided.

11 Enclosed Bay Landscapes: Sensitive landscape, within which development should be limited to occasional turbines to 30m.

12 Coastal Hills and Heath: This upland, sensitive landscape is the setting to the western coastline. The south western area should be retained turbine free, but there is some capacity for small or medium turbines, up to 30m, in the more northerly, settled, example of this LCT.

13 Cliff landscapes; 15 Peatland Basins: No developments.

16 Loch Basins: The current level of development is acceptable, however vertical features are very prominent in the flat, basin like landscape. Occasional, well separated single turbine developments between 30 and 50m would be the maximum acceptable size of development within the main Loch Basin, but not within 5km of the WHS site boundary. No turbines above 30m around Loch of Kirbister and Loch of Swannay.

19 Rolling Hill Fringe: Widespread capacity for turbines up to 30m sited close to existing houses and buildings, in groups of 1 – 3. Capacity for occasional medium/large and large turbines from 30 to 80m, best sited to take advantage of backclothing from the higher *Moorland Hills*. The area of the southern coast near Stromness is of particular sensitivity, in which no turbines greater than 30m should be situated. Parts of the LCA near Kirkwall are approaching capacity.

20 Moorland Hills: The southern facing slopes of the *Moorland Hills* overlooking Scapa Flow have the greatest residual capacity for 50 to 80m turbines. The north eastern *Moorland Hills* have limited residual capacity due to the existing level of wind energy development.

Turbines in the more elevated parts of the Coastal Hills and Heaths landscape of West Mainland can appear prominent when viewed against the low lying Loch Basin.

Table 6.2a West Mainland: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

West Mainland Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							West Mainland Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
2 Whaleback Island Landscape	Medium	Medium - High	◑	◔	○	○	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1-2, N/A*
								Low capacity for small development associated with farm on Gairsay										
7 Coastal Basins	Medium	Medium	●	◑	◔	○	○	As generic assessment					◑	◔	◔	○	○	*Landscape with Wind Turbines/with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	◑	◔	◔	○	As generic assessment, but no capacity for turbines >30m around Stronmess					◑	◑	◔	◔	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km 50-80m:1, 5km*
9 Coastal Granite Pastures	High	High	◔	◔	○	○	○	As generic assessment					◔	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1, 2km*
10 Isolated Coastal Knolls	Medium - High	Medium	◔	◔	○	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km 20-30m:1-2, 1-2km*

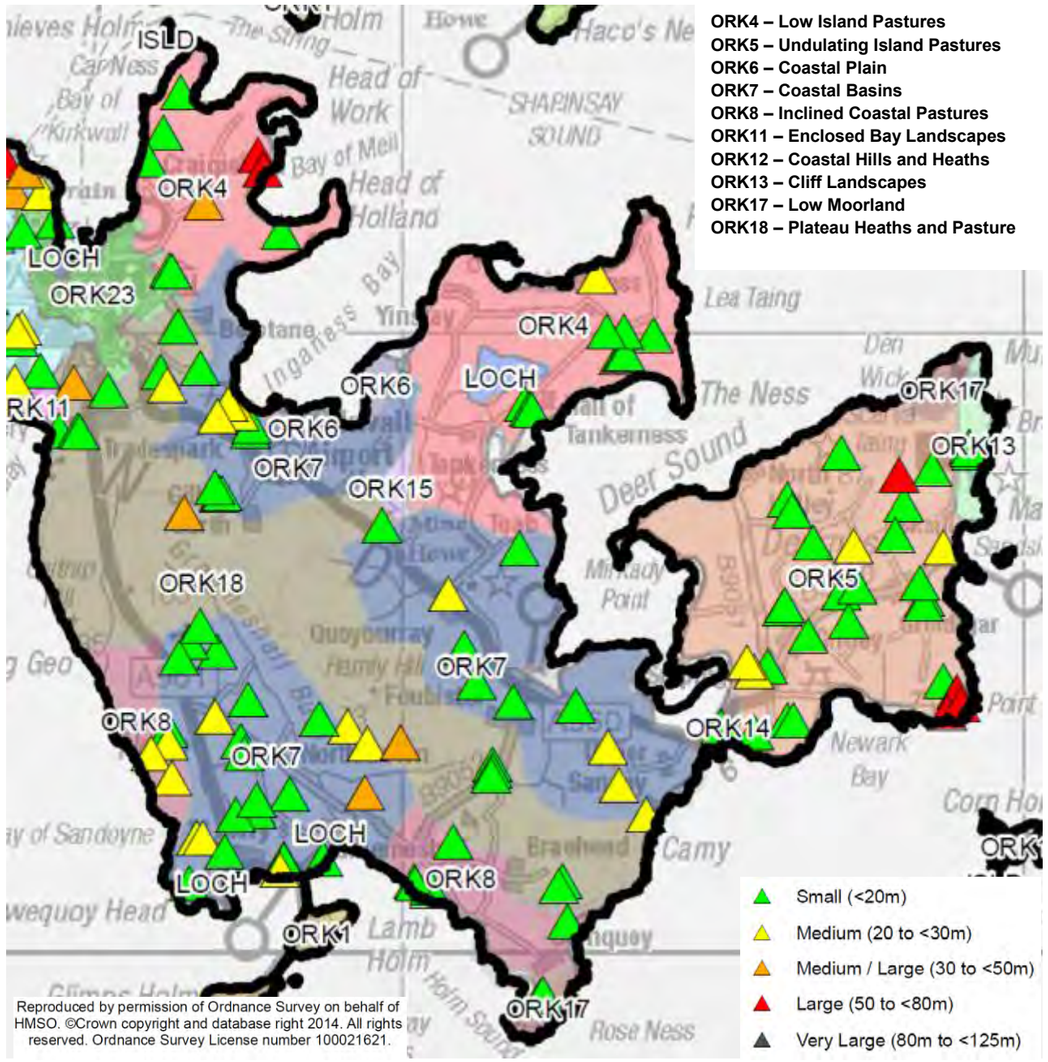
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

West Mainland Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							West Mainland Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
11 Enclosed Bay Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km 20-30m:1, 2km*
12 Coastal Hills and Heath	Medium - High	Medium - High	◔	◔	○	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-2, 1-2km 20-30m:1, 2km*
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
15 Peatland Basins	Medium	Medium	◔	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
16 Loch Basins	Medium	Medium - High	◔	◔	◔	○	○	As generic assessment					◔	◔	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-2km 20-30m:1-2, 3-5km 30-50m:1, 5km*
19 Rolling Hill Fringe	Medium	Medium	◑	◑	◔	○	○	As generic assessment, however no turbines > 30m in LCA north of Stromness					◔	◔	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km 50-80m:1, 5km*
20 Moorland Hills	Medium	Medium - High	○	○	◔	◔	○	As generic assessment, lower capacity on southern hills					○	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 3-5km 50-80m:1-6, 5-10km*

EAST MAINLAND

East Mainland is smaller, and lower lying than West Mainland. Archaeological interest is abundant, but often of a lower profile than elsewhere on Mainland. The area is a well settled landscape which includes the city of Kirkwall, Kirkwall airport, major roads, and other significant concentrations of population, and this degree of development, plus a small landscape scale, leads to sensitivities to larger wind energy development.



Landscape Types in East Mainland (9 total)

4 Low Island Pastures; 5 Undulating Island Pastures; 6 Coastal Plain; 7 Coastal Basins; 8 Inclined Coastal Pastures; 11 Enclosed Bay Landscapes; 13 Cliff Landscapes; 17 Low Moorland; 18 Plateau Heaths and Pasture

Description

For the purposes of this report the division between East Mainland and West Mainland is taken as a line running from Kirkwall to Scapa Bay, and including the small *Enclosed Bay Landscape* of Scapa Bay itself. At its widest point East Mainland extends approximately 16km from east to west and 12km north to south, and rises to approximately 100m AOD.

The main part of the landmass comprises a central low spine of *Plateau Heaths and Pasture* running from the north west to south east, which includes the highest points of East Mainland, up to 101m AOD. Either side of the spine, pastoral landscapes slope gently towards the sea; to the south these are primarily of types *Inclined Coastal Pastures,* with a shallow *Coastal Basin* landscape in the valley of a small burn to the south east of the area. To the north three flat or gently undulating headlands extend into the sea, creating two large enclosed bays. The largest of the headlands is Deerness, the easternmost part of Mainland - a would-be island except for the narrowest of connections to Mainland.

The treeless landscape is open, in common with most landscapes in Orkney. Enclosed, rectilinear fields are mainly under pasture, with some arable production. The more upland areas also tend be enclosed, but often with larger fields and occasional unenclosed areas of rough grassland and heath.

Outside of Kirkwall, the main areas of settlement are around the village of St Mary's to the south within the *Coastal Basin* landscape type, and the more dispersed housing and farm developments on Deerness. However farms and houses occur throughout the area, with the exception of the raised central spine.

Two major A roads runs either side of the central area of raised heath, connecting Kirkwall to Deerness to the north, and to the 'linked islands' to the south. Farms and settlements are connected by an extensive network of minor roads. Kirkwall airport is located at Inganess Bay, approximately 3km south east of Kirkwall.

Base Landscape Capacity for Wind Energy

Wind developments are constrained by factors including the relatively high degree of residential development and proximity to Kirkwall, the presence of major road routes, and proximity to a visually sensitive coastline. The small scale and low elevation of the upland areas mean they have only limited capacity for wind developments, and turbines would tend to be prominent on the elevated central plateau.

Limited capacity for larger turbines from 30 to 50m and occasionally 50 to 80m are found on the northerly *Low Island Pastures* and the *Undulating Island Pastures* of Deerness. These headlands are settled to a varying extent, but opportunities exist for siting turbines away from housing and farm developments. Developments between 50 and 80m would typically be most appropriate on the more remote headlands of the Head of Work to the north east of Kirkwall, although siting of turbines in these locations should respect the sensitivities of these coastal locations, and potential impact on the designed landscape of Balfour on Shapinsay. Both *Undulating Island Pastures* and *Low Island Pastures* have good capacity for developments below 30m, associated with farms and other developments, and relating to the pattern of built development.

The *Coastal Basins* and *Inclined Coastal Pastures* landscape areas could accommodate single or small groups of turbines between 30 and 50m in less developed locations, while capacity for turbines up to 30m is more widespread, following the pattern of farm and housing developments. Greater sensitivities exist in the *Coastal Basin* landscape around St Mary's due to its settled nature, where turbines approaching 30m could be quite dominant when seen close to small houses.

Limited capacity for wind energy development is found in the *Plateau Heaths and Pasture* landscape due to the small scale of the hills and its prominent location at the centre of the island landmass. Occasional 30-50m turbines at the peripheries of the area would be appropriate, however small scale developments have little scope because of the absence of development with which they could be associated with. Developments on the plateau tops and summits would be prominent.

The small *Enclosed Bay Landscape* of Scapa Bay could accommodate occasional small turbines up to 20m associated with residential and recreational developments, however developments should be sensitive to intrusion into views to St Magnus Cathedral in nearby Kirkwall.

The *Cliff Landscape* to the east of Deerness should be retained free of wind turbines and the small areas of *Low Moorland* do not have capacity for wind energy because of their small extent, proximity to sensitive *Cliff Landscapes*, and the presence of lighthouses and beacons.

Consented Wind Developments in 2013

Wind energy developments are widespread within the area, but are most concentrated in Deerness to the north east, and in the *Coastal Basin* and *Inclined Coastal Pasture* landscapes towards the south coast.

Deerness has frequent wind energy development, with turbines of varying sizes, including an array of three 50 to 80m turbines in quite close proximity to farms and houses, a single 50 to 80m turbine, four 20 to 30m turbines and numerous 20m turbines either as single turbines or small groups, with spacings between smaller turbine developments typical no more than 0.5km. The *Coastal Basin* and *Inclined Coastal Pastures* landscape to the south of the central plateau has a similar level of development of turbines below 30m, and a single 30 to 50m turbine, but no turbines of greater height. The majority of these areas appear as *Landscapes with Wind Turbines*.

To the north of the central plateau, the *Low Island Pastures* and *Coastal Basin* landscapes are more sparsely developed, with occasional small clusters of 20 to 30m turbines. The headland to the north of Kirkwall includes a group of two 50-80m turbines, a 30 to 50m turbine, plus occasional turbines up to 20m. The *Plateau Heaths and Pasture* landscape is largely wind turbine free, however a small concentration of turbines up to 50m are present at the eastern periphery of Kirkwall. These areas appear largely as either a *Landscape with Wind Turbines* or a *Landscape with No Wind Turbines*.

Assessment of Residual Capacity for Future Development

The Head of Work to the north east of Kirkwall already includes turbines between 50 and 80m. Limited expansion of the current development is possible, but the addition of similar sized multi-turbine development would be out of scale with the compact landscape.

The headland of Tankerness is at present largely undeveloped as a wind turbine landscape, and while having characteristics suited to occasional larger turbines, its visual prominence from inland, including the adjacent A960, means it should be retained as largely wind turbine free, as relief to the more developed adjacent landscapes, with smaller scale developments up to 50m only.

Deerness is approaching its wind energy capacity. Residual capacity for turbines between 30 and 50m occurs on its western coast, and more widely there are only occasional opportunities for smaller scale developments of below 30m.

The more northerly *Coastal Basin* landscapes have greater residual capacity for turbines between 30 and 50m, while the southern area around St Mary's is approaching capacity.

There is low residual capacity for occasional turbines from 30 to 50m at the fringes of the *Plateau Heaths and Pasture*, while the small *Enclosed Bay Landscape* of Scapa Bay currently has no development and could accommodate some development no greater than 20m. There is no residual capacity for turbines in the area of *Cliff Landscapes*, which already has an array of three 20m turbines, nor in the adjacent area of *Low Moorland*.

Proposed limits to future development are primarily as a *Landscape with Wind Turbines*, with the exception of the Tankerness headland, the central elevated area of *Plateau Heath and Pasture*, and the periphery of Kirkwall, which should appear as *Landscapes with Occasional Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of East Mainland. Generic guidance for each LCT is provided in Appendix 3.

4 Low Island Pastures: Future developments of turbines between 50 and 80m to be concentrated on the headland to the north east of Kirkwall (Head of Work), preferably as an expansion of the existing larger turbine developments. The Garden and Designed Landscape at Balfour Castle, Shapinsay, may be sensitive to the siting of larger turbines on Carr Ness. Tankerness is to be largely retained turbine free.

5 Undulating Island Pastures: Residual capacity for turbines between 30 and 50m exists to the west of the B9051. Capacity for small turbine developments up to 30m is close to being reached over the majority of Deerness.

6 Coastal Plain: Refer to generic guidance.

7 Coastal Basins: Greater capacity exists in the landscape areas to the north of East Mainland. Turbines between 30 and 50m should usually be sited inland of the main A roads running through

the areas to avoid interruptions of views to sea. The southern area to the north of St Mary's is close to capacity.

8 Inclined Coastal Pastures: No turbines greater than 50m because of the small scale of the upland landscape inland. Turbines greater than 30m should be avoided on the west coast between the A961 and the sea where there are views to sea from the road.

11 Enclosed Bay Landscapes: Occasional small turbines up to 20m only, avoiding intrusion into views of St Magnus Cathedral.

13 Cliff Landscapes: No wind developments.

17 Low Moorland: No developments because of proximity to sensitive coastal landscapes and the presence of Rose Ness lighthouse and Beacon in the southern area.

18 Plateau Heaths and Pasture: Occasional turbine developments between 30 and 50m at the periphery of the area. Occasional small developments, up to 30m within the elevated central area when associated with farms or other developments. Skylining of turbines should be avoided, and the landscape maintained as mostly free from turbines in contrast to the more developed lowland areas.

More generally the presence of Kirkwall airport in this landscape may potentially give rise to the requirement for aircraft warning lights on some wind turbines, the visual impacts of which should be considered.

Scale issues arising where larger turbines are seen with farms and houses on Deerness. Additional turbines in excess of 50m should be avoided in this areas.

This 20m turbine development on the central Plateau Heaths and Pastures landscape is of an acceptable scale in this visually sensitive landscape type, with few effects on the wider landscape.

Table 6.2b East Mainland: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

East Mainland Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							East Mainland Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
4 Low Island Pastures	Medium	Medium	◑	◑	○	○	○	As generic assessment, but lower capacity on Tankerness					◑	○	○	○	○	*Landscape with Wind Turbines/Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-3, 5-10km*
5 Undulating Island Pasture	Medium	Medium	◑	◑	○	○	○	As generic assessment					◑	○	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-3, 5-10km*
6 Coastal Plain	Low - Medium	Low - Medium	◔	○	○	○	○	As generic assessment					◑	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
7 Coastal Basins	Medium	Medium	●	◑	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	◑	○	○	○	● ◑ ○ ○ ○ Turbines over 50m would be out of scale with low hills of the island					◑	○	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km*

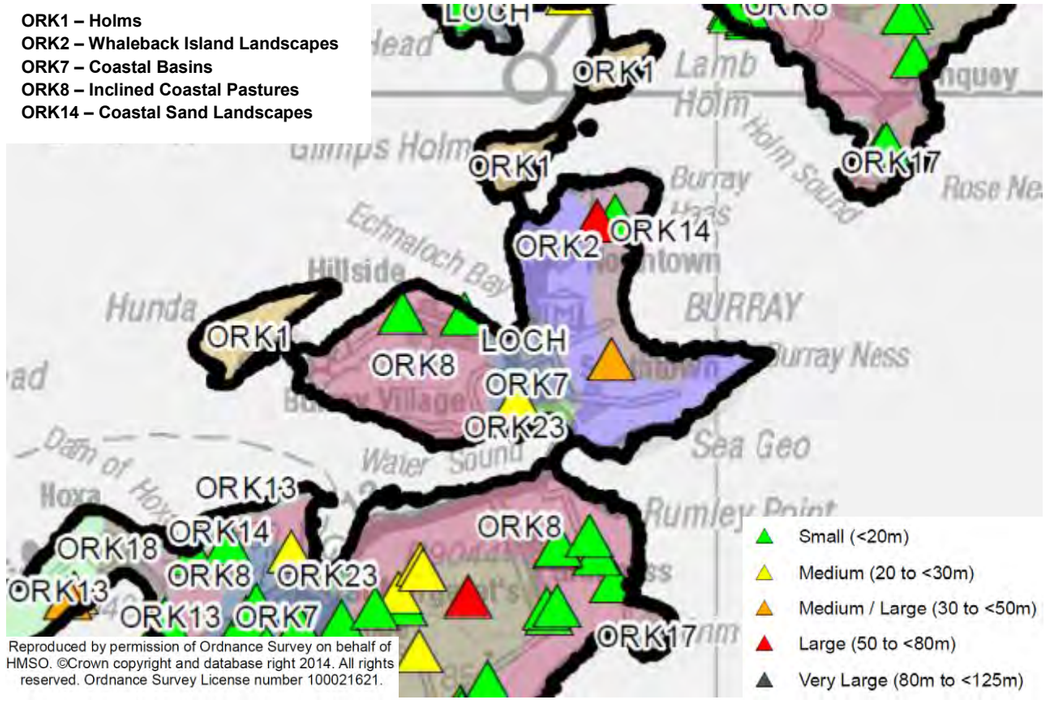
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

East Mainland Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							East Mainland Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
11 Enclosed Bay Landscapes	Medium - High	Medium - High	◑	◑	○	○	○	◑ Small extent of area, capacity reduced					◑	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km*
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
17 Low Moorland	Medium	Medium	◑	◑	●	●	●	○ Areas are small in extent, close to sensitive Cliff Landscapes, lighthouse and beacon					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
18 Plateau Heaths and Pasture	Medium	Low	◑	◑	◑	○	○	As generic assessment					◑	◑	◑	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 3-5km*

BURRAY

Burray is dwarfed by its island neighbours of Mainland and South Ronaldsay, to which it is linked via the 'Churchill Barrier' causeways. Five landscape types are identified on the island, indicating a subtle diversity of lowland landscape character. The small island is well populated and includes a village. The main route road between South Ronaldsay and Mainland passes through the island, and is therefore frequently transited through by road travellers.



Landscape Types in Burray (5 total)

1 Holms; 2 Whaleback Island Landscapes; 7 Coastal Basins; 8 Inclined Coastal Pastures; 14 Coastal Sand Landscapes

Description

Burray measures only 6km by 4km, of low lying, undulating character which rises to only 80m AOD at the high point of Hillside to the west of the island. The northerly coastlines are defined by large bays, creating an island of headlands with a pinched central landmass. The *Holm* of Hunda is linked by an artificial causeway to the west of Burray, while to the north the landmass of Mainland is accessed via the Churchill Barriers passing via Lamb Holm and Glimps Holm. Lamb Holm is the site of Italian Chapel, one of Orkney's most significant Second World War sites. A further short section of barrier to the south of Burray links to South Ronaldsay. The land cover is mostly pastoral and enclosed, with areas of heath on the higher ground to the west of the island.

To the east of the island is a *Coastal Sand Landscape* including the beach and dunes of Bu Sands.

Burray Village lies to the south of the island, while other more scattered developments extend to the north and south of Hillside on to the west of the island. The eastern part of the island is less developed, due to the larger agricultural land holding of the Bu of Burray.

The main A961 cuts north to south across the island, with minor roads either side providing local access. The Churchill Barriers are of significant historic interest, as are the blockships found in the waters surrounding the island, and the Italian Chapel constructed on Lamb Holm by prisoners of war.

Base Landscape Capacity for Wind Energy

Capacity for wind energy development is constrained on Burray by the small scale of the island, its settled, almost suburban character in parts, including a major road route. Larger turbines would tend to dwarf the low topography of the island, however smaller scale turbines could be accommodated within most of the landscape types of the island, with capacity for turbines between 30 and 50m on occasion. The nearby *Holms* have no capacity for turbines of any size and the setting of the Italian Chapel would be sensitive to intrusion from larger scale developments.

Consented Wind Developments in 2013

Only six consented turbine developments are found on Burray, including one 70m turbine to the north of the island, and a 46m turbine near Bu Sands. All other turbines are below 30m, and the landscape of Burray appears as a landscape with *Occasional Wind Turbines,* however the visual influence of the 70m turbine is considerable, with significant visual effects on Burray and extending to East Mainland and South Ronaldsay.

Assessment of Residual Capacity for Future Development

No capacity exists for further wind energy developments above 50m, however an additional turbine between 30 and 50m could be accommodated along with more widespread developments below 30m to follow the general pattern of housing and farm development. However the wind energy landscape should not extend beyond a *Landscape with Occasional Wind Turbines*, providing relief from the more energy intensive landscapes of East Mainland and South Ronaldsay. The *Holms* should be retained as *Landscapes with No Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Burray. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No wind energy developments.

2 Whaleback Island Landscapes: Little residual capacity exists given the existing larger turbines, other than occasional turbines to 30m.

7 Coastal Basin: This landscape character area is highly restricted in extent, and given its settled nature is unlikely to be able to accommodate turbines over 30m.

8 Inclined Coastal Pastures: This landscape character area can accommodate turbine developments at its periphery, but developments on the upper slopes of Hillside should be avoided due to their prominence. The setting to the Holm of Hunda should be respected by avoiding development on the west coast.

14 Coastal Sand Landscapes: No wind energy developments.

The existing 70m turbine on Burray is in a prominent location close to the main road, often seen with houses. Additional turbines should be carefully sited to avoid cumulative effects of large and small turbines being seen together.

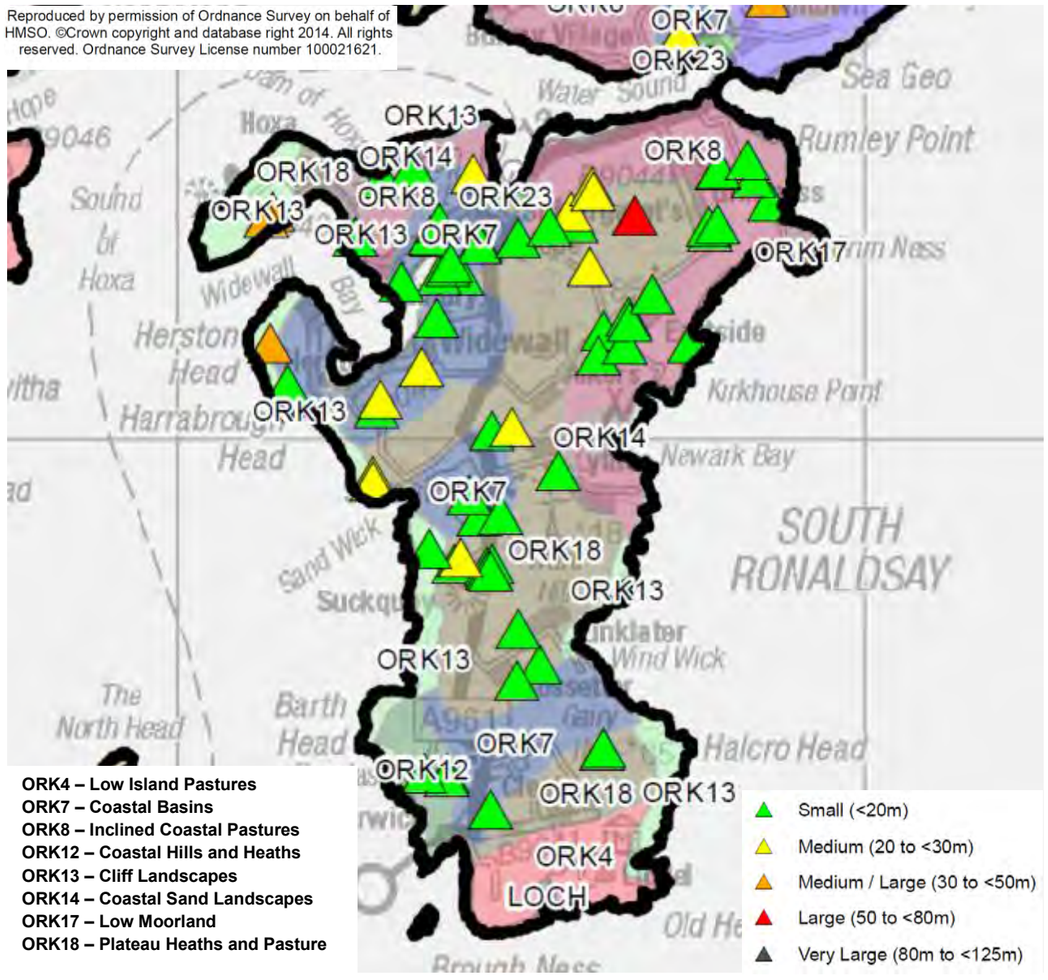
Table 6.2c Burray: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Burray Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
2 Whaleback Island Landscape	Medium	Medium - High	◑	◔	○	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1, 2km*
7 Coastal Basins	Medium	Medium	●	◑	◔	○	○	◑	◑	○	○	○ Reduced capacity because of the small extent of the area	◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km*
8 Inclined Coastal Pastures	Medium	Medium	●	◑	◔	◔	○	◑	◑	◔	○	○ Capacity reduced because of small scale island context	◔	◔	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1, 2-4km*
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	○	○	○	○	○ Retain free of wind energy	○	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings N/A*

SOUTH RONALDSAY

The most southerly of all the main Orkney Islands, South Ronaldsay is the fourth largest in Orkney, but of modest scale and size. It is the largest of the 'linked Islands', connected to Mainland via the Churchill Barrier causeways. This well connected island includes ferry ports with links to mainland Scotland and is a well settled agricultural landscape including the picturesque village of St Margaret's Hope.



Landscape Types in South Ronaldsay (8 total)

4 Low Island Pastures; 7 Coastal Basin; 8 Inclined Coastal Pastures; 12 Coastal Hills and Heath; 13 Cliff Landscapes; 14 Coastal Sand Landscapes; 17 Low Moorland; 18 Plateau Heaths and Pasture

Description

South Ronaldsay extends approximately 12km from north to south, and 8km from east to west at its widest point. The island landscape gently undulates, with an elevated central spine of *Plateau Heaths and Pasture* rising to at most 118m AOD, comprising shallow valleys and rounded low hills.

The island peripheries are agricultural lowland pastures; predominantly *Inclined Coastal Pastures*, *Coastal Basins* and *Low Island Pastures*. The coastline is irregular and usually rocky, with some *Cliff Landscapes* of low cliffs occurring around the island. To the north, the coast is characterised by enclosed bays, historically accommodating a small fishing industry and associated settlements.

The majority of the island is under pasture, with some arable production. Fields are rectilinear, and sometimes small, reflecting the historic traditions of land tenure. The more upland areas of heath are generally also enclosed, but fields tend to be larger. Field boundaries are almost entirely enclosed by fences.

As is the case in most of Orkney, farms and houses are dispersed throughout the island, the island is agriculturally productive and in good condition. St Margaret's Hope to the north of the island is the main centre of population, and the third largest settlement in Orkney. It includes a vehicle ferry link to the mainland and is therefore an important gateway to the wider Orkney islands, as well as being a visitor destination in its own right. Other concentrations of settlement on South Ronaldsay are scarce.

The A961 is the main road of the island, running north to south from the adjacent island of Burray to the north linking to Mainland, and to the ferry port at Burwick at the far south of the island. This main road often runs in an elevated position at the edge of the upland *Plateau Heaths and Pasture* sometimes with views over the island and the surrounding seascape towards the west. A network of minor roads and tracks connect to this main spine road, which are usually straight and aligned to the rectilinear field boundaries.

Ferries from Gills Bay on the Scottish Mainland to St Margaret's Hope pass to the west of the island.

Base Landscape Capacity for Wind Energy

The settled, pastoral, and relatively small scale of the South Ronaldsay landscape means that capacity for wind energy development is most suited to more small scale developments, up to 50m, with capacity for occasional development greater than this size.

The coastal *Inclined Coastal Pastures* and *Low Island Pastures* landscapes have widespread capacity for turbines up to 30m, and developments of 30 to 50m in small groups. Capacity for a small array of turbines from 50 to 80m is found in one area only on the *Low Island Pasture* to the very south of the island, which is largely free of development and remote from the wider island population further north, albeit with some sensitivity due to its proximity to nearby ferry routes, being one of the first parts of Orkney to be seen. Capacity for single turbines from 50 to 80m is available in the *Inclined Coastal Pastures* to the north east of the island.

The *Coastal Basins* landscapes, found mostly on the west coast, have limited capacity because of their small scale and enclosed, settled character. Capacity exists for occasional turbines from 30 to 50m, typically at their periphery, with wider capacity for turbines up to 30m. Particular areas of visual sensitivity occur around Widewall Bay to the north west of the island, where turbines would tend to be visible within the very enclosed bay landscape.

The *Plateau Heaths and Pasture* landscape, occurring mostly in the centre of the island, but occasionally in small areas closer to the coast, has constraints to both large and small developments. Large turbines (50 – 80m) would tend to dominate the low hills of this landscape type, while little built development is present with which to associate smaller scale turbines. Capacity is most constrained on the central high points, however there is capacity at the fringes of the character type, at lower levels, where small groups of turbines from 30 to 50m may be most appropriate.

The most constraints to wind energy developments occur on the *Cliff Landscapes*. Most of the west coast of the island is of this landscape type, while significant sections also occur to the south east and north west of the island. All areas of this type are sensitive, however those to the north and west are of particular sensitivity because of their populated hinterlands with views towards the distinctive Hoy Hills. This sensitivity extends to the small area of *Coastal Hills and Heath* found to the rear of the south western most *Cliff Landscape*.

The two small enclosed *Coastal Sand Landscapes* are generally unsuited to wind developments of any scale due to their small size and undeveloped character.

The small area of *Low Moorland* to the north east of the island, while of a landscape type generically suited to wind energy, is of a small scale and topography not dissimilar to a *Holm,* onto which turbines would be very prominent, and therefore has no capacity.

Consented Wind Developments in 2013

South Ronaldsay has an overall modest level of wind energy development, but some areas in which turbines are quite concentrated. The majority of turbines are below 30m, with only eleven turbines between 20 and 30m, three between 30 and 50m and one single consented 67m turbine. Developments are spread around the island, but occur most frequently to the west and north. The raised central area of *Plateau Heaths and Pasture* has few turbine developments, but includes the consented 67m turbine towards its north eastern edge. Turbines occur most frequently in the *Inclined Coastal Pastures* and *Coastal Basins* landscape character types. The *Cliff Landscapes* of the west coast have an unusually high level of wind energy development for this landscape type, with all three consented 30 to 50m turbines occurring here.

The two *Coastal Basin* landscapes to the north and west appear as the most developed landscape types on the island, appearing as *Landscapes with Wind Turbines.* The majority of the upland *Plateau Heaths and Pastures* appear as a *Landscape with No Wind Turbines*. The remainder of the coastal fringe appears as either a *Landscape with Occasional Wind Turbines*, or a *Landscape with No Wind Turbines*.

Assessment of Residual Capacity for Future Development

The greatest residual capacity for wind energy developments occur in the *Inclined Coastal Pastures* to the north east of the island, and the *Low Island Pasture* landscape to the very south of the island. The area of *Low Island Pasture* could accommodate development up to a small array of 50 to 80m turbines. The area of *Inclined Coastal Pastures* has capacity for turbines to 30m, and occasional 30 to 50m turbines, however suitable sites for turbines greater than 50m are limited, constrained by the existing consented 67m turbine nearby.

The *Coastal Basin* Landscapes to the north and west of the island, which currently mostly appear as *Landscapes with Wind Turbines*, have limited capacity for future development. Occasional additional turbines up to 30m may be appropriate, and exceptionally turbines from 30 to 50m at the inland periphery of the landscape areas may be acceptable subject to careful siting. The *Coastal Basin* to the south of the island is undeveloped and should remain so.

Residual capacity in the upland *Plateau Heaths and Pasture* is limited to occasional additional turbines to 30m with houses and farms. Opportunities for turbines between 30 and 50m are limited but appear greatest towards the less developed east coast of the island, while the consented 67m turbine constrains capacity for turbines of all types to the north of this character area.

There is no residual capacity in the *Cliff Landscape*, *Coastal Sand Landscapes*, *Coastal Hills and Heath* landscape types.

The future limits to wind energy development for the peripheral pastoral landscape of *Inclined Coastal Pastures*, the northern *Coastal Basins*, and *Low Island Pastures* is of a *Landscape with Wind Turbines*, while the area of *Plateau Heaths and Pasture* appearing as a *Landscape with Occasional Wind Turbines*. The sensitive coastal landscapes, such as *Cliff Landscape*, would appear as *Landscape with No Wind Turbines* or *Landscape with Occasional Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of South Ronaldsay. Generic guidance for each LCT is provided in Appendix 3.

4 Low Island Pastures: **Capacity for** turbines from 50 to 80m, in a group of up to three. Due to the small size of the area, and sensitivities arising from proximity to ferry routes, multiple developments of different size turbines should be avoided, however occasional turbines < 30m could be accommodated when separated from a larger 80m array***.***

7 Coastal Basin: Turbine development should be limited to occasional additional turbines up to 30m, exceptionally between 30 and 50m, to avoid the intensification of the existing *Landscape with Wind Turbines* typically to the north west of the island. The undeveloped character area to the south of the island should remain mostly turbine free.

8 Inclined Coastal Pastures: Additional development of up to 30m associated with farms and houses, with opportunities for well separated developments of 1-2 turbines up to 50m. No residual capacity exists for turbines over 50m.

12 Coastal Hills and Heath: No capacity for wind energy.

13 Cliff Landscapes: Further developments in this landscape type should be avoided.

14 Coastal Sand Landscapes: No capacity for wind energy.

17 Low Moorland: No capacity for wind energy.

18 Plateau Heaths and Pasture: Limited opportunities for turbine developments, but turbines typically up to 30m and occasionally between 30 and 50m would be acceptable in small groups located on the fringes of the character area, away from the plateau tops. The east side of the character area has relatively higher residual capacity, while the north is constrained by the existing levels of development. The character of the area should be maintained as a *Landscape with Occasional Wind Turbines*.

The central Plateau Heaths and Pasture landscape of South Ronaldsay, to be retained free of 50m+ developments, where turbine developments can be obtrusive in the open landscape.

Numerous smaller turbines around Widewall Bay, South Ronaldsay; this area is approaching capacity with few opportunities for further turbine developments.

Table 6.2d South Ronaldsay: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

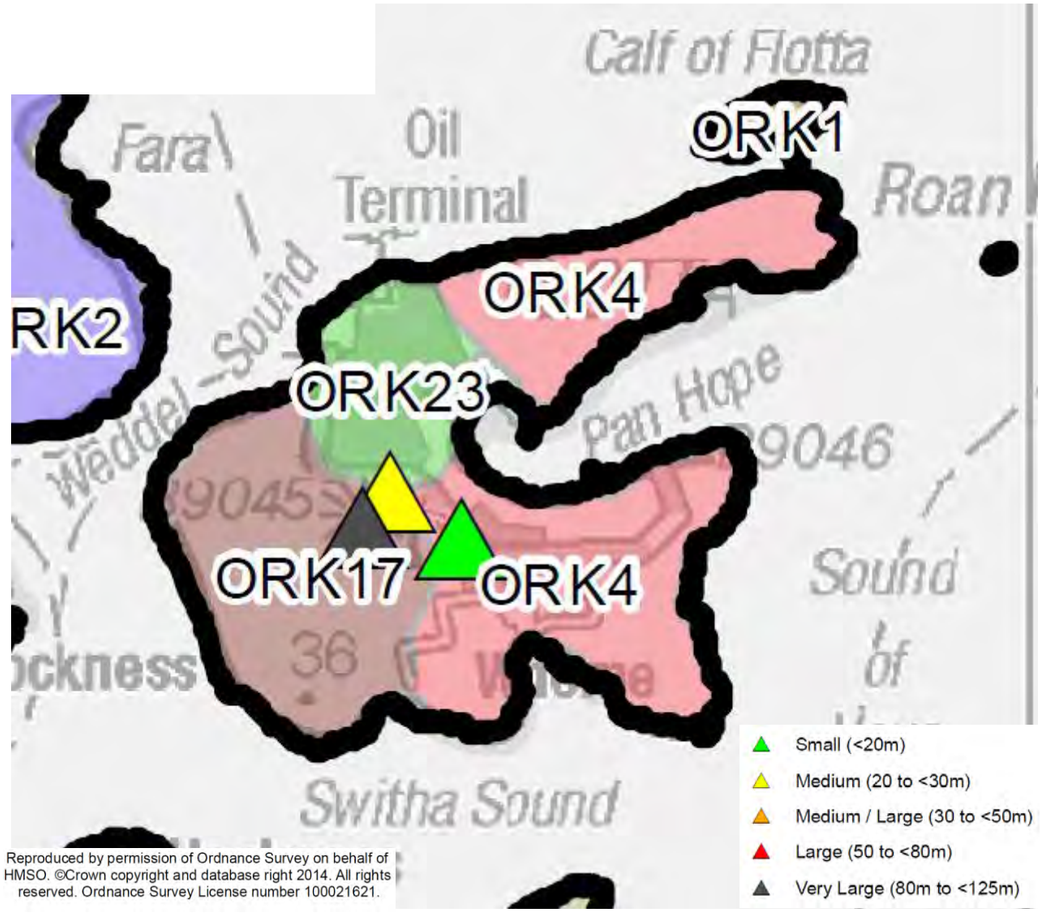
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

South Ronaldsay Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
4 Low Island Pastures	Medium	Medium	◑	◑	◔	◔	○	As generic assessment					◑	◑	◔	◔	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-3, 5-10km*
7 Coastal Basins	Medium	Medium	●	◑	◔	○	○	As generic assessment, but no development >20m in southern area					◔	◔	◔	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	◑	◔	◔	○	As generic assessment					◑	◑	◔	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km*
12 Coastal Hills and Heath	Medium - High	Medium - High	◔	◔	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings N/A*
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with Occasional / No Wind Turbines Spacings & Groupings N/A*
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	Sand landscapes are small scale and unsuited to wind development					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
17 Low Moorland	Medium	Medium	◔	◔	◑	◑	◑	Area is too small and visually exposed for wind energy					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
18 Plateau Heaths and Pasture	Medium	Low	◔	◔	◔	○	○	As generic assessment					◔	◔	◔	○	○	*Landscape with Occasional / No Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 3-5km*

FLOTTA

Flotta sits between Hoy and South Ronaldsay in a sheltered location at the southern end of Scapa Flow. One of the smaller Orkney Isles, but one of the most important economically, it is the location of the north sea oil terminal, the second largest north sea terminal after Sullom Voe in Shetland. The industrialisation resulting from the oil development is a strong influence on the island character. Parts of the less developed island landscape may offer opportunities for larger scale wind energy developments.



Landscape Types in Flotta (3 total)

1 Holms 4; Low Island Pastures; 17 Low Moorland

Description

Flotta extends approximately 5km from east to west, and 4km north to south, and is a low lying island rising to 58m AOD close to its centre. The island is situated only 1km to the east of the coast of Hoy, while the uninhabited island of Fara lies just off the north west coast. South Ronaldsay is just over 2km to the east. The island supports a permanent population of approximately 80 people.

The western side of the island is predominantly of *Low Moorland*, rising gently to the east from the undramatic rocky coastline, to the island high point of West Hill at 58m AOD. To the north is the oil terminal installation, which includes a number of large storage tanks, a flare stack, and piers intruding into the sea. To the north east of the oil installation is the small low lying peninsula of Golta, comprised of unenclosed heathland, while to the south east of the island the landscape is more pastoral with enclosed fields and the greatest concentration of farms and houses found on the island. Both of these areas are identified as *Low Island Pasture* landscape type, and they provide the enclosure for the sandy Pan Hope bay on the eastern side of the island. The small *Holm* of Calf of Flotta lies just to the north east of the island.

Peat cutting is an important economic activity, and scarring is widespread in the moorland landscapes. A small road network runs across the island linking the settled pastoral landscape to the south east to the island ferry terminal to the north west, while the moorland landscapes have little road access.

Flotta was an important military site during both World Wars, and sites of archaeological interest from this period are found around the island, for example at Stangar Head and Roan Head.

While large, the oil development is often unobtrusive when viewed from within the undulating landscape, with the flare stack often the only visible feature. The most dominant island feature is the 100m turbine on at the top of West Hill, clearly visible from around Scapa Flow. From high points of the island panoramic views are possible across Scapa Flow to the dramatic Hoy Hills and the more settled landscapes of Mainland and South Ronaldsay.

Base Landscape Capacity for Wind Energy

The location of the island at the heart of Scapa Flow means that large turbine developments would be prominent features for the surrounding islands, and would be visible in the distance from within the National Scenic Area.

The unpopulated, simple *Low Island Pasture* landscape found to the north east of the island on the Golta peninsula has potential to accommodate a turbine grouping between 50 and 80m, the acceptable size of turbines being constrained to an extent by the proximity of settlement, and the location of the island at the heart of Scapa Flow. The suggested size and scale would not result in unacceptable levels of further industrialisation in addition to that of the oil terminal.

The *Low Moorland* to the west also has some capacity for larger turbines, between 50 and 80m, however its proximity to settlement, roads, and its aspect facing Lyness on Hoy makes this area less suited to larger turbine developments.

The *Low Island Pastures* to the south east should be kept free from larger turbine developments, but would be influenced by the presence of turbines on Golta and/or the *Low Moorland* to the west of the island. This landscape area could widely accommodate turbines to 30m and/or more occasional turbines from 30 to 50m at the periphery.

Consented Wind Developments in 2013

Wind energy developments on Flotta are limited to the 100m turbine, a single 20-30m turbine, and a single turbine of <20m. All turbines are located at the centre of the island. The main Flotta turbine is one of the highest in Orkney, with only those on Burgar Hill and Sanday being of greater height.

The landscape currently appears as a *Landscape with Occasional Wind Turbines*, with the exception of the Golta peninsula to the north east, appearing as a *Landscape with No Wind Turbines*.

Assessment of Residual Capacity for Future Development

Residual capacity in the area of *Low Moorland* to the west of the island is affected by the presence of the existing 100m turbine. As a single turbine there is a logical association between the turbine and power generation for the island and its industry, and this association may be lost with an expanded more obviously commercial development. The unused capacity of the Golta peninsula provides a better location for larger scale wind energy developments.

Unused base capacity means good opportunities for turbines to 30m associated with the farms and houses to the south east of the island, and more occasional turbines from 30 to 50m.

Flotta would appear as a *Landscape with Wind Turbines* to the north east on Golta, with a *Landscape with Occasional Wind Turbines* elsewhere.

The Golta peninsula, seen beyond the oil terminal, has capacity for larger scale wind energy developments.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Flotta. Generic guidance for each LCT is provided in Appendix 3.

***1 Holms*:** No wind energy developments.

4 Low Island Pastures: The Golta peninsula to the north is suitable for an array of 50 – 80m turbines. Development to the south east should be at a smaller scale, with turbines to a maximum of 30 to 50m on the coast. Care should be taken to avoid creation of a *Wind Turbine Landscape* due to the cumulative effects of multiple scales of turbine developments.

17 Low Moorland: No development in addition to the existing 100m turbine is recommended.

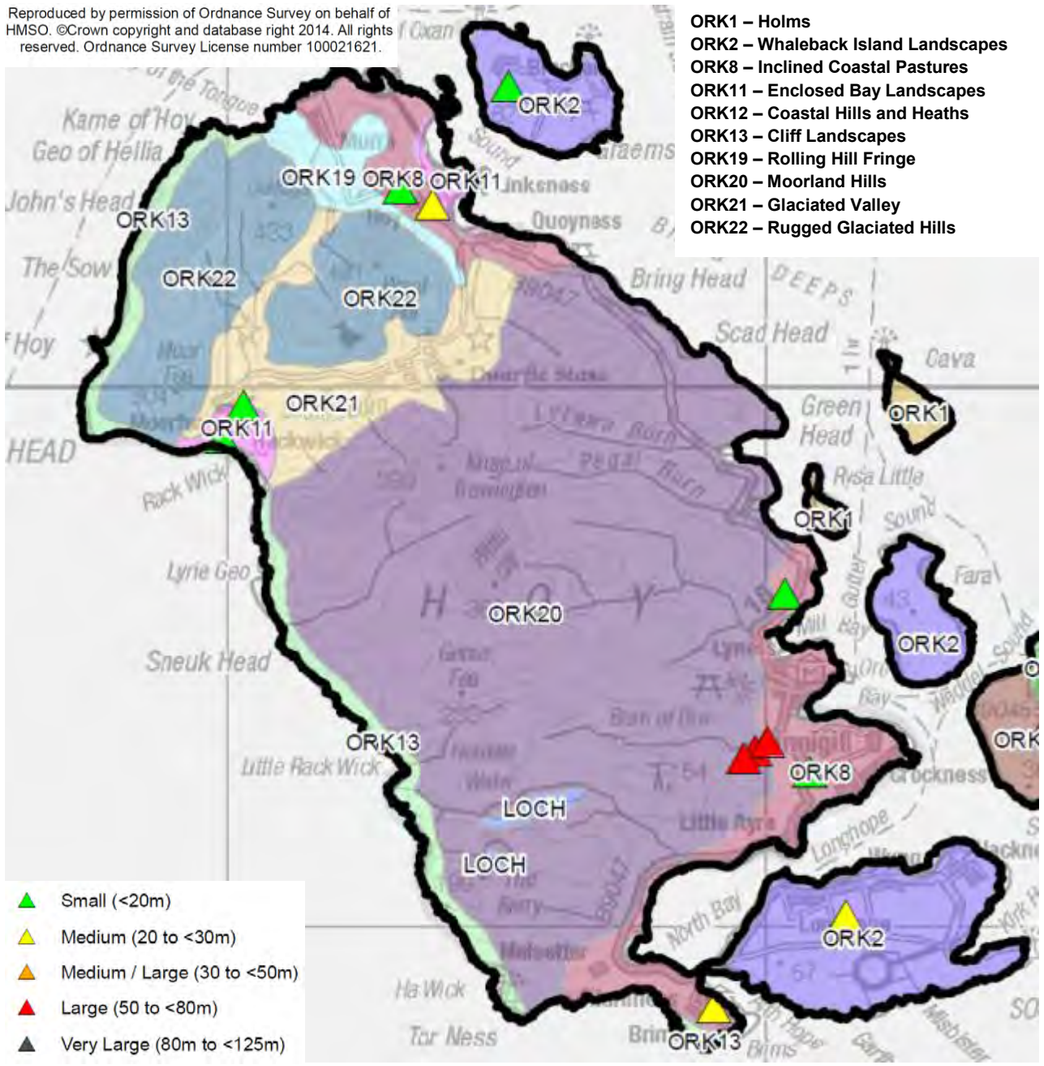
Table 6.2e Flotta: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Flotta Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	●	●	●	●	○	●	●	●	●	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-3, 5-10km*
								Reflects higher capacity for 30 - 80m turbines on Golta										
17 Low Moorland	Medium	Medium	◔	◔	●	●	●	◔	◔	◔	◔	○	○	○	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 2-5km 50-80m:1, 5km*
								Low capacity because of small island, nearby settlement, qualities of wildness										

HOY

Hoy is the second largest of the Orkney islands, and for the purposes of this study includes the peninsula of South Walls and outlying islands of Graemsay, Fara, Cava and Rysa Little. Hoy is the least developed of the main Orkney islands, its interior dominated by hills of significantly greater height than those in the rest of the archipelago, with its rugged western coast exposed to the Atlantic Ocean. Of all the Orkney islands Hoy has the highest wilderness characteristics, reflected by a National Scenic Area (NSA) designation for much of the north if the island, and designation of much of the island as an SNH Wild Land Area). These wilderness characteristics and scenic value are a major constraint on potential wind energy development. In contrast, the south eastern coast of Hoy opposite Flotta has many signs of industrial scale development associated with the past naval base of Scapa Flow and the current developing marine renewables industry.



ORK1 – Holms
ORK2 – Whaleback Island Landscapes
ORK8 – Inclined Coastal Pastures
ORK11 – Enclosed Bay Landscapes
ORK12 – Coastal Hills and Heaths
ORK13 – Cliff Landscapes
ORK19 – Rolling Hill Fringe
ORK20 – Moorland Hills
ORK21 – Glaciated Valley
ORK22 – Rugged Glaciated Hills

Landscape Types in Hoy (9 total)

1 Holms; 2 Whaleback Island Landscapes; 8 Inclined Coastal Pastures; 11 Enclosed Bay Landscapes; 13 Cliff Landscapes; 19 Rolling Hill Fringe; 20 Moorland Hills; 21 Glaciated Valley; 22 Rugged Glaciated Hills

Description

Hoy is approximately 10km wide and extends 17km from north to south, located to the south west of West Mainland, separated by the Hoy Sound. The majority of the interior comprises rounded *Moorland Hills*, rising to approximately 400m at their highest point. To the north of the islands are the *Rugged Glaciated Hills*, which in comparison to the *Moorland Hills* are steeper, more rugged and higher, including the highest point on Orkney, Ward Hill, at 479m AOD. The glaciated hills and valleys of northern Hoy are distinctive features, recognisable from much of southern Orkney, and key contributors to the scenic qualities resulting in the NSA designation.

Almost the entire western coastline is of landscape type *Cliff Landscapes*, and at over 300m includes some of the highest cliffs in the United Kingdom, with notable geological features such as the Old Man of Hoy sea stack. A small area of *Enclosed Bay Landscape* at Rackwick provides the only break in this landscape type. Rackwick is the only area of settlement on the west coast, connected to the east via the u-shaped *Glaciated Valley* which links to Quoyness on the north east coast.

The main areas of settlement occur on the north eastern and south eastern coastal fringes, in landscape types *Rolling Hill Fringe* and *Inclined Coastal Pastures.* South Walls, connected to the south east of Hoy and connected by a short tombolo, is of landscape type *Whaleback Island Landscapes*. These lowland landscape types are farmed, with rectilinear fields under pasture, enclosed usually by wire fences.

Development is in the form of scattered small farms, crofts and houses in the settled lowland areas, with the most concentrated development occurring around Lyness, the main ferry port. Derelict wartime infrastructure such as anti aircraft defences, encampments and storage facilities are still present in the landscape, especially around Lyness, which was an important naval base during both World Wars. Much of this infrastructure is of historical value, but in some instances its derelict state has an adverse effect on the perceived condition of the landscape. The military significance of the island is further evidenced by the Harkness Martello Tower and Battery on South Walls, dating from the 18th and 19th centuries.

Road connections on the island are limited, extending north to south along the east coast and onto South Walls, with one spur extending westwards to Rackwick. The road to Rackwick provides access to one of Orkney's most notable historic sites, the rock-cut Neolithic tomb of Dwarfie Stane.

Cava and Rysa Little are small islands of landscape type *Holms,* and are uninhabited. The larger Fara and Graemsay are of landscape type *Whaleback Island Landscapes.* Fara is also uninhabited however Graemsay, to the north east of Hoy, supports a small population.

Base Landscape Capacity for Wind Energy

All of the upland landscape character areas found on Hoy are sensitive to wind energy developments. The characteristics of wilderness found in these areas has resulted in the *Moorland Hills* of southern Hoy being identified by SNH as a draft Core Area of Wild Land. The northern *Rugged Glaciated Hills* and *Glaciated Valleys* are within the Hoy and West Mainland National Scenic Area (NSA). The *Cliff Landscape* type of the western coast is highly sensitive because the complexity of its landform and geological features, and its remote and wild character. The easternmost coastal fringes offer the best opportunities for wind energy developments. These landscapes are of modest condition, and industrial land uses are present in the landscape including modern marine renewables development, the Flotta oil terminal 4km to the east, and old naval and wartime infrastructure still widespread.

Where the *Inclined Coastal Pastures* to the south east of Hoy transition to the *Moorland Hills*, opportunities arise for the siting of larger turbines which can be located away from smaller scale lowland developments and take advantage of back clothing from higher *Moorland Hills*. Single or small groups of turbines from 50 to 80m height could be located in these areas, however the siting of turbines towards the north of the *Inclined Coastal Pastures* (between Mill Bay and Pegal Head) should be sensitive to the importance of this landscape as the transition to the NSA.

More widespread development of turbines up to 30m can be accommodated on the east coast, including South Walls, albeit its 'whaleback' creates greater sensitivity in its more elevated central area. The small area of *Enclosed Bay Landscapes* at Rackwick on the west coast has capacity only for small scale turbines up to 20m when associated with the small number of houses in the area.

The uninhabited islands of Rysa Little, Fara and Cava have no capacity for wind energy development. While Graemsay's location at the heart of the NSA results in high sensitivity to wind energy developments, capacity exists for turbines up to 20m, consistent with the capacity assessment for the *Whaleback Islands Landscape* character type.

Consented Wind Developments in 2013

Hoy has few consented wind energy developments. Three 67m turbines are consented on the east coast to the south west of Lyness, at the periphery of the *Moorland Hills* landscape type. Only three turbines between 20 and 30m are consented: one on South Walls; one near Moaness; and one at the very south of Hoy near Brims. Six small turbines of less than 20m are consented, including two at Rackwick and one on Graemsay.

The vast majority of the island appears as a *Landscape with No Wind Turbines*, with a small area of *Landscape with Occasional Wind Turbines* around Lyness because of the influence of the nearby 67m turbines.

Assessment of Residual Capacity for Future Development

Highest residual capacity for wind energy development is centred around Lyness to the south east of the island, extending north to Pegal Bay, and south to North Ness, encompassing the *Inclined Coastal Pastures* and the eastern fringes of the *Moorland Hills* landscape types. The existing 67m turbines constrain capacity for further 50 to 80m turbines within the *Inclined Coastal Pastures* / *Moorland Hills* fringe. Areas of disused land, for example near Rinnigill camp provide opportunities for siting turbines from 30 to 50m in small groups, where they can be located away from houses and farm buildings. Residual capacity exists for turbine groups up to 30m associated with farm buildings and houses in the farming landscape around Lyness.

Other areas of *Inclined Coastal Pastures* have capacity for small turbine groups up to 30m. To the north east, capacity for larger turbines is constrained by the National Scenic Area, while to the south east, approaching South Walls, topography becomes quite steep and locating larger turbines away from the main road and its ribbon of houses may prove difficult.

South Walls has residual capacity for turbines up to 30m in small groups, there being only one 20 to 30m turbine development currently present on the island.

Graemsay has the capacity to accommodate occasional additional turbines below 20m, singly or in small groups, however no residual capacity exists on the other islands included in the Hoy assessment.

At Rackwick, additional small scale turbines up to 20m would be acceptable, but preferably grouped to avoid visual clutter within this sensitive landscape area.

The majority of Hoy would be retained as a *Landscape with No Wind Turbines*, with a *Landscape with Wind Turbines* on the east coast centred around Lyness. The extent of wind energy development for the north east coast including Graemsay, and the far south eastern coast including South Walls is limited to a *Landscape with Occasional Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Hoy. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No wind energy developments.

2 Whaleback Island Landscapes: Turbines are to be avoided on the more elevated parts of the South Walls 'whaleback', but a widespread capacity for turbines up to 30m is available. Turbines on Graemsay should be occasional only, limited to 20m. Fara is unsuitable for turbines given its undeveloped character.

8 Inclined Coastal Pastures: More intensive wind developments are possible near Lyness, including from 30 to 50m in some more isolated lowland locations. Turbines proposed for the more sensitive northern part of this character area require careful assessment and siting due to the transitional nature of the landscape approaching the NSA. Turbines between 50 and 80m would be more suited to the neighbouring *Moorland Hills* landscape type. Turbines should not exceed 30m within the NSA.

11 Enclosed Bay Landscapes: Limited capacity for occasional 20m turbines associated with the Rackwick Bay settlement. Consider grouping turbines to avoid visual clutter. Encroachment into the neighbouring Glaciated Valleys landscape type should be avoided.

13 Cliff Landscapes: No wind energy developments.

19 Rolling Hill Fringe: Very limited opportunities for occasional turbines up to 30m. The lack of development within the area provides few opportunities for siting turbines. Furthermore isolated turbines of this scale may not appear rational in the landscape, while there is no capacity for larger turbines within this sensitive landscape area.

20 Moorland Hills: Underlying capacity for 50 to 80m turbines on the eastern fringes only, close to Lyness and no further north than Pegal Head, with developments between Mill Bay and Pegal Head of particular sensitivity as the landscape transitions between Lyness and the undeveloped coastline towards the NSA. There is no residual capacity for 50 to 80m turbines given the consented 67m development. Turbines below 30m would appear out of scale within this larger scale landscape type. Turbines of this size should usually be aligned to landform rather than man made features if in groups. Siting on steep slopes should be avoided.

21 LCT Glaciated Valleys; 22 Rugged Glaciated Hills: No wind energy developments.

Views towards the distinctive glacial hills and valleys of northern Hoy should be maintained free from the influence of wind energy developments, especially within the NSA.

Table 6.2f Hoy: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Hoy Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with Wind Turbines/Landscape with Occasional Wind Turbines Spacings & Groupings N/A*
2 Whaleback Island Landscape	Medium	Medium - High	●	◔	○	○	○	As generic assessment					●	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	●	◔	◔	○	● ● ◔ ○ ○ No turbines greater than 30m within the NSA					●	◔	◔	○	○	*Landscape with Wind Turbines/Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km*
11 Enclosed Bay Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	◔ ○ ○ ○ ○ Lower capacity because of small scale and sensitive setting					◔	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km*
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*

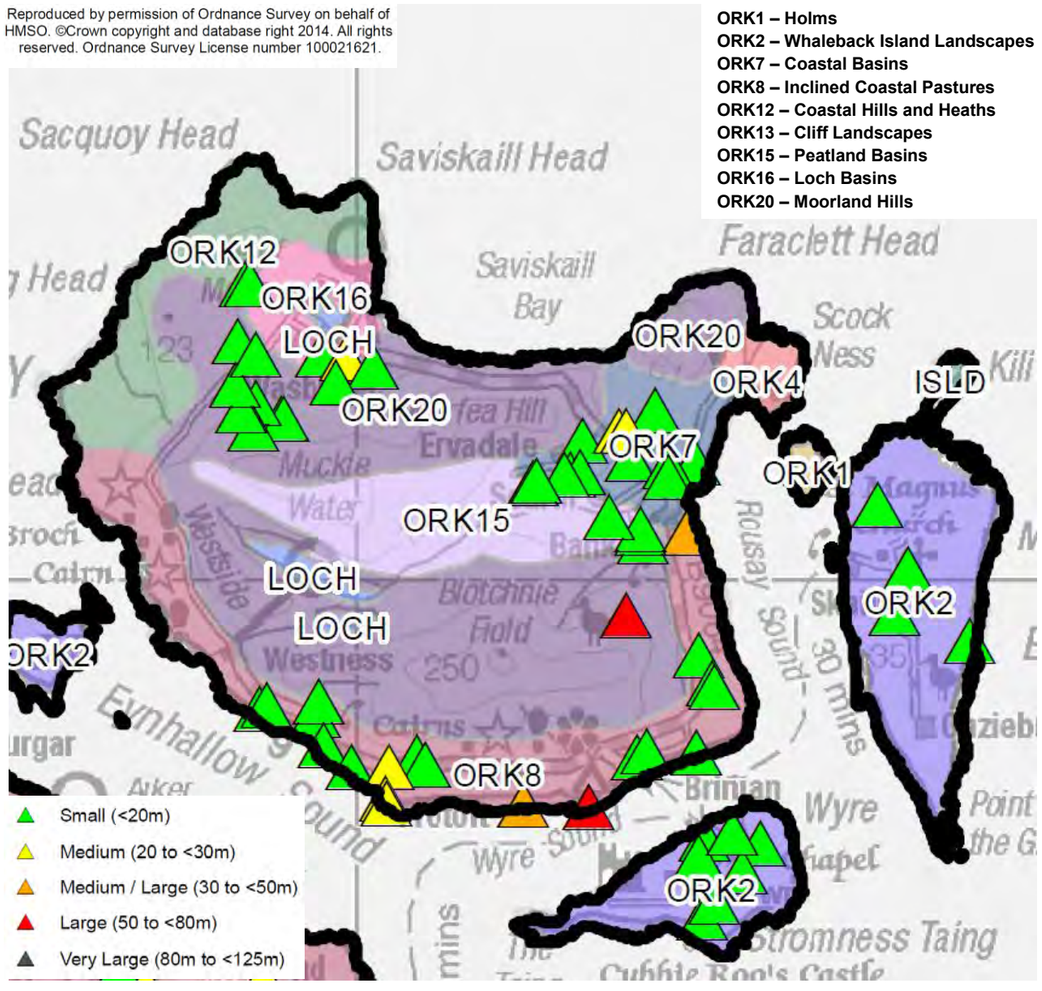
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Hoy Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
19 Rolling Hill Fringe	Medium	Medium	●	●	◔	○	○	◔ ◔ ○ ○ ○ Reduced capacity because of proximity to sensitive glaciated hill backdrop, NSA					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-2km 20-30m:1-2, 1-2km*
20 Moorland Hills	Medium	Medium - High	◔	◔	◔	◔	○	○ ○ ◔ ◔ ○ Development only in a limited area because of wilderness characteritics, NSA					○	○	◔	○	○	*Landscape with No Wind Turbines/ Landscape with Wind Turbines Spacings & Groupings 30-50m:1-3, 3-5km 50-80m:1-3, 5-10km*
21 Glaciated Valley	Medium - High	High	◔	○	○	○	○	As generic assessment					◔	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1, 0.5km*
22 Rugged Glaciated Hills	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*

ROUSAY (including Egilsay, Wyre and Eynhallow)

Rousay is the largest and most hilly of the island group comprising the Inner North Isles. Separated from Mainland by the narrow Eynhallow Sound, the island has much in common with West Mainland, with a high interior of Moorland Hills fringed by low pastures, coastal and loch basins. The upland character of Rousay contrasts with the smooth relief of the satellite islands of Wyre and Egilsay and Eynhallow.



Landscape Types in Rousay (9 total)

1 Holms; 2 Whaleback Island Landscapes; 4 Low Island Pastures; 7 Coastal Basins; 8 Inclined Coastal Pastures; 12 Coastal Hills and Heath; 15 Peatland Basin; 16 Loch Basins; 20 Moorland Hills

Description

Rousay is roughly circular in shape, contrasting with the more elongated island forms usually found in Orkney. The island extends approximately 8km both east to west and north to south, with a central core of *Moorland Hills* rising to over 227m AOD at the highest point. Distinctive terracing is noticeable on the coastal slopes, making the Rousay hills easily identifiable. Within these *Moorland Hills* is the largest area of *Peatland Basin* found on Orkney, unusual because of its upland location and more sloping topography compared to other areas of the same landscape type, usually found in lowland areas. This basin landscape descends eastwards, transitioning into a *Coastal Basin* at the north east of the island.

Much of the southern and eastern island fringe is of narrow *Inclined Coastal Pasture*, while a *Loch Basin* is situated around the small Loch of Wabister to the north west of the island, separated from the *Coastal Basin* further east by *Moorland Hills* descending steeply to the sea along the northern coast. Further to the west the coast is elevated and rugged in character, of the *Coastal Hills and Heath* landscape type.

Lowland pastures are typically enclosed, under pasture and arable production, with houses and farms occurring frequently within the lowland landscapes. Developments extend into the fringes of the *Moorland Hills*, ruined farms and crofts becoming more frequent in these less agriculturally viable upland areas. Trumland House, to the south east, is the island's largest house with a formal garden and sycamore plantations. Development is scattered throughout the lowland areas, more concentrated in the *Coastal Basin* and *Loch Basin* landscape types.

The island is circumnavigated by a minor road with occasional side roads and tracks, and small road networks are present in the lowland *Loch Basin* and *Coastal Basin* landscape types.

Archaeological sites encompassing a wide historical period are prevalent, and a key source of visitor interest.

The outlying islands of Egilsay and Wyre are of a classic *Whaleback Island Landscape* typology, with smooth relief and slightly domed, at no more than 35m AOD in elevation. Both the islands are populated with small crofts and farms, and the landscape is of enclosed pasture. The small island of Eynhallow in uninhabited, but includes the ruins of Eynhallow Monastery. The uninhabited small *Holm* of Varaquoy lies between Egilsay and Rousay.

Base Landscape Capacity for Wind Energy Development

The scale of Rousay is small despite its high hills. The topography is often steep, with flatter coastal areas usually settled with farms and houses, providing few suitable locations for larger scale wind developments. The interior of Rousay and its northern and western coast have an undeveloped, upland character which would be sensitive to developments of any scale; large turbines appearing on the hill tops would dominate the island.

The best capacity for larger turbines exists at the periphery of the *Coastal Basin* landscape, extending into the fringes of the *Moorland Hills* landscape types, but should not exceed single 50m turbine developments. While similar in character, the *Loch Basin* and surrounding landscape to the north west of the island is smaller scale, with capacity for turbines up to 30m only.

The steep topography of the southern *Inclined Coastal Pastures* creates difficulties in locating larger turbines, and archaeological sites are numerous, with larger turbines located on the coast obtrusive in sea views from the elevated perimeter road. The western part of this area becomes less developed as it approaches the *Coastal Hills and Heaths* landscape, and becomes unsuited to wind energy developments of all scales. The maximum recommend turbine size in this area is 30 to 50m

Turbines up to 20m are appropriate on Egilsay and Wyre, but larger turbines could dominate the low island forms. The other islands within the group have no capacity for wind energy.

The *Moorland Hill* tops and the majority of the *Peatland Basin* to the centre of the island have no capacity for wind energy developments so as to retain the upland wildness characteristics of the island interior, although some development to 20 or 30m may be appropriate with farms or houses at the *Moorland Hill* fringe, or 30 to 50m turbines at the fringes of the *Coastal Basin* and *Inclined Coastal Pastures* landscape types. The *Coastal Hills and Heath* to the west, and the small exposed *Moorland Hills / Low Island Pastures* of Faraclet Head have no capacity for wind energy developments.

Consented Wind Developments in 2013

Rousay has two consented 67m single turbine developments: one in a quite elevated location to the south east of the *Moorland Hills* landscape character area; the other on the south eastern coastline opposite the island of Wyre. 1 km to the west of this turbine is a single 30 to 50m turbine, while another is located on the east coast opposite Egilsay. Small and medium turbines, mainly of 20m but occasionally up to 30m are found predominantly along the southern *Inclined Coastal Pastures*, around the north eastern *Coastal Basin*, and the north western *Loch Basin*. Egilsay and Wyre have scattered developments of single 20m turbines.

The upland interior and western coast appear as a *Landscapes with No Wind Turbines* , while much of the *Inclined Coastal Pastures* and *Loch Basins* appear as a *Landscape with Occasional Wind Turbines*. The *Coastal Basin* to the north east of the island has the most developed wind energy landscape, appearing as a *Landscape with Wind Turbines*. The majority of the islands of Wyre and Egilsay appear as a *Landscape with Occasional Wind Turbines*.

Assessment of Residual Capacity for Future Development

Residual capacity for wind energy developments is limited on Rousay, with small and medium sized turbines frequently occurring within the lowland settled landscapes. Small increases in the extent of wind energy developments up to 30m could be accommodated within the *Inclined Coastal Pastures* landscape type, but there is no residual capacity for turbines between 30 and 50m.

The landscape of the *Coastal Basin* is close to capacity, with the 67m turbine viewed with turbines of varying size in an enclosed landscape setting. Minor small scale development typically of 20m may be possible, but the creation of a *Wind Turbine Landscape* is a risk of further development. The area in the vicinity of the north western *Loch Basin* has low capacity for additional turbines up to 30m.

The islands of Egilsay and Wyre could accommodate occasional additional 20m single turbine developments. The islands of Eyanhallow and Varaquoy have no residual capacity.

The wind energy landscape types as they currently appear, described above, should largely be maintained.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Rousay. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No developments.

2 Whaleback Island Landscapes: Development of < 20m only, as single turbines and well spaced on the islands of Wyre and Egilsay only, associated with farms, houses and other developments.

4 Low Island Pastures: No developments due to the exposed nature of the landscape area on Rousay.

7 Coastal Basins: There is limited underlying capacity for 30 to 50m turbines sited to the inland periphery of the area. This landscape appears close to capacity because of the variety of turbine developments in view. Limited residual capacity for occasional turbines up to 30m.

8 Inclined Coastal Pastures: Turbines between 30 and 50m would be best accommodated to the landward side of the perimeter road. No developments greater than 50m are recommended because of the small scale, narrow, and steep nature of the landscape area. Residual capacity is limited to turbines < 30m and development to the west of Westness Farm should be avoided.

12 Coastal Hills and Heath: No developments.

***15 Peatland Basin*:** Smaller scale developments at the eastern periphery only, up to 20m when associated with farms and housing. The majority of the landscape area is to remain turbine free.

16 Loch Basins: On Rousay this landscape is small scale, and development should be limited to no more than 30m to retain a *Landscape with Occasional Wind Turbines*.

20 Moorland Hills: Generally no developments within this landscape area, except for smaller scale turbines, up to 30m sited with peripheral farms and houses, or 30 to 50m turbines at the fringes of the *Inclined Coastal Pastures* / *Coastal Basins*.

Numerous small turbines seen against the Rousay Hills in the eastern Coastal Basin landscape. Capacity for future development is limited within this area.

Turbines on the southern coast of Rousay, prominent when located between the road and the sea.

The 67m turbine has a strong influence on the nearby Coastal Basin. Several smaller turbines would be preferable to a single large turbine within this enclosed landscape type.

Table 6.2g Rousay: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Rousay Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
2 Whaleback Island Landscape	Medium	Medium - High	●	◔	○	○	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km*
								Due to small scale, undeveloped character of Wyre and Eglisay										
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	○	○	○	○	○	○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
								Landscape area is exposed and small, unsuited to wind development										
7 Coastal Basins	Medium	Medium	●	●	◔	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	●	◔	◔	○	●	●	◔	○	○	●	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km*
								Small scale limits capacity for 50m+ turbines										

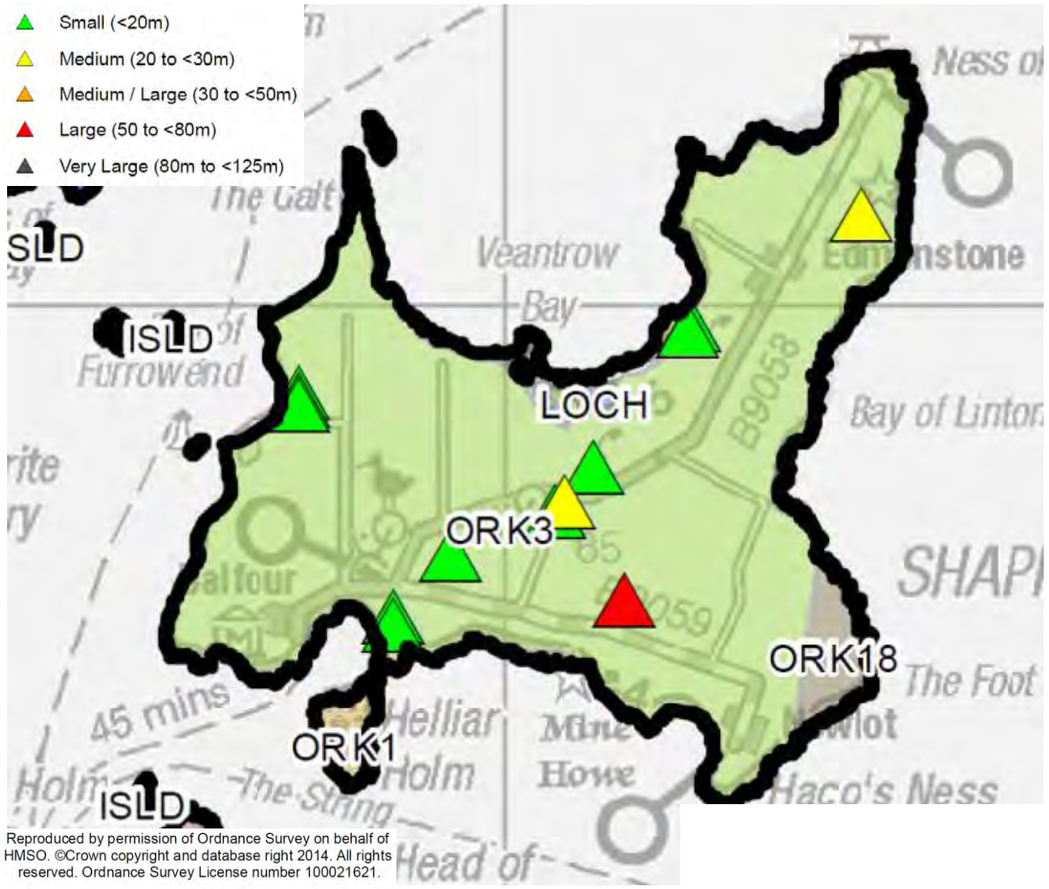
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Rousay Landscape Character Types	Generic Landscape Type Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
12 Coastal Hills and Heath	Medium - High	Medium - High	◔	◔	○	○	○	○	○	○	○	○	○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
								Exposed undeveloped character to be retained										
15 Peatland Basins	Medium	Medium	◔	○	○	○	○	As generic assessment					◔	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1, 1km*
16 Loch Basins	Medium	Medium - High	●	●	◔	○	○	●	◔	○	○	○	◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-2km 20-30m:1-2, 3-5km*
								Small scale landscape reduces capacity										
20 Moorland Hills	Medium	Medium - High	◔	◔	●	●	○	◔	◔	◔	○	○	◔	◔	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1, 3km*
								Capacity reduced because of small scale, steepness of topography										

SHAPINSAY

Lying only a short distance from Mainland, Shapinsay appears almost as part of the pastoral lowlands of north east Mainland, separated by a narrow sound. This island is unusual in its uniformity of landscape character, almost entirely comprised of Ridgeline Island landscape type, with strong lands cape patterns the result of agricultural improvements.



Landscape Types in Shapinsay (3 total)

1 Holms; 3 Ridgeline Island Landscape; 18 Plateau Heaths and Pasture

Description

The island of Shapinsay lies approximately 6km to the north east of Kirkwall harbour, extending 8km both east to west and north to south from the island's extremities. There is a population of approximately 300 dispersed throughout the island. There is one village, Balfour, towards the south west of the island which includes the ferry pier for Mainland services.

The island is characterised by its regular pattern of rectilinear fields, under pasture and arable production. A square 'grid' of 10 acre fields resulting from 19th century agricultural improvements is still present in the landscape today, often separated by drystone walls. The landscape is almost entirely of low lying *Ridgeline Island Landscape* rising to 64m AOD. The minor roads of the island typically run along the higher island ridges, with agricultural land falling away to the coast on gently sloping ground. A small area of *Plateau Heaths and Pasture* is found adjacent to the coast to the south east of the island, while the small uninhabited Hellier Holm (landscape type *Holms*) lies just offshore to the south east of Balfour.

Development outside the village of Balfour is of scattered small farms and dwellings, connected by minor roads and tracks which are often straight and laid out in a rectilinear pattern. The baronial style Balfour Castle and grounds occupy the south western corner of the island. The grounds are one of only two Historic Gardens and Designed Landscapes in Orkney, the woodland within the grounds being the largest wooded area in Orkney.

Base Landscape Capacity for Wind Energy

The *Ridgeline Island Landscape* of Shapinsay has a modest capacity for smaller scale wind energy development. Its sensitivity derives from an openness of character, with wide views over the landscape type and beyond often possible from the elevated ridges. The landscape is well maintained, with a strong pattern of fields, and well spaced farms and houses.

Within the *Ridgeline Island Landscape* there is a moderate capacity for turbines up to 30m, in keeping with the small scale, settled and productive landscape of the island. Turbines at the upper end of this scale can appear prominent on the ridgeline, and out of scale when situated near small buildings. Capacity exists for occasional single turbines between 30 and 80m when sited away from houses.

The small area of *Plateau Heaths and Pasture* provides the only opportunity for small groups of turbines, from 30 to 50m, because of its lack of development, opportunities to site turbines away from houses and farm buildings, and its inconspicuous location at the island periphery.

Consented Wind Development in 2013

Shapinsay has a lower level of wind energy development compared to many other lowland landscapes found in Orkney. There are only thirteen turbines on the island, of which ten are below 20m, two are between 20 and 30m, and one is a 67m community turbine.

Most developments are of single turbines, with occasional groups of 2 – 3 turbines below 20m. All turbines are found within the *Ridgeline Island Landscapes* character type, generally well separated and distributed around the island.

The majority of the island is a *Landscape with Occasional Wind Turbines* with the south western and south eastern corners a *Landscape with No Wind Turbines*.

Assessment of Residual Capacity for Future Development

The majority of Shapinsay should be retained as a *Landscape with Occasional Wind Turbines* with its strong pattern of fields and low density development remaining largely unaffected by the addition of wind energy developments. The area in the vicinity of Balfour, including the house and grounds of Balfour Castle, should be retained as a *Landscape with No Wind Turbines*.

Residual capacity exists for occasional single larger turbines between 30 and 50m. At the separation distances of 3 – 5km recommended in the generic landscape capacity assessment, this would mean no more than one or two additional developments, well separated from the existing single 67m community turbine. Given the recommended separation distances additional turbines over 50m are unlikely to be appropriate on the island.

The area of *Plateau Heaths and Pasture* has capacity for a small array of up to 3 turbines, up to 50m in height. However a development in this location would be only 2km from the existing 67m turbine, and cumulative effects would require careful consideration, albeit the location is quite remote.

Further capacity for turbines up to 30m exists throughout the *Ridgeline Island Landscape*, associated with housing and farm developments. However relatively wide separation distances should be maintained, as suggested in the generic guidance, to limit the cumulative impacts of such developments within such an open landscape type.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Shapinsay. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No wind energy developments.

***3 Ridgeline Island Landscapes*:** Single additional turbine developments between 30 and 50m are possible, however separation distances and turbine groupings should be maintained following the generic guidance. The elevated ridgelines of the islands should be free of developments greater than 20m. The south west of the island around Balfour village and Balfour Castle should be maintained free of turbines.

18 LCT Plateau Heaths and Pasture: This area provides the opportunity for a small development of multiple turbines between 30 and 50m. The coastal periphery appears to have the highest suitability because of its separation from buildings. Turbine groups of this scale would be best aligned to natural topographic features or the coastline.

A 27m turbine appears prominent on the Ridgeline Island Landscape of Shapinsay, siting of 20m + turbine on prominent ridgelines should be avoided.

In the context of this view the 67m community turbine on Shapinsay has a reduced visual effect when seen with other vertical features such as power lines.

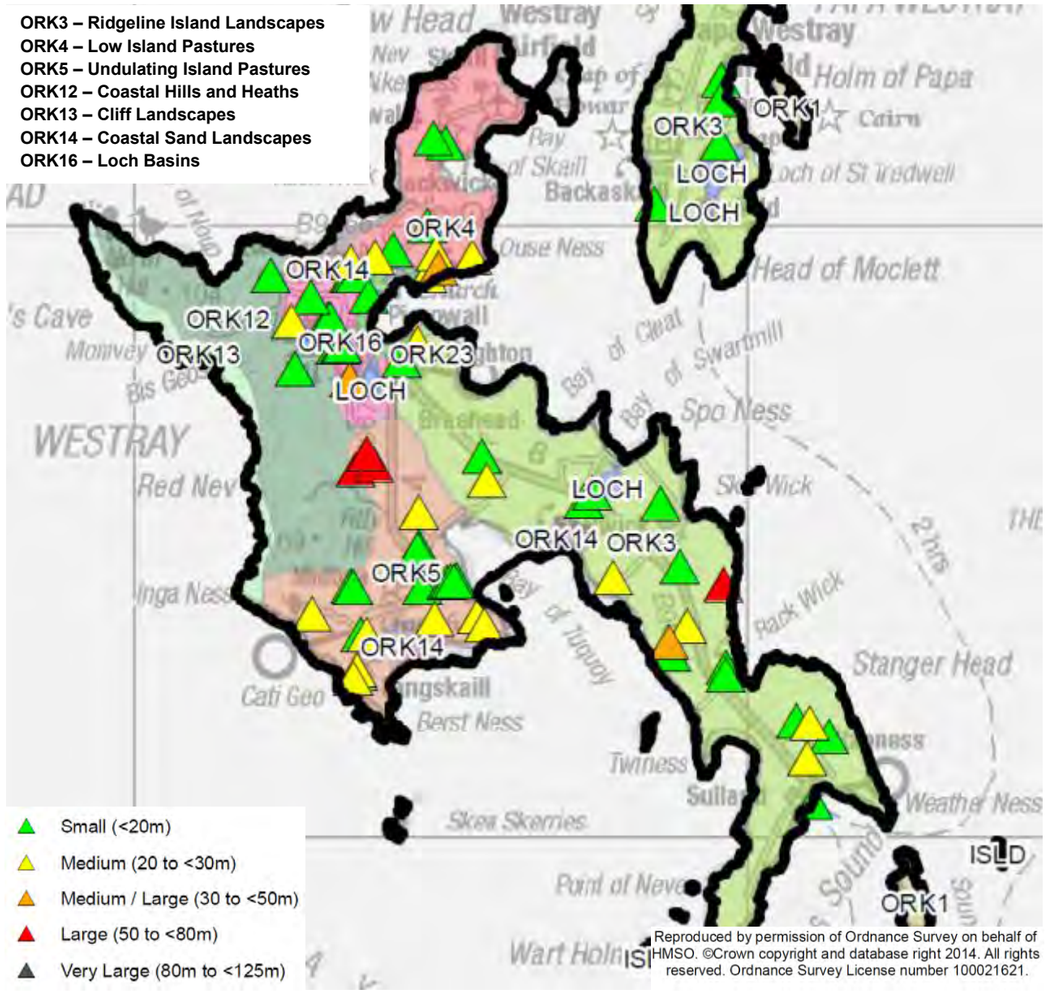
Table 6.2h Shapinsay: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity, Low Capacity, Medium Capacity, High Capacity

Shapinsay Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium						As generic assessment										*Landscape with No Wind Turbines Spacings & Groupings N/A*
3 Ridgeline Island Landscapes	Medium	Medium	●	●				As generic assessment										*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1-3, 2-3km 30-50m:1, 3km*
18 Plateau Heaths and Pasture	Medium	Low						As generic assessment										*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 3-5km*

WESTRAY

Westray is the most westerly of the Outer North Isles, its character defined by full exposure to the Atlantic on its Western Coast. Remote coastal hills and cliffs provide shelter to the more settled lowland landscapes to the east. Despite the outlying nature of the island, it is well populated, benefiting from productive agriculture and fishing industries.



Landscape Types in Westray (7 total)

3 Ridgeline Island Landscapes; 4 Low Island Pastures; 5 Undulating Island Pastures; 12 Coastal Hills and Heath; 13 Cliff Landscapes; 14 Coastal Sand Landscapes; 16 Loch Basins

Description

Westray is an elongated island extending approximately 15km from north west to south east, and of width typically varying between 2 and 5km. The main island landmass is to the north west, from which a long, narrow peninsula extends to the south east ending only 3km from the north coast of Eday.

An undeveloped and rugged *Cliff Landscape* with *Coastal Hills and Heath* to the rear dominates the western side of the main island landmass, which rises up to 170m AOD. A headland extends to the north west, ending in Noup Head and its lighthouse.

The main settlement of Pierowall lies to the east of these coastal hills, enclosed within a coastal *Loch Basin* landscape, to the north east of which extends a low pastoral headland, which includes the island airfield. The main peninsula to the south is of *Ridgeline Island Landscape* character type, creating the enclosure to form the large sandy Bay of Tuquoy to the south of the island, with a large area of *Undulating Island Pasture* to the rear. The coast is usually rocky with frequent bays, especially along the eastern coastline.

The pastoral landscapes are typical of those found elsewhere in Orkney, with good quality agricultural land supporting cattle rearing, but also arable production. Field patterns are often of a strongly geometric 'grid-iron' pattern, usually separated by wire fences. Farms and houses are dispersed throughout the island, with the exception of the largely uninhabited western coastal hills.

The network of roads runs throughout the island, with the exception of the western coastal hills. The main route to the Rapness Ferry port runs along the elevated central ridge of the *Ridgeline Island Landscape* character area. The more minor roads and tracks usually following the strongly rectilinear pattern of the field boundaries.

Base Landscape Capacity for Wind Energy

The contrasting landscapes of Westray – the settled agricultural lowlands and the wilder coastal cliffs and hills – have limited capacity for larger scale wind developments for different reasons. The qualities of wildness found in the western coastal *Cliff Landscapes* would be sensitive to intrusive wind energy developments, while the small scale of the lowland landscape could not accommodate larger multi-turbine developments of 50m+.

The landscape with the highest capacity for wind energy is the area of *Undulating Island Pastures* located at the south of main island landmass. This is an agricultural landscape within which turbines up to 30m could be readily accommodated with farming and other developments, with a degree of back clothing and topographic screening helping to absorb turbines into the landscape. The less developed parts of the area tend to be inland and to the north, but within 2 – 3km of the village of Pierowall. Therefore there is no capacity for turbines greater than 50m in the area.

The *Low Island Pastures* to the north of the island has a similar generic capacity to the *Undulating Island Pastures*, however its limited extent appears to offer few opportunities for turbines greater than 50m. Additionally, this area is visually connected to the relatively undeveloped Papa Westray, and turbines in this area may have an unacceptable influence on the character of this small neighbouring island.

The peninsula of *Ridgeline Island Landscape* type extending to the south east has sensitivity to wind developments resulting from the exposure of the elevated ridge, onto which turbine developments would tend to be very prominent. Turbines up to 30m can be quite easily associated with farms and other buildings, albeit turbines approaching 30m can appear quite prominent on the ridgeline. Occasional development between 30 and 80m, as single turbine developments, would be acceptable when carefully sited away from the ridgeline.

The *Loch Basin* landscape type around Pierowall has capacity for turbines up to 30m and occasional single turbines between 30 and 50m, with the *Coastal Hills and Heath* to the rear providing a degree of backclothing. Turbines greater than 50m would be out of scale with the small settlement of Pierowall and its surrounds.

The *Cliff Landscapes*, *Coastal Sand Landscapes*, and *Coastal Hills and Heath* landscape types have the lowest capacity for wind energy developments owing to their sensitivity of character.

Consented Wind Developments in 2013

The wind energy landscape of Westray is well developed, with a higher proportion of 20m+ turbines than found in many other parts of Orkney.

Consented developments are distributed throughout the lowland landscape character types, with a concentration of smaller turbines found in the vicinity of the village of Pierowall, including two turbines up to 50m. Three 67m turbines are consented in the inland part of the *Undulating Island Pastures* character area, and only 2km south of Pierowall. An additional 67m turbine is located towards the eastern coastline of the *Ridgeline Island Landscape* character area, approximately 7km south east of Pierowall. The majority of turbines below 30m are single turbine developments, but small arrays of up to 4 turbines are also present. The *Cliff Landscape*s and *Coastal Hills and Heaths* to the west of the island have virtually no wind energy development, with the exception of the occasional turbine below 20m.

Much of the main island landmass of *Coastal Basin* and *Undulating Island Pastures* landscape areas appears as a Landscape with Wind Turbines, with a dense development of turbines around Pierowall of differing size and type, with the prominent 67m turbines often in view. The less developed *Ridgeline Island Landscape* to the south east appears as a *Landscape with Occasional Wind Turbines*, with turbines much less frequently apparent in the landscape. The western cliffs and coastal hills mostly appear as a *Landscape with No Wind Turbines*.

Assessment of Residual Capacity for Future Development

The wind energy landscape of Westray is approaching the acceptable limits to development in some areas. The consented 67m turbines towards the centre of the main island landmass are frequently in view, and have a wide influence on how the wind energy landscape appears.

The *Landscape with Wind Turbines* found primarily in the *Loch Basin* landscape type to the rear of Pierowall has little residual capacity, and future developments should be carefully controlled to prevent the appearance of a *Wind Turbine Landscape*. Additional larger scale development in the *Undulating Island Pastures* landscape type would be inappropriate because of the existing 67m turbines. Limited opportunities exist for turbines up to 30m and/or occasional 30 to 50m turbines.

The *Low Island Pastures* to the north of the island, and the *Ridgeline Island Landscapes* to the south have residual capacity for low levels of development, generally with turbines of no more than 50m, but with potential for an additional 50 to 80m turbine subject to careful assessment and siting. Their appearance as *Landscape(s) with Occasional Wind Turbines* should be retained as relief from the more wind energy intensive parts of the island.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Westray. Generic guidance for each LCT is provided in Appendix 3.

3 Ridgeline Island Landscapes: Some parts of this landscape are approaching limits of acceptable development. There is scope for at most one additional 50 to 80m turbine if separation distances are to be maintained. Turbine siting should be sensitive to the strong geometry of the field boundaries and roads, and coastal locations are preferred to more prominent locations on the ridgeline, especially for larger turbines. The impact of turbines on sensitive coastal features will require careful assessment, especially those greater than 50m.

4 Low Island Pastures: Limited mainly to developments to 30m, but occasionally between 30 and 50m, but ensuring retention as a *Landscape with Occasional Wind Turbines*. Ensure wind energy developments do not unduly influence Papa Westray. The presence of the island airstrip within this LCA may result in a requirement for warning lights on nearby wind turbines, the visual effects of which should be considered.

5 Undulating Island Pastures: No additional 50m+ turbines within this landscape area, but further turbines to 30m could be accommodated with the farming developments. Turbines from 30 to 50m are possible, best sited towards the west of the area where backclothing and topographic screening would be provided by Fitty Hill.

12 Coastal Hills and Heath: No wind energy developments except for small scale developments at the eastern periphery no greater than 30m. There is no residual capacity in this landscape area given the existing level of wind energy development.

13 Cliff Landscapes: No wind energy developments.

14 Coastal Sand Landscapes: No wind energy developments.

16 Loch Basins: Proximity to Pierowall requires turbines to be appropriate to the small scale of the settlement. Turbines should be no greater than 50m and located away from concentrations of houses. Little residual capacity is available in this landscape area..

The two 67m turbines near Pierowall are frequently viewed with houses, accentuating their size. Turbines no greater than 50m are recommended in proximity to Pierowall.

The sensitive Cliff Landscapes of Westray, with Coastal Hills and Heath to the rear, should be retained free of turbines.

Table 6.2i Westray: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Westray Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
3 Ridgeline Island Landscapes	Medium	Medium	◑	◑	◔	◔	○	As generic assessment					◔	◔	◔	◔	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1-3, 2-3km 30-50m:1, 3km 50-80m:1, 5km*
4 Low Island Pastures	Medium	Medium	◑	◑	◔	◔	○	◑	◑	◔	○	○	◔	◔	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1-2, 2-3km 30-50m:1, 3km*
								Reduced capacity at the northern LCA, setting to Papa Westray:										
5 Undulating Island Pasture	Medium	Medium	◑	◑	◔	◔	○	◑	◑	◔	○	○	◔	◔	◔	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km*
								Reduced opportunities for 50m+ turbines because of lack of undeveloped areas in remote locations										
12 Coastal Hills and Heath	Medium - High	Medium - High	◔	◔	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with Occasional / No Wind Turbines Spacings & Groupings N/A*

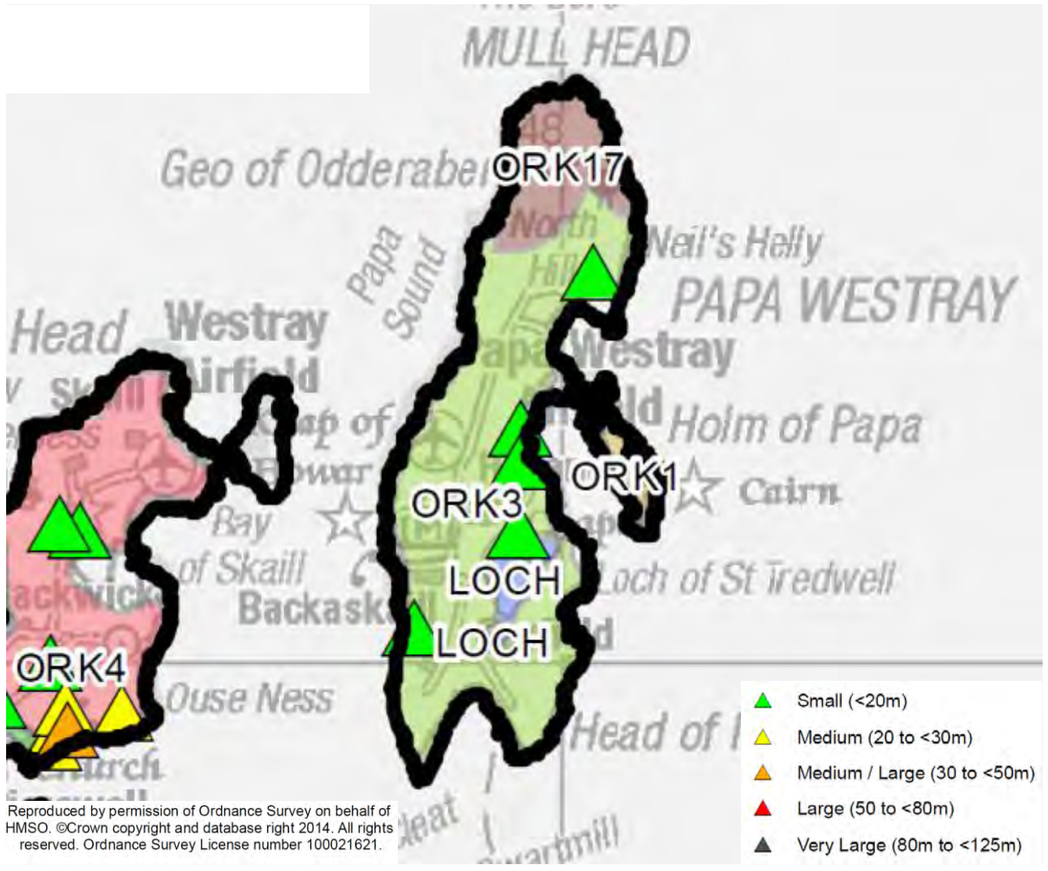
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Westray Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	○	○	○	○	○	○	○	○	○	○	*Landscape with Wind Turbines Spacings & Groupings N/A*
								Small extent with no development to associate turbines										
16 Loch Basins	Medium	Medium - High	●	●	◔	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-3, 0.5-2km 20-30m:1-2, 3-5km 30-50m:1, 5km*

PAPA WESTRAY

Much smaller than neighbouring Westray, Papa Westray is one of the smallest and most northerly of the Orkney isles, however its gentle, pastoral landscapes have historically supported productive agriculture, and it includes sites of notable historic and cultural interest which draw visitors from around the world.



Landscape Types in Papa Westray (3 total)

1 Holms; 3 Ridgeline Island Landscapes; 17 Low Moorland

Papa Westray extends only 8km from north to south, and no more than 2km from east to west. The simple shape and landform of the island comprises only two landscape character types: *Ridgeline Island Landscape* on the bulk of the island; *Low Moorland* on the northerly tip. The island is low lying, with North Hill at the northern end of the island rising to only 48m AOD. At the southern end of the island is the sizable Loch of St Tredwell. Just off the east coast lies the uninhabited Holm of Papa.

The gently sloping pastures mainly support cattle and sheep rearing, in fields of varying size and usually rectilinear, but without the strong rectilinear pattern found on other *Ridgeline Island Landscapes* such as Shapinsay and Westray. Fields are divided by a mixture of stone walls and wire fences and the agricultural landscape appears generally well maintained, although some neglected fields were noted. The northern area of *Low Moorland* is unenclosed and comprises rough grassland and heath.

Farms and houses are scattered throughout the landscape, with the exception of the northern tip. The Holland House farm complex is the most substantial development, located at the heart of the island, while ruined crofts are also a feature of the island landscape. The island's main road runs from the ferry port to the south, northwards along the island ridgeline, with occasional tracks running perpendicular to access farms and houses.

Papa Westray's most notable archaeological feature, and one of its key visitor attractions, is the Knap of Howar farmstead on the west coast, thought to be the oldest preserved farmhouse in Europe. St Boniface's Church, dating from the 8th Century, is also a site of significance.

A settled, tranquil farming landscape, Papa Westray's exposure at the very north of the Orkney Islands is apparent from views to the open seas from the higher points of the island.

Base Landscape Capacity for Wind Energy Capacity

The small scale, undeveloped pastoral nature of the landscape is prohibitive of wind energy developments greater than 30m. The openness and small scale of the landscape would require that turbines are well separated to avoid them becoming prominent in the landscape.

The *Low Moorland* to the very north of the island has no capacity for wind energy, its undeveloped character contrasting with the settled pastoral landscape to the south.

Consented Wind Development in 2013

Wind energy development is sparse on Papa Westray. Only five consented turbines are identified, all of which are below 20m and located towards the coast. The island currently appears as a *Landscape with Occasional Wind Turbines*, with a *Landscape with No Wind Turbines* at the north and west coast.

Assessment of Residual Capacity for Future Development

The island could support a low level of additional turbine development, mainly up to 20m. Occasional 30m turbines would be appropriate, but residual capacity is low because of the potentially dominating effect of these turbines. The majority of the island should be retained as a *Landscape with Occasional Wind Turbines*, and a *Landscape with No Wind Turbines* to the north.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Papa Westray. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No wind energy developments.

3 Ridgeline Island Landscapes: Developments to be located away from the ridgeline, turbines mostly 20m, and those approaching 30m to be infrequent and in single numbers. The presence of the island airstrip within this LCA may result in a requirement for warning lights on nearby wind turbines, the visual effects of which should be considered.

17 Low Moorland: No wind energy developments.

The small scale of the Ridgeline Island Landscape of Papa Westray limits turbine development to no more than 30m.

Table 6.2j Papa Westray: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

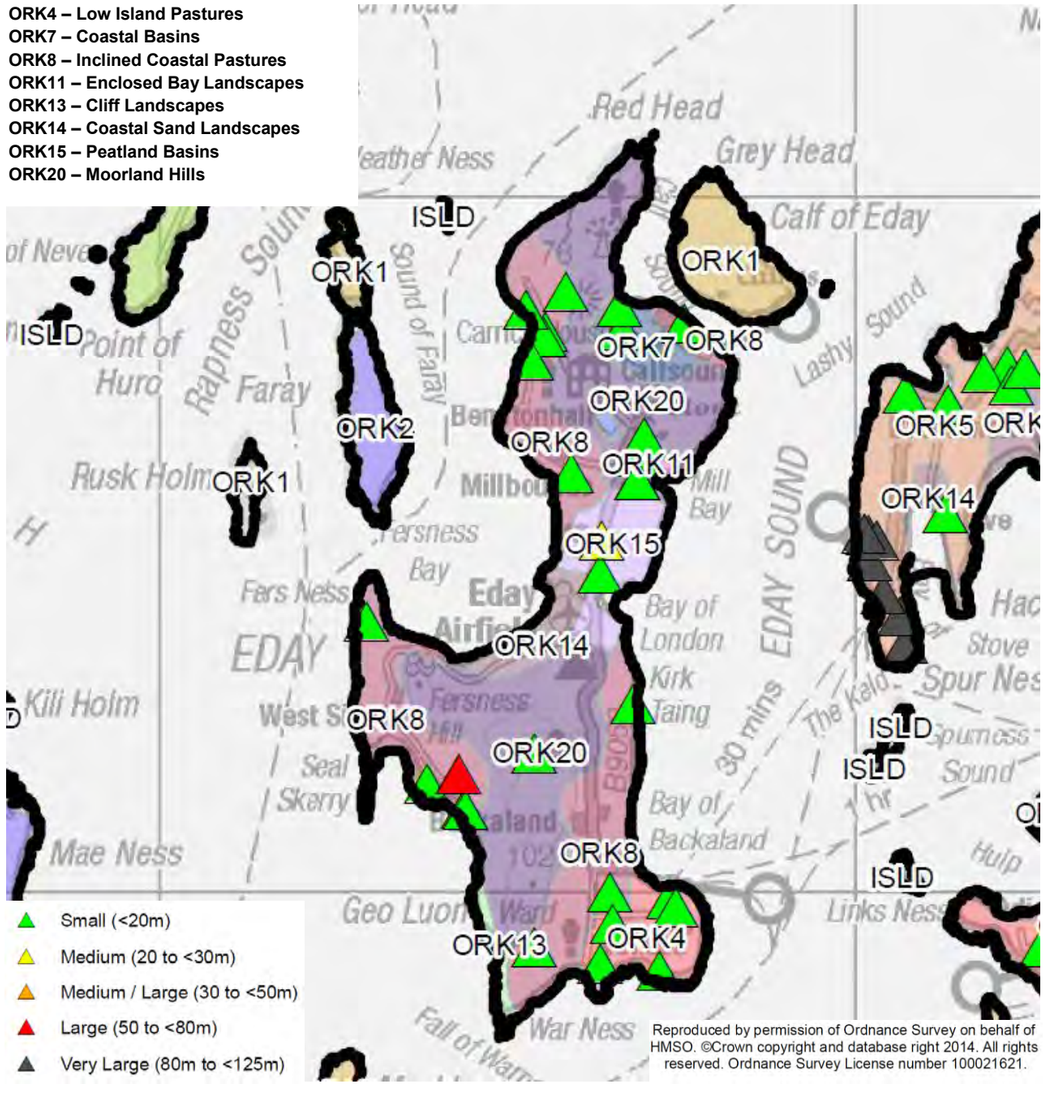
Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Papa Westray Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
3 Ridgeline Island Landscapes	Medium	Medium	●	●	◔	◔	○	●	◔	○	○	○	●	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1-3, 2-3km*
								Reduced capacity because of small scale										
17 Low Moorland	Medium	Medium	◔	◔	●	●	●	○	○	○	○	○	○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
								Retain as undeveloped										

EDAY (Including Calf of Eday, Faray)

The low Moorland Hills of Eday provide a landscape of upland character in contrast to the lower lying pastoral landscapes on the neighbouring Outer North Isles. Eday has a sparse and scattered population in the coastal fringes suited to cultivation. The complex geology of the island results in a subtle diversity of landscape character types.

ORK4 – Low Island Pastures
ORK7 – Coastal Basins
ORK8 – Inclined Coastal Pastures
ORK11 – Enclosed Bay Landscapes
ORK13 – Cliff Landscapes
ORK14 – Coastal Sand Landscapes
ORK15 – Peatland Basins
ORK20 – Moorland Hills



Landscape Types in Eday (8 total)

4 Low Island Pastures; 7 Coastal Basins; 8 Inclined Coastal Pastures; 11 Enclosed Bay Landscapes; 13 Cliff Landscapes; 14 Coastal Sand Landscapes; 15 Peatland Basins; 20 Moorland Hills

Description

Eday is one of the less developed of the northern isles included within the study area. The island is elongated and narrow, extending approximately 13km north to south, and no more than 4km wide. The island is characterised by low *Moorland Hills* at the northern and southern ends, separated by a low lying *Peatland Basin* towards the centre of the island. Ward Hill, situated to the south of the island, is Eday's highest point at 101m AOD. The upland areas are typically fringed by areas of pasture (*Inclined Coastal Pastures*, *Coastal Basins, Low Island Pastures*) which run to a low, undramatic coastline. The Calf of Eday is a distinctive domed shaped *Holm*, an uninhabited island lying just to the north east of Eday separated by a narrow sound. Individual dwellings, crofts and small farms are scattered throughout the low lying pastures, there being no distinct centre of population. The central *Peatland Basin* is unpopulated, but includes the island airfield. A small network of minor roads and tracks runs through the settled landscape areas. The Stone of Setter, located at the northern end of the island is the tallest single standing stone in Orkney, and various cairns, standing stones and sites of archaeological interest are found across the island.

Base Landscape Capacity for Wind Energy Capacity

The small scale of Eday, both in horizontal extent and the height of its hills, is a limiting factor to larger scale wind energy developments. *Moorland Hills,* while assessed generically as having a capacity to accommodate larger turbines, is not of sufficient scale to absorb development of this kind on Eday. However infrequent small turbines within the *Moorland Hills*, when associated with occasional development would not detract from its character. The northerly area of *Moorland Hills* has the highest sensitivity, and least capacity for wind, due to the presence of the Stone of Setter and the nearby undeveloped Calf of Eday.

The lower lying pastoral fringes are agricultural landscapes within which turbines up to 30m can be absorbed, especially where associated with existing farm or housing developments. When viewed from outside the island such development would often be back clothed by the *Moorland Hills*. The lower lying *Inclined Coastal Pasture* and *Low Island Pasture* landscapes would have capacity for occasional 30 to 50m turbines in small groups or single turbines from 50 to 80m when well sited within the *Inclined Coastal Pastures*.

The areas of *Peatland Basin, Enclosed Bay Landscape* and *Coastal Sand Landscape* have very low capacity for turbines up to 20m due to their respective low lying and sensitive coastal locations, into which any turbine development would be prominent. The small scale of the *Coastal Basin* to the north east of the island would be unsuited to turbines greater than 30m, especially given its proximity to the sensitive Calf of Eday. The small area of *Cliff Landscape* to the south west of the island has no capacity due to its wild character and landform.

Consented Wind Development in 2013

There is an established pattern of small wind energy developments below 20m height, mostly single turbines or small turbine groups, associated with farms, crofts or other small scale development. These developments are found in the lower lying *Low Island Pastures*, *Inclined Coastal Pastures* and *Coastal Basin* landscapes. At the current level of development these small

turbines are easily absorbed into the landscape, frequently being seen against the low hills of the island or viewed with small electricity pylons of similar scale.

A single 20 to 30m turbine is present in the *Peatland Basin* towards the centre of the island, a quite prominent feature in the flat landscape, but its presence is reduced by backclothing from surrounding hillsides.

The 77m Eday community turbine is located to the south west of the island near the coast within an area of *Inclined Coastal Pastures*. This development is well separated from the other parts of the island by the low hills to the north and east. While the landscape and visual effects of the turbine on Eday are very restricted, the turbine is a prominent feature when viewed from the south west of the island, such as from the key ferry routes from Mainland to and from Eday / Sanday / Stronsay where the turbine blades tips appear above the skyline.

The very large 100m+ turbines of the Sanday wind development are located approximately 3km from the east coast of Eday, and are often in view from the eastern side of Eday. These turbines contribute to the creation of a *Landscape with Occasional Wind Turbines* (LWOT) along much of the eastern side of Eday. Other LWOT exist in pockets of small turbines, with a small *Landscape with Wind Turbine* local to the 77m community turbine and nearby small turbines. A *Landscape with No Wind Turbines* is present on the Moorland Hills, particularly to the west of the island and the northern tip.

Assessment of Residual Capacity for Future Development

Residual capacity for larger turbines (from 30 to 80m) occurs only in the area of *Inclined Coastal Pastures* to the north west of the island, residual capacity constrained by the existing 77m Eday turbine and the presence of the Sanday turbines to the east.

Inclined Coastal Pastures, *Coastal Basins and Low Island Pastures* have residual capacity for developments up to 30m, singly and in small groups. Turbines of this size appear rational in the landscape when associated with nearby development, therefore a constraining factor may be the general lack of development with which to associate such turbines. The existing pattern of small scale, and dispersed wind energy development should be broadly maintained.

The area of *Low Island Pastures* to the south east has no residual capacity for turbines over 30m because of the presence of the Sanday turbines.

Peatland Basins and *Coastal Sand Landscapes* have low residual capacity for single turbine developments up to 20m only. *Moorland Hills* has no residual capacity other than for occasional turbines up to 20m for buildings and other developments occurring within this landscape type. *Cliff Landscapes* has no residual capacity for wind energy developments.

The proposed limits to development for the majority of Eday is as a *Landscape with Occasional Turbines*. However the *Moorland Hill* tops and northern extremes, and *Cliff Landscapes* should remain a *Landscape with No Wind Turbines*.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Eday. Generic guidance for each LCT is provided in Appendix 3.

1 Holms; 2 Whaleback Island Landscapes: Demand for wind energy on these uninhabited islands is likely to be very low. These islands should be maintained free of wind turbines to retain their undeveloped character.

4 Low Island Pastures: This landscape area has a base capacity for a small grouping of turbines between 30 and 50m, however the presence of the nearby 100m Spur Ness turbines on Sanday, and existing levels of <20m development constrain capacity to turbines of no more than 30m.

7 Coastal Basins: This landscape area has little turbine development, but could support additional smaller scale development to 30m, most likely as a single turbine development.

8 Inclined Coastal Pastures: There is capacity throughout the island for turbines up to 30m which can be sited close to existing houses and buildings, in groups of 1 – 3. The siting of turbines approaching 30m should be carefully assessed to ensure the maintenance of the existing small scale, low intensity development pattern. Turbines greater than 30m should be located to the west of the island to avoid unacceptable cumulative effects with the 100m Sanday turbines.

13 Cliff Landscapes: No wind energy developments within this LCT.

11 Enclosed Bay Landscapes; 14 Coastal Sand Landscapes: Wind turbine development should generally be avoided within these LCTs due to their small scale and low lying coastal location. However the occasional single turbine up to 20m turbine associated with buildings or other development would be appropriate. The presence of the island airstrip within the *Coastal Sand Landscape* may result in a requirement for warning lights on nearby wind turbines, the visual effects of which should be considered.

15 Peatland Basins: Wind turbine development should be avoided within this LCT due to its low lying nature, in which vertical structures are very prominent. However the occasional single turbine up to 20m associated with buildings or other development would be appropriate.

20 Moorland Hills: No developments other than the smallest turbines (<20m) associated with any buildings or structures in the area. The area around the Stone of Setter and northern hills near the Calf of Eday are of particular sensitivity, including to medium or larger sized turbines in adjacent character areas.

Table 6.2k Eday: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

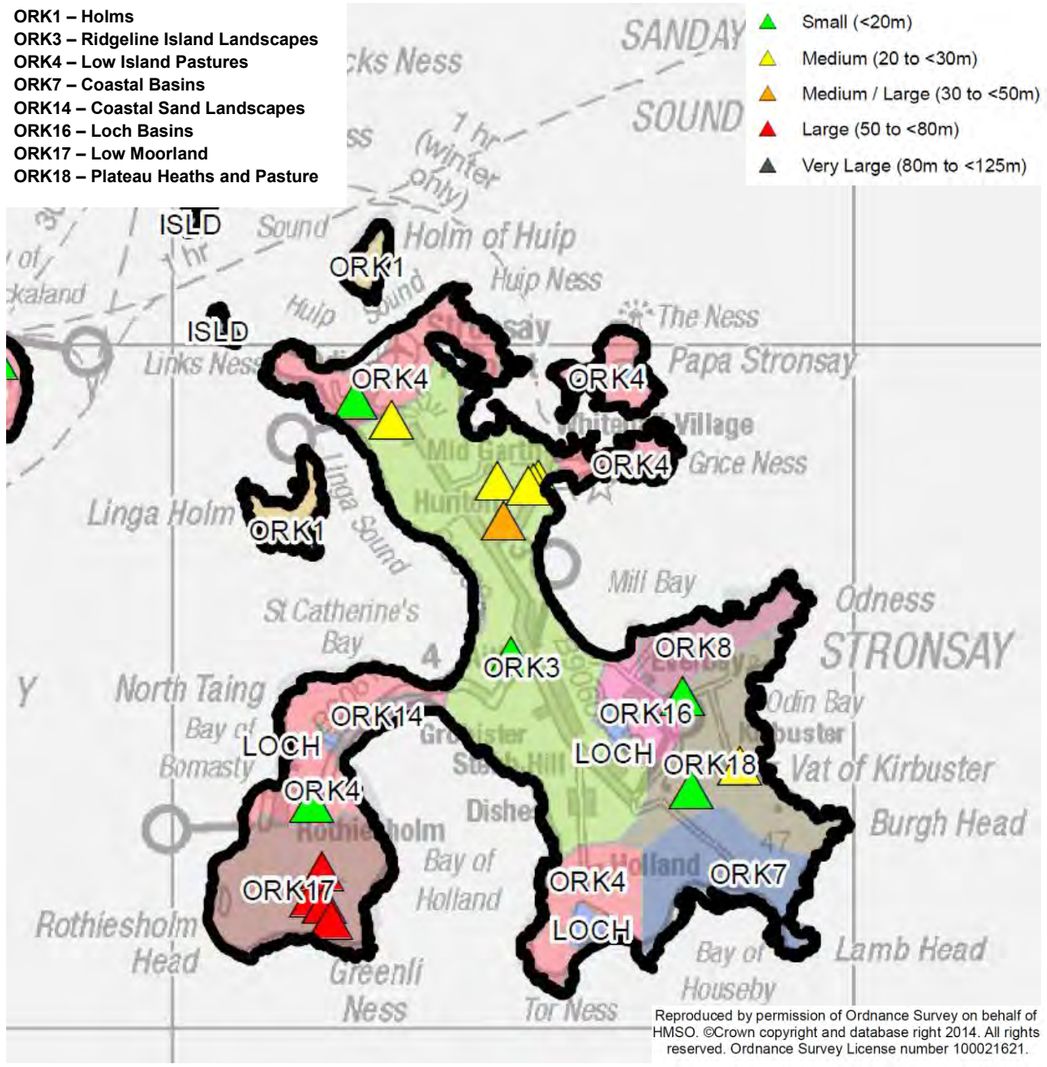
Eday Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
1 Holms	High	Medium	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
2 Whaleback Island Landscape	Medium	Medium - High	●	◔	○	○	○	○	○	○	○	○	○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
								Faray should be retained free of turbines										
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	●	●	◔	○	○	◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km*
								No capacity for turbines above 50m due to small scale										
7 Coastal Basins	Medium	Medium	●	●	◔	○	○	●	●	○	○	○	◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km*
								Small scale reduces capacity for turbines >30m										
8 Inclined Coastal Pastures	Medium	Medium	●	●	◔	◔	○	As generic assessment					●	◔	◔	◔	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km 50-80m:1, 5km*

(Continued)

Eday Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
11 Enclosed Bay Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km*
								Landscape scale and low lying location sensitive to 20m+ turbines										
13 Cliff Landscapes	High	High	○	○	○	○	○	As generic assessment					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings*
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km*
								Landscape scale and low lying location sensitive to 20m+ turbines										
15 Peatland Basins	Medium	Medium	◔	○	○	○	○	As generic assessment					◔	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings <20m:1, 1km*
20 Moorland Hills	Medium	Medium - High	◔	◔	●	●	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 1-2km*
								Reduced capacity for turbines above 20m because of small scale of Moorland Hills										

STRONSAY

The most southerly of the Outer North Isles, Stronsay has a diverse landscape despite its small size, its character defined by nine landscape character types. Stronsay is a tranquil island of mainly undulating pastures, supporting a population of over 300 people. While a small scale island landscape, the more remote promontories and headlands of the island provide opportunities for larger scale wind energy developments.



Landscape Types in Stronsay (9 total)

1 Holms; 3 Ridgeline Island Landscapes; 4 Low Island Pastures; 7 Coastal Basins; 14 Coastal Sand Landscapes; 16 Loch Basins; 17 Low Moorland; 18 Plateau Heaths and Pasture

Description

Stronsay extends approximately 12km from north west to south east. The main landmass of the island is up to 5km wide, but narrows towards the north west, at only 1 to 2 km wide. The 'limb' of Rothiesholm extends to the south west, narrowly connected to the rest of the island, and forms the enclosure to the Bay of Holland to the south, and St Catherine's bay to the north.

The low hills of the island reach only 43m AOD, at John's Hill towards the north. A distinctive low ridge extends from this high point towards the flatter heaths and pastures at the south eastern end of the island. The Rothiesholm headland includes a substantial area of *Low Moorland* at its most southerly extent. The area of *Plateau Heaths and Pastures* to the south east of the island ends with a rocky coastline, exposed to the north sea. This coast includes notable geological features such as the Vat of Kirbuster gloup (a collapsed sea cave).

The undulating *Low Island Pastures, Ridgeline Island Landscapes, Inclined Coastal Pastures* and *Coastal Basins* of the island are grazed mainly by cattle, with rectilinear fields enclosed by fences and more occasionally stone walls. Most of the pastures are enclosed, with the exception of an area of *Plateau Heaths and Pasture* to the south east and the *Low Moorland* of the Rothiesholm headland to the south west. The *Low Island Pastures* of Papa Stronsay, lying just north of Whitehall village, is barely separated from the main island by the narrow entrances to the Papa Sound.

Farms and houses occur frequently throughout the landscape, while Whitehall Village to the north east of the island is the main settlement, and includes the vehicle ferry link to the other Outer North Isles and Mainland. Roads and tracks provide access to most of the island, with the main island road running north west to south east along the spine of the *Ridgeline Island Landscape,* with other roads and tracks tending to be straight, aligned with pattern of the fields.

Base Landscape Capacity for Wind Energy

The small scale, pastoral nature of the Stronsay landscape is generally prohibitive of larger wind energy developments. Many of the landscape types, with generic capacity for larger developments are of limited extent in Stronsay.

The best opportunities for turbines over 50m occur on Rothiesholm, already the site of a development of one 67m and three 75m turbines, within the *Low Moorland* landscape character type. This area is separate from the more settled landscape of the main island landmass on an undeveloped headland. Large turbine developments in this area appear part of the larger scale seascape rather than the small island landscape and the area has a base capacity to accommodate turbines to 100m.

Opportunities for small groups of larger turbines (30 to 80m) occur occasionally at the southern extremities of the island within the less developed area of *Low Island Pasture*. The northern areas of this LCT, including Papa Stronsay, have capacity for turbines up to 30m only because of their small scale, and prominence in important views from North Hill.

There would be base capacity for occasional single 30 to 50m turbines within most landscape types of the island, with the exception of the *Holms* and *Coastal Sand Landscapes*. Turbines to

30m can be accommodated throughout the pastoral landscape types at appropriate spacings and groups sizes.

The area most sensitive to wind energy development is the south eastern *Plateau Heaths and Pasture* because of its proximity to a relatively undeveloped coastline with natural features, and visitor interest. The ridgeline of the *Ridgeline Island Landscape* towards the centre of the island is also sensitive, where turbines over 30m would be prominent.

The small *Coastal Sand Landscape* is unsuited to developments of any size because of its small scale, and attractive undeveloped sandy beach.

The two unpopulated *Holms* to the north of the island have no capacity for developments of any size.

Consented Wind Developments in 2013

Consented wind energy development in Stronsay is limited, with only 15 turbines: five turbines below 20m; five between 20 and 30m; one between 30 and 50m; and four are 50m+. Turbines are typical single turbine developments, however an array of three small turbines has been constructed at the water treatment works near Whitehall Village, and the 67 to 75m turbines at Rothiesholm are in an array of four.

Turbines are distributed throughout the island, with a slightly higher concentration found on the hillside close to Whitehall Village. The areas with the lowest numbers are towards the southern coast, reflecting the fewer numbers of houses and farms found here.

Most of Stronsay appears as a *Landscape with No Wind Turbines* or a *Landscape with Occasional Wind Turbines*, with a *Landscape With Wind Turbines* to the south of the Rothiesholm headland.

Assessment of Residual Capacity for Future Development

From some points on the island, most notably John's Hill, it is possible to see the larger turbine developments of both Stronsay and Sanday, with turbines of intermediate size seen in between. This intervisibility between developments of different sizes can create unacceptable cumulative visual effects. Capacity for future wind developments is more prevalent towards the south of the island, and clear of the ridgeline, which is more pronounced towards the north.

Expansion of the existing 67 to 75m turbine development with additional similar sized turbines, or repowering with larger turbine would be appropriate. Residual capacity occurs in the southern most area of *Low Island Pasture* which is currently free from wind energy developments, but constrained to no more than 30m because of the nearby larger developments.

Other areas with residual capacity for single 30 to 50m turbines include the southern part of the *Ridgeline Island Landscape*, the *Inclined Coastal Pastures*, and the *Loch Basin*, *Coastal Basin* and the western part of the *Plateau Heaths and Pasture*. Single turbine development would be most appropriate for the small scale landscape, and clearly not every character area could accommodate a development of this size while maintaining recommended separation distances.

Residual capacity for turbines <30m is widespread, but capacity is lower on the more elevated parts of the *Ridgeline Island Landscape* for turbines approaching 30m.

The area of *Plateau Heaths and Pasture* to the south east of the island already includes a quite prominent turbine close to 30m high. Further developments in this area should be avoided due to the prominence of turbines in the open coastal landscape, and the attractive rugged coastline.

Developments in the northern *Low Island Pastures* should be restricted to below 30m, because of the cumulative effect on views from the North Hill viewpoint, where the large Sanday turbines are in clear view.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Stronsay. Generic guidance for each LCT is provided in Appendix 3.

1 Holms: No wind energy developments.

3 Ridgeline Island Landscapes: Capacity exists for one or two single turbines up to 50m, and small groups of turbines to 30m associated with farms and houses. Turbines on the highest points of the ridgeline should be avoided with 30 to 50m turbines on the lower slopes only.

4 Low Island Pastures: Area of more remote landscape type to the south west has the best capacity for a small array of turbines between 30 and 80m, however residual capacity is restricted to turbines of no more than 30m because of the presence of the nearby Rothiesholm turbines. Other areas of this landscape type to the north do not have capacity for turbines above 30m because of the small scale and possible cumulative effects with the Sanday development. The presence of the island airstrip within this LCA may result in a requirement for warning lights on nearby wind turbines, the visual effects of which should be considered.

7 Coastal Basins: The eastern part of the character area should be kept free of turbines to avoid the more sensitive and rugged areas of coast to the east.

8 Inclined Coastal Pastures: This landscape area is small in extent but single turbines up to 50m would be acceptable if adequately separated from those in other character areas.

14 Coastal Sand Landscapes: No wind energy developments.

16 Loch Basins: This landscape area is small in extent but single turbines up to 50m would be acceptable if adequately separated from those in other character areas.

17 Low Moorland: Opportunity for a group of 'very large' turbines, up to 100m, subject to careful assessment, as a replacement for the existing development. Fewer opportunities for smaller turbines (<30m) because of the lack of houses / farms with which they can be associated.

18 Plateau Heaths and Pastures: Development should be restricted to the western part of the area only to avoid the effects of wind energy developments on the south eastern coastline, with turbines no greater than 50m.

22m turbines near Whitehall Village appear well sited at the edge of the Ridgeline Island Landscape, being in scale with the associated water treatment works, aligned to both the access road the landform of the enclosing shallow valley.

This 27m turbines appears prominent in the Plateau Heaths and Pasture landscape near the scenic south east coast. This coast should be retained as largely free from the influence of wind energy developments, with turbines sited in more inland locations.

Table 6.2l Stronsay: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

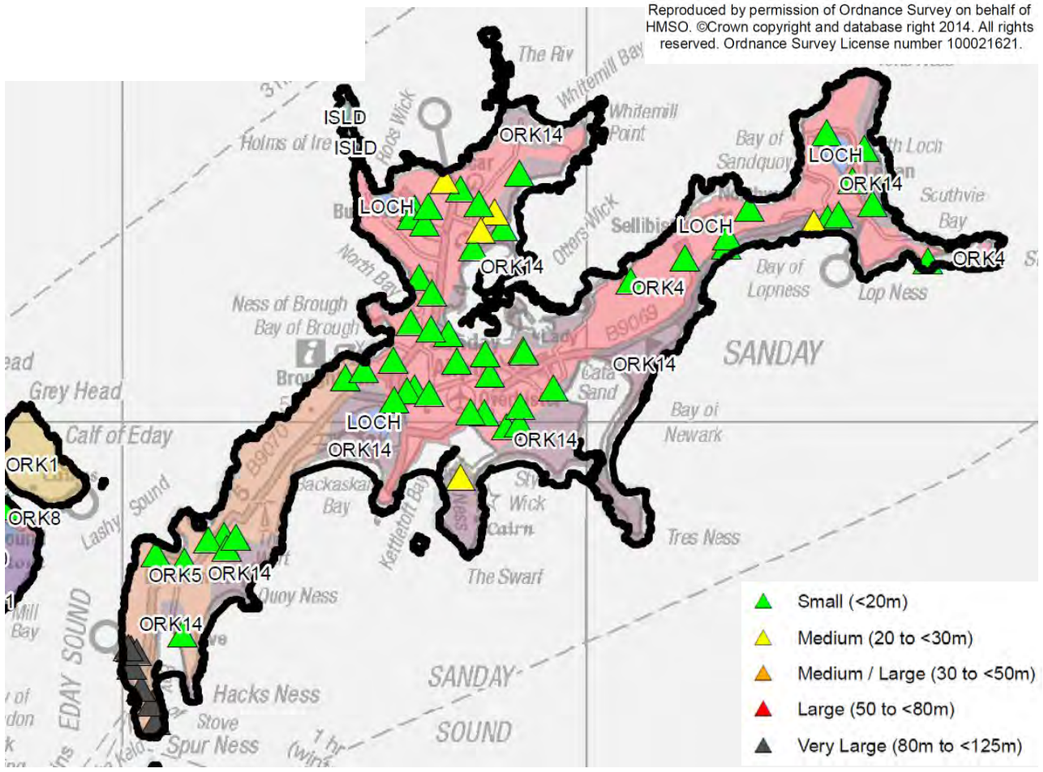
(Continued)

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ◑ High Capacity ●

Stronsay Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
3 Ridgeline Island Landscapes	Medium	Medium	●	●	◔	◔	○	●	●	◔	○	○	●	●	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 1-2km 20-30m:1-3, 2-3km 30-50m:1, 3km*
								Small scale does not allow for 50m+ turbines										
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	As generic assessment					●	●	○	○	○	*Landscape with Wind Turbines/with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-3, 5-10km*
7 Coastal Basins	Medium	Medium	●	●	◔	○	○	As generic assessment					●	●	◔	○	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 0.5-1km 20-30m:1-2, 1-2km 30-50m:1, 2km*
8 Inclined Coastal Pastures	Medium	Medium	●	●	◔	◔	○	●	●	◔	○	○	●	●	◔	○	○	*Landscape with Wind Turbines/with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-2, 2-4km*
								Small scale does not allow for 50m+ turbines										
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	No capacity due to scale, presence of sandy beach, undeveloped state					○	○	○	○	○	*Landscape with No Wind Turbines Spacings & Groupings N/A*
16 Loch Basins	Medium	Medium - High	●	●	◔	○	○	As generic assessment					●	●	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-2km 20-30m:1-2, 3-5km 30-50m:1, 5km*
17 Low Moorland	Medium	Medium	◔	◔	◑	◑	◑	As generic assessment					◔	◔	◔	◔	○	*Landscape with Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 2-5km 50-80m:1-5, 5-10km 80m+:1-5, 10-20km*
18 Plateau Heaths and Pasture	Medium	Low	◔	◔	◔	○	○	As generic assessment					◔	◔	◔	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-4, 1-2km 20-30m:1-3, 2-3km 30-50m:1-3, 3-5km*

SANDAY

The largest of the Outer North Isles, and the third largest of the archipelago, Sanday is unique amongst the Orkney isles for its flatness and its expansive sandy coastline. Its composition of low lying elongated headlands creates wide horizons and a strong relationship with the sea, which is never more than one or two kilometres from any inland area, while the other Outer North Isles are visible from different parts of the island.



Landscape Types in Sanday (3 total)

4 Low Island Pastures; 5 Undulating Island Pastures; 14 Coastal Sand Landscapes

Description

Sanday extends approximately 20km from south west to north east, with three main headlands and narrow promontories extending from a central island landmass: Northwall to the north east; Burness to the north; Spur Ness to the south. The highest point of the island is on the southern most headland, at 65m AOD. This localised undulating landscape of the south contrasts with the predominant flat *Low Island Pastures* occurring on the rest of the island, fringed by the extensive *Coastal Sand Landscape*. Despite Sanday's relative large size, it has only three landscape types, reflecting the overall uniformity of the landscape found on the island.

Most of Sanday is a settled, agricultural landscape. The *Low Island Pastures* and *Undulating Island Pastures* are well maintained landscapes, mostly enclosed by rectilinear fields, sometimes with stone walls, under pasture and arable production. Pasture often extends into the *Coastal Sand Landscape*, until curtailed by dunes and shifting sand. Other land uses include a golf course along the south eastern coast.

Farms and houses occur throughout the landscape, mainly within the *Low Island Pastures* landscape type towards the centre of the island, with development less frequent on the main elongated promontories extending north east and south west from the centre of the island. Small concentrations of houses occur throughout the landscape, while Lady Village is the main settlement, situated towards the centre of the island, with the airport nearby.

A network of B roads and tracks provide access throughout the island, with the vehicle ferry terminal providing access to the Mainland is at Spur Ness to the very south of the island.

Base Capacity for Wind Energy

Constraints to larger scale wind energy developments occur in the more central settled areas of the island, however the headlands and promontories found on the island are often remote or largely free from settlement. In exposed locations such as these, the large scale seascape becomes more relevant to how turbines are perceived rather than the smaller scale landscapes to which they are attached. The coastline of Sanday is low lying and visually not as dramatic as, for example, a *Cliff Landscape* type, however it has a complex geomorphology and sensitive features including sandy bays, tombolos and dunes . The coast of Sanday is scenic and attractive to visitors, with some of the best sandy beaches in Orkney. The flat, open landscape of the island provides hardly any opportunities for screening turbines, other than in the locally hillier *Undulating Island Pastures* to the south. The openness of the *Low Island Pastures* landscape, and sensitivity of the *Coastal Sand Landscape* significantly constrain the capacity for turbines greater than 50m.

Capacity for turbine groups greater than 50m occurs on the exposed coastal areas of landscape types *Undulating Island Pastures*. Coastal locations are preferred because of their separation from houses and farm buildings. Turbines of this size located inland would tend to dominate the island interior and be visually prominent.

Capacity for turbines from 30 to 50m occurs only in the *Undulating Island Pastures* to the south, where a degree of separation between turbines and areas of small scale settlement can be maintained, and there are some opportunities for topographic screening. In this location single or small groups of turbines would be acceptable.

Smaller turbines up to 30m can be accommodated with the *Low Island Pasture and Undulating Island Pasture* landscape types. However multiple developments of different size and style turbines within such a flat landscape could easily create a *Wind Turbine Landscape* especially towards the centre of the island. Capacity for turbines approaching 30m is also more limited when close to smaller scale residential developments.

The *Coastal Sand Landscapes* with associated beaches and dunes are the defining feature of Sanday and which should be largely left free from the influence of wind energy developments. Local capacity for developments does occur when away from the more sensitive or popular

beaches or dunes, in the more agricultural hinterland and set back from the coast. Capacity for development up to 30m would only be appropriate where there is a degree of separation from sensitive coastal features.

Consented Wind Developments in 2013

Apart from the 100m turbines of Spur Ness, Sanday has a modest level of wind energy development. Turbines below 20m occur quite frequently in the landscape, but are not of a scale to be particularly intrusive, even within the flat and open *Low Island Pastures* landscape type. Turbines greater than 20m are unusual and intermediate sized developments, between 30 and 80m, are not present.

Other than the Spur Ness turbines, most wind energy developments occur in the central *Low Island Pasture* landscape type. Turbines up to 20m are frequent, following the pattern of housing and farm developments. Turbines are usually sited singly, and often occur at separations of less than 1km. Only five turbines between 20 and 30m are consented, found in the more peripheral areas of *Low Island Pasture and Coastal Sand Landscapes.*

The majority of Sanday appears as a *Landscape with Occasional Wind Turbines,* with some areas as *Landscapes with No Wind Turbines,* typically found in areas with few housing and farm developments. The landscape in the immediate vicinity of the Spur Ness windfarm appears as a *Landscape with Wind Turbines* owing to the dominant presence of the 100m turbines.

Assessment of Residual Capacity for Future Development

There is residual capacity within the *Low Island Pasture* landscape for turbines up to 30m, although the existing pattern of frequently occurring 20m turbines does limit opportunities if separation distances are to be maintained.

Coastal Sand Landscapes currently include developments up to 30m in the agricultural landward margins, and a low residual capacity exists in some character areas for development of a similar scale.

The existing 100m turbine development on Spur Ness occupies the most appropriate location for larger turbines within the *Undulating Island Pasture*s landscape. The lower density of development found in this area provides some opportunity for turbine developments between 30 and 50m, but the cumulative effect of additional turbines greater than 50m would exceed the landscape capacity. Additional capacity for turbines up to 30m are found with the occasional farms and houses in this landscape type.

The proposed limits to development for the majority of Sanday are as a *Landscape with Wind Turbines* for much of the *Low Island Pasture* and *Undulating Island Pasture* landscapes. This would be relieved by a *Landscape with Occasional Wind Turbines* in the less developed inland areas, and much of the *Coastal Sand Landscape* type.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of Sanday. Generic guidance for each LCT is provided in Appendix 3.

4 Low Island Pastures: The openness of this character area limits turbines to no more than 30m, in small groups, to avoid the cumulative effects of turbines of multiple sizes and types being seen together. Turbines at the upper end of the range are prominent in this landscape, and recommended separation distances should be maintained. The presence of the island airstrip within this LCA may result in a requirement for warning lights on nearby wind turbines, the visual effects of which should be considered.

5 Undulating Island Pastures: Occasional turbines between 30 and 50m in addition to, but well separated from the existing development at Spur Ness; turbines up to 30m in groups of no more than three and corresponding to the pattern of development of farms and houses. The existing 100m turbines are acceptable within this landscape, but significantly larger or increased numbers of turbines would exceed the capacity of the character area.

14 Coastal Sand Landscapes: Developments of occasional turbines to 30m, sited away from beaches, dunes, and other sensitive landscape features, typically within more pastoral hinterlands where they occur, and associated with houses and farms.

A 22m high turbine in an area of Coastal Sand Landscape. Turbines are best accommodated in the more agriculturally developed landward margins of this landscape type, such as this.

The central Low Island Pastures of Sanday have frequent housing and farm development. The openness of this island landscape creates sensitivity to views of multiple types and sizes of turbines.

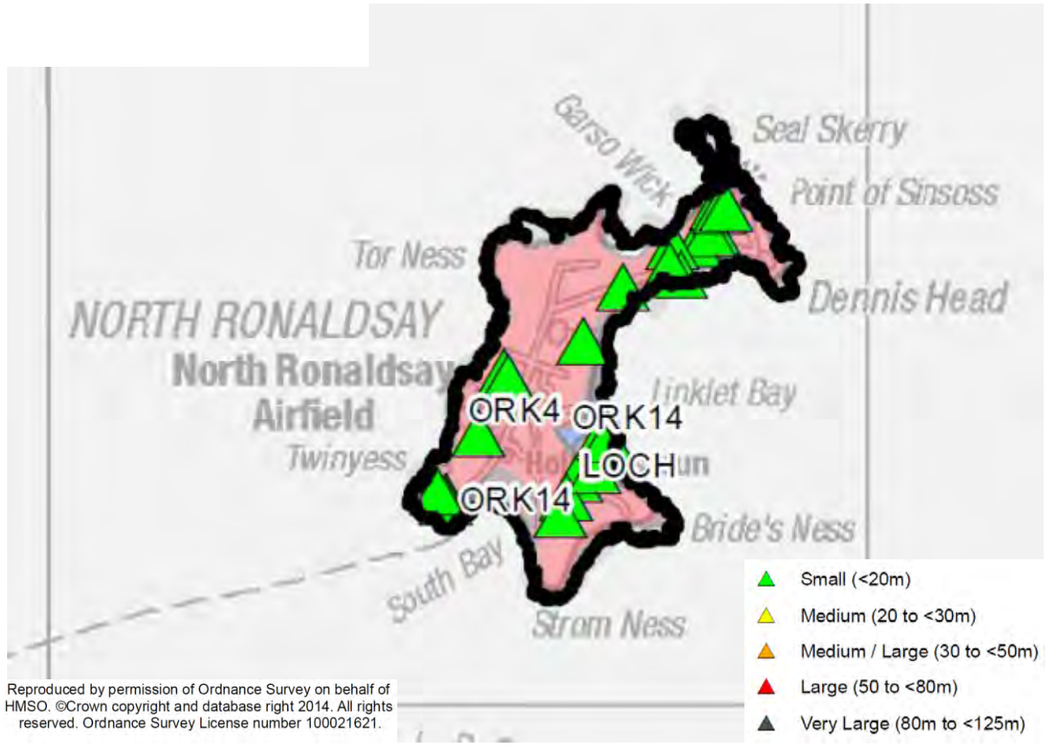
Table 6.2m Sanday: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development.

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ● High Capacity ●

Sanday Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	●	●	○	○	○	○	○	○	○	○	*Landscape with Wind Turbines / Occasional Wind Turbines Spacings & Groupings <20m:1-4, 0.5-2km 20-30m:1-3, 1-2km*
								Open landscape reduces capacity for larger turbines										
5 Undulating Island Pasture	Medium	Medium	●	●	◔	◔	○	●	●	◔	◔	◔	○	○	◔	○	○	*Landscape with Wind Turbines / Occasional Wind Turbines Spacings & Groupings <20m:1-6, 0.5-2km 20-30m:1-3, 1-2km 30-50m:1-3, 2-5km 50-80m:1-5, 5-10km 80-125m:1-5, 10-20km*
								Local circumstances mean landscape is remote from development, with capacity for larger turbines										
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	As generic assessment					◔	◔	○	○	○	*Landscape with Occasional Wind Turbines Spacings & Groupings <20m:1-3, 0.5-1km 20-30m:1, 2km*

NORTH RONALDSAY

The most north-easterly and one of the smallest inhabited Outer North Isles, North Ronaldsay is also one of the flattest islands, all areas lying below 20m AOD and within 1km of the sea. It has a predominantly rocky coast with windblown sand areas to the south and east. Inland it is dominated by low lying improved pastures divided by walls and fences. Similar to Sanday there are wide horizons and a strong relationship with the sea. The other Outer North Isles are visible from much of the island, but views are open to the north and east.



Landscape Types in North Ronaldsay (2 total)

4 Low Island Pastures; 14 Coastal Sand Landscapes

Description

North Ronaldsay extends approximately 5km from south west to north east, with headlands enclosing Linklet Bay to the east and South Bay to the south. The highest point of the island, 20m AOD, is in the south, at the reservoir by the small settlement of Holland. The island has only two landscape types, reflecting the uniformity of the landscape: *Low Island Pastures* cover most of the island, fringed by strips of *Coastal Sand Landscape* to the south and east. Coastlines elsewhere comprise rocky flagstone beds and pebble beaches.

Most of North Ronaldsay is a settled, agricultural landscape. The *Low Island Pastures* are generally well maintained landscapes, with some areas of dereliction. Most fields are rectilinear, bound by fences and stone walls, under pasture and grass leys. A drystone wall extends around the perimeter of the island, separating the pasture from the surrounding shorelines on which sheep graze seaweed. Pasture often extends into the *Coastal Sand Landscape*, until curtailed by dunes and shifting sand. Other land uses include a golf course along the eastern coast by Linklet Bay.

Farms and houses occur throughout the landscape, mainly within the *Low Island Pastures* towards the centre and east of the island, with development less frequent on the exposed west coast. There is no main settlement. An airstrip lies in the west of the island. The northern peninsular of Dennis Ness is dominated by a 42m tall lighthouse and two communications towers, which are prominent features seen from all parts of the island, and visible from other islands.

A small network of minor roads and tracks provide access throughout the island, with the vehicle ferry terminal providing access to the Mainland located at the southwest.

Underlying Capacity for Wind Energy

The limited extent and low lying landform of North Ronaldsay is a significant constraint to larger scale wind energy development. There are no areas remote from nearby settlement.

There is no capacity for turbines much taller than 30m without them being visually prominent and/or dominating the island interior, competing with the iconic lighthouse at the northern end.

Medium turbines up to 30m can be accommodated within the *Low Island Pasture*. However multiple developments of different size and style turbines within such a flat landscape could easily create a *Wind Turbine Landscape*. Capacity for turbines approaching 30m is also more limited when close to smaller scale residential developments.

The *Coastal Sand Landscapes* with associated beaches and dunes are amongst the most scenic features of North Ronaldsay and should be largely left free from the influence of wind energy developments. Limited capacity for development does occur when away from the more sensitive or popular beaches, in the more agricultural hinterland and set back from the coast.

Consented Wind Developments in 2013

More than 20 turbines, all below 20m height are scattered across the landscape, the greatest concentration being in Dennis Ness, close to the lighthouse and communications towers. Turbines are sited singly and in loose pairs or groups, and usually occur at separations of less than 500m. Most are located in the predominant area of *Low Island Pasture* with three on *Coastal Sand Landscapes.*

The pattern of small wind turbine development reflects the scattered nature of development across the flat landscape, and in places the presence of existing vertical elements such as electricity poles and houses against the backdrop of the lighthouse creates an untidy horizon, reducing the potential prominence of the turbines. The majority of North Ronaldsay appears as a *Landscape with Occasional Wind Turbines,* with the northwest and the area around South Bay a

Landscape with No Wind Turbines. The immediate vicinity of the lighthouse appears as a *Landscape with Wind Turbines* owing to the clustering of several small turbines, although these are subservient to the dominant presence of the lighthouse.

Assessment of Residual Capacity for Future Development

The capacity of the North Ronaldsay landscape is restricted to smaller turbines, mostly under 20m in keeping the existing pattern of small scale wind energy development.

Residual capacity for wind energy lies mostly within the *Low Island Pasture* landscape type, within which additional further 20m turbines could be accommodated. Occasional single 20 to 30m turbines could be accommodated in more peripheral and undeveloped areas. Recommended separation distances and group sizes will need to be maintained to ensure that a *Wind Turbine Landscape* does not result from multiple sizes and types and turbines being in the same view. Exceptionally a turbine up to 40m could be located at the south eastern headland of the island.

Coastal Sand Landscapes currently include a few turbines up to 20m, and some areas of this landscape type with built infrastructure could accommodate similar such developments.

The proposed limit to development for the majority of the island is as a *Landscape with Occasional Wind Turbines*, mainly within the *Low Island Pasture* landscapes. This would be relieved by a *Landscape with No Wind Turbines* in the less developed north-western coastal areas, and the *Coastal Sand Landscape* of South Bay.

Specific Guidance by Landscape Character Type

Guidance on future wind energy development is provided below, specific to the particular circumstances of North Ronaldsay. Generic guidance for each LCT is provided in Appendix 3.

LCT Low Island Pastures: Turbines up to 30m in small groups associated with farm and housing development. A maximum of one or two turbines of 30 to 40m could be located at the south-eastern headland of the island, balancing the tall structures to the northeast. The presence of the island airstrip within this LCA may result in a requirement for warning lights on wind turbines, the visual effects of which should be considered.

LCT Coastal Sand Landscapes: Occasional turbines to 20m, sited away from beach, dunes, and other sensitive landscape features, typically within more pastoral hinterlands where they occur, and associated with houses and farms.

Wind turbines and other vertical structures are a feature of northern North Ronaldsay. Turbines should be carefully sited so as to avoid visual clutter when different sizes and types of vertical features are in the same view.

Table 6.2n North Ronaldsay: Summary of Landscape Capacity and Proposed Limits to Future Limits to Wind Energy Development

Key: No Capacity ○ Low Capacity ◔ Medium Capacity ● High Capacity ◉

North Ronaldsay Landscape Character Types	Generic Landscape Sensitivity and Capacity by Turbine Size							Island Specific Capacity by Turbine Size					Residual Capacity by Turbine Size					Proposed Future Wind Energy Landscape Type, Suggested Turbine Groups & Spacings
	Landscape Sensitivity	Landscape Value	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	S <20m	M 20 - 30m	M/L 30 - 50m	L 50 - 80m	VL 80 - 125m	
4 Low Island Pastures	Medium	Medium	●	●	◔	◔	○	●	◔	◔	○	○	◔	◔	◔	○	○	*Landscape with No / Occasional Wind Turbines; Landscape with Wind Turbines (locally) Spacings & Groupings <20m:1-3 0.5-2km 20-30m:1, 1km 30-50m:1, 2km*
								Small scale and extent provides capacity for turbines to 40m maximum										
14 Coastal Sand Landscapes	Medium - High	Medium - High	◔	◔	○	○	○	◔	○	○	○	○	◔	○	○	○	○	*Landscape with Occasional Wind Turbines / Landscape with No Wind Turbines Spacings & Groupings <20m:1, 1km*
								Small scale restricts capacity to < 20m										

6.3 Summary of Landscape Character, Sensitivity and Underlying Capacity by Landscape Character Type

The landscape of Orkney is of modest scale and extent in comparison to many other parts of Scotland. Whilst suitable for wind energy development, as underlined by extensive development to date, the scale of turbines and extent of developments is restricted by this modest scale and other key characteristics. It is a predominantly pastoral, settled landscape, with a widely dispersed population scattered throughout the islands. The upland landscapes, which in other parts of Scotland might typically accommodate larger wind energy developments, tend to be of limited extent, with hills of modest size which are often visually prominent. Some upland areas, for example on Hoy, are of outstanding scenic value, while others such as those on Mainland are key to the setting of Orkney's Neolithic heritage. Underlying landscape capacity for different sizes of turbines is illustrated in Figures 6.1a-e.

With the exception of much of Hoy, there are few places in Orkney which do not have a resident population nearby, and even the less settled islands are visible from the network of ferry routes running through the islands. The landscape and seascape of the archipelago is an open one, where it is difficult for larger turbines to be hidden in the landscape.

There are very few landscape character types in Orkney which are assessed as unsuited to any form of wind development, although the underlying capacity of many character types varies considerably according to their island context.

The *Cliff Landscapes*, found most typically on the western seaboard of Orkney, is assessed as having no underlying capacity for wind development, this being a landscape with high qualities of wildness, dramatic cliffs and geological features. *Coastal Hills and Heaths* typically occurring to the rear of the *Cliff Landscapes* are an integral part of the west coast landscape, and are similarly unsuited to wind developments. The unique *Rugged Glaciated Hills* and *Glaciated Valleys*, occurring only on Hoy, are at the heart of the National Scenic Area, and of importance to the setting of the World Heritage Site on West Mainland, and also have no underlying capacity for wind energy developments. The other coastal landscape types (*Enclosed Bay Landscapes, Coastal Sand Landscapes*) have limited base capacity for wind energy resulting from their enclosed nature, limited extent and scale, and their value as visitor attractions.

The upland character areas of *Moorland Hills, Isolated Coastal Knolls* and *Plateau Heaths and Pasture* are assessed as having a low underlying capacity for wind energy, but variable according to context. The *Moorland Hills* of West Mainland is an area with one of the highest underlying capacities for larger scale turbine development, due to its relative expansiveness, simple rolling topography and higher landforms, but with capacity constrained due to their influence on the World Heritage Site. The capacity of this landscape type is variable, with the *Moorland Hills* of Eday having almost no capacity because of their small scale, while those on Hoy having capacity constrained by their scenic qualities, having been identified by SNH as a draft Core Area of Wild Land. The *Plateau Heaths and Pasture* landscapes, occurring mainly on South Ronaldsay and East Mainland are of limited scale and height, into which it would be difficult to introduce larger scale turbines without appearing prominent on the central island landmasses and dominating the neighbouring settled lowland landscapes. *Isolated Coastal Knolls* are prominent local landmarks within an otherwise lowland landscape, in which larger turbines would tend to be dominant.

The lowland, pastoral LCTs (*Rolling Hill Fringe, Inclined Coastal Pastures, Undulating Island Pastures, Low Island Pastures, Ridgeline Island Landscapes*) have a moderate to high underlying capacity for turbines, particularly of a smaller scale, fitting in with their productive agricultural character. The more peripheral parts of these landscape types, especially the *Low Island Pasture* and *Undulating Island Pasture* landscape types, can have capacity for larger turbines, especially where they occur on more remote headlands and detached from settlements, however sensitivities of coastlines and coastal features may prohibit the siting of turbines in some such locations. While not a pastoral landscape, the *Low Moorland* landscape character type has capacity for larger turbines when occurring in similar circumstances. An exception is the *Granite Coastal Pastures* of Stromness, a character area only occurring in this one location, having low capacity because of its importance to the setting of the picturesque town, and location within the National Scenic Area. The dispersed nature of settlement in these landscape types can tend to result in the very frequent occurrence of turbines within the landscape, which can lead to significant cumulative effects, especially if turbines of multiple size and type are seen within the same view.

Basin landscapes (*Loch Basins, Coastal Basins, Peatland Basins, Coastal Plain*) have a restricted underlying capacity primarily as a result of their landform and settlement, where large turbines would appear prominent on flat basin floors. The largest *Loch Basin* in Orkney, on West Mainland, is the landscape setting to the Heart of Neolithic Orkney World Heritage Site, and very sensitive to large turbine developments. Capacity for turbine development is typically limited to those of a small or medium scale.

The island landscape types of *Holms* and *Whaleback Island Landscapes* have low capacity. The smaller and mostly uninhabited Holms have the least capacity due to their scale and undeveloped character, while the *Whaleback Island Landscapes* have a higher capacity, typically for smaller turbines, to accompany the agricultural and farming development found on these islands.

6.4 Summary of Underlying Landscape Capacity; Existing and Proposed Cumulative Development and Effects

The following summarises underlying capacity for wind energy development by island groupings, and existing and proposed limits to cumulative wind energy landscape effects. Reference should be made to the existing and proposed wind energy landscape types shown in Figures 6.2 and 6.3.

6.4.1 South Isles *(Burray, South Ronaldsay, Flotta, Hoy)*

Orkney's South Isles vary considerably in their underlying landscape capacity and limits to their cumulative wind energy developments. The majority of Hoy has a low capacity for wind energy developments of most scales, resulting from the National Scenic Area, and the identification of an SNH draft Core Area of Wild Land. However its more developed south eastern coast has greater underlying capacity partly as a result of historic military / industrial development found in this part of Scapa Flow and the backclothing provided by

the highest hills in Orkney. Capacity exists locally for turbines up to 80m, and the existing *Landscape with Occasional Wind Turbines* could be extended to a *Landscape with Wind Turbines* in the vicinity of Lyness. However, the landscape to the north of Mill Bay is sensitive as a gateway to the NSA, and the majority of the east coast of Hoy should be retained as a *Landscape with No Wind Turbines*, or *Landscape with Occasional Wind Turbines* around South Walls to the south and Graemsay to the north.

The *Low Island Pastures* of Flotta provide opportunities for clusters of turbines between 50 and 80m located on the Golta peninsula. The islands of Flotta, Fara and the east coast of Hoy around Lyness are identified as a location for potential future strategic wind energy development as described in Section 6.5.5.

South Ronaldsay and Burray; well settled, low lying islands; have a capacity for small scale wind energy. Generally no capacity exists for turbine developments greater than 50m, even in single numbers, and developments limited to 30m with occasional turbines to 50m. The higher elevations of the *Plateau Heaths and Pasture* should be retained largely as a *Landscape with No Wind Turbines*. Exceptionally, local capacity for a small group of turbines to 80m exists on the southern most *Low Island Pasture* landscape of South Ronaldsay. An expansion of the existing *Landscape with Wind Turbines* is possible along the coastal fringes of South Ronaldsay, comprising small scale developments, and avoiding the *Cliff Landscapes* of the coastline. However the *Coastal Basins* to the north of the islands are close to capacity, where future developments should be restricted.

A small expansion of small scale developments could be accommodated on Burray, but development should not extend beyond the existing *Landscape with Occasional Wind Turbines*; relief from the more intensively developed wind energy landscapes on neighbouring Mainland and South Ronaldsay.

The small *Holm* and *Whaleback Island* character types have no capacity for developments, other than low levels on Graemsay described above.

6.4.2 Mainland *(West Mainland, East Mainland)*

The underlying capacity for wind energy on Mainland faces constraints because of the potential adverse influence of wind energy developments on the World Heritage Site, the National Scenic Area which includes the southern parts of West Mainland, the setting to Kirkwall and the town of Stromness. The greatest underlying capacity for larger wind developments to 80m are within the *Moorland Hill* landscapes of West Mainland, and *Undulating Island Pastures* and *Low Island Pastures* of East Mainland.

The *Rolling Hill Fringe* and *Inclined Coastal Pasture*s landscape types are the only others with capacity to accommodate single turbines up to 80m, largely because these landscape types are frequently backclothed by larger landforms.

Much of the Mainland landscape has capacity for smaller turbines, and turbines up to 50m, with the exception of the *Granite Coastal Pastures*, *Cliff Landscapes, Coastal Hills and Heaths,* and *Peatland Basin* landscape types, which comprise a relatively small proportion of the landscape area. The *Isolated Coastal Knoll* landscapes to the east of the area are sensitive, but have capacity for a modest level of smaller scale developments at their periphery.

Current levels of development create the appearance of a *Landscape with Occasional Wind Turbines* over much of West Mainland, and a *Landscape with No Wind Turbines* in most of the more upland landscapes, typically of *Moorland Hills, Coastal Hills and Heath, and Plateau Heaths and Pasture* landscapes.

More intensive wind energy landscapes are identified currently on West Mainland along the north east coast around the Burgar Hill and Hammars Hill developments, with a mix of large and small turbines creating *Wind Turbine Landscapes;* sections of the Rolling Hill Fringe to the east of the Loch of Harray (*Landscape with Wind Turbines*); and a concentration of small turbines to the west of Kirkwall (*Landscape with Wind Turbines*). On East Mainland, the Deerness peninsula currently appears as a *Landscape with Wind Turbines*, as does the *Coastal Basin* to the south.

Some residual capacity for larger scale wind energy developments is assessed to exist on West Mainland. Proposed limits to cumulative wind energy developments on West Mainland include a *Landscape with Wind Turbines* along the south facing slopes of the southern *Moorland Hills*, overlooking Scapa Flow, and a *Landscape with Wind Turbines* along much of the eastern coast. Limits to development in these areas would typically be single turbines up to 80m.

On East Mainland, the Deerness peninsula and southern *Coastal Basin* are assessed as close to capacity. Residual capacity exists mainly for smaller turbines up to 50m in other lowland pastoral landscape types, with proposed development limited to a *Landscape with Wind Turbines* in most lowland character areas, with the exception of the more upland *Plateau Heaths and Pasture*, and the Tankerness peninsula, to be retained as *Landscapes with Occasional Wind Turbines*.

Areas of especially constrained capacity include: the *Moorland Hill* tops of West Mainland; the uplands of *the Isolated Coastal Knolls*; the major *Loch Basin* of West Mainland; the south western most *Coastal Hills and Heaths*; the landscape around Stromness; and the *Cliff Landscapes*. These landscapes are to be retained as *Landscapes with No Wind Turbines or Landscapes with Occasional Wind Turbines* as indicated on Figure 6.2.

6.4.3 Inner North Isles *(Rousay, Shapinsay)*

The Inner North Isles are islands of differing character; Rousay having much in common with the hilly landscape of West Mainland; and Shapinsay with the low lying pastoral headlands of northern East Mainland. While of differing character, both have a limited underlying capacity for wind energy developments due to their small island scales.

The *Inclined Coastal Pastures*, *Coastal Basins* and *Loch Basins* of Rousay have capacity for smaller scale developments up to 30m and more occasionally those from 30 to 50m.

In contrast, the low lying *Ridgeline Island Landscape* of Shapinsay is constrained by its openness, and can generally accommodate only a relatively low density of smaller scale development, with occasional larger developments such as the existing 67m community turbine. Much of the lowland perimeter of Rousay appears as a *Landscape with Occasional Wind Turbines*, with a more intense *Landscape with Wind Turbines* in the *Coastal Basin* to the north east. This level of development is not proposed to change substantially, and developments on the relatively wild *Moorland Hill* tops should be

avoided. Shapinsay is proposed to be retained as primarily a *Landscape with Occasional Wind Turbines*.

6.4.4 Outer North Isles *(Westray, Papa Westray, Eday, Stronsay, Sanday, North Ronaldsay)*

Underlying capacity on these outer isles is mostly constrained by small island scale, and an extensively settled lowland character. In spite of these factors, certain characteristics of island geography and landform create opportunities for occasional larger scale installations.

Upland areas are few in the outer isles; the hilliest island is Eday, the *Moorland Hills* of which rise to no more than 100m AOD, against which larger turbines appear out of scale. The upland landscape of the west coast of Westray has qualities of wildness unsuited to wind energy developments.

Capacity for wind energy in the majority of the lowland pastoral landscapes of *Undulating Island Pastures*, *Low Island Pastures and Ridgeline Island Landscape* of Westray, Sanday and Stronsay is mostly of no more than 30m, but with occasional opportunities for wind turbines between 30 and 50m. The *Ridgeline Islands Landscapes* of Westray, and *Inclined Coastal Pastures* of Eday have low capacity for single turbines of between 50 and 80m.

Remoter areas of *Low Moorland* on Stronsay *and Undulating Island Pastures* on Sanday headlands do have capacity for multi-turbine developments where they can be separated from farms and houses, and do not dominate island features such as hills and sensitive coastlines.

Turbines positioned in these peripheral island locations have the advantage of being less likely to dominate their parent island, however the proximity between the islands, typically separated by no more than 2 – 3 km, mean that larger turbines have a significant influence over neighbouring islands. For example the existing 100m turbines on the southern tip of Sanday are only 3km from the east coast of Eday, with significant visual influence over much of the eastern part of the island.

The capacity of the smaller islands in the group, including Papa Westray and North Ronaldsay, is limited mostly to 30m, and exceptionally 40m in one location on North Ronaldsay.

Currently *Landscapes with Occasional Wind Turbines* or *Landscapes with No Wind Turbines* are most prevalent in the Outer North Isles. *Landscape with Wind Turbines* occur at the southern tip of Sanday and the Rothiesholm Peninsula on Stronsay, reflecting the multi-turbine installations in these locations. The only other *Landscapes with Wind Turbines* occur on the northerly tip of North Ronaldsay, and around the *Loch Basin* of Pierowall on Westray, which is approaching a *Wind Turbine Landscape*.

Residual capacity in these islands is mostly limited to smaller scale developments of up to 30m, with opportunities for larger turbines mostly restricted to the extension of the existing 50 to 80m development on Rothiesholm, Stronsay. Very little residual capacity is assessed to exist on Westray. The *Cliff Landscapes* and *Coastal Hills and Heaths* of Westray, and the undeveloped *Holms* and *Whaleback Islands* are the most constrained landscape types of the Inner North Isles, to be retained as *Landscapes with No Wind Turbines*.

6.5 Residual Capacity for Further Development

6.5.1 Areas with the Highest Underlying Capacity

Figure 6.4 identifies in dark green the areas which have the highest underlying capacity in Orkney for wind energy development. By this it is meant that they have the capacity to accommodate larger sizes of turbines, and/or greater concentrations of relative to other areas of landscape in Orkney. This is based on a combination of one or more factors including suitable larger scale simple landforms, landscape patterns, existing development / land use affecting character; lower visual sensitivity and lower landscape value. Not all these factors are present in every area identified, and the analysis and guidance in Section 6.2 should be followed.

The main areas are:

1. Brough Ness, South Ronaldsay;

2. Flotta and the landscape around Lyness to the south west of Scapa Flow;

3. The south facing slopes of the Moorland Hills of West Mainland overlooking Scapa Flow;

4: The northern Moorland Hills of West Mainland;

5. Rothiesholm on Stronsay; and

6. Spur Ness, southern Sanday.

6.5.2 Areas of Limited Underlying Capacity

The majority of the lowland areas of Orkney have limited underlying capacity, typically for small scale developments up to 50m which are usually easily absorbed into the productive, settled, agricultural landscape, and more occasional individual turbines to 80m. Capacity varies according to landscape character type, with more sensitive lowland character types including exposed *Ridgeline Island Landscape*, and enclosed *Loch Basins* and *Coastal Basins*. These areas are shown in light green in Figure 6.4.

6.5.3 Areas with No Underlying Capacity

There are areas with no underlying capacity in Orkney. These are left uncoloured in Figure 6.4:

1. Most of the *Moorland Hills* of Hoy;

2. The *Rugged Glaciated Hills* and *Glaciated Valleys* of Hoy;

3. The *Cliff Landscapes* of Hoy, West Mainland and Westray, with associated *Coastal Hills and Heaths;*

4. The northern tip of Papa Westray;

5. The *Moorland Hill* tops of southern West Mainland, Rousay and Eday; and

6. The Holms.

It is recommended that these landscape types and areas remain undeveloped with turbines to protect their character, avoid widespread visibility, protect key viewpoints and features and particularly to protect the landscapes of the National Scenic Area and World Heritage Site.

6.5.4 Areas where Cumulative Impact Limits Further Development

Many areas of Orkney have consented developments, or developments nearby, which result in the landscapes having reached, or being close to reaching, their limits of cumulative wind energy developments, as hatched in red on Figure 6.4:

1. The north western corner of South Ronaldsay, around Widewall Bay;

2. The *Inclined Coastal Pastures* etc including, and adjacent to the Burgar Hill and Hammars Hill turbine developments on the east coast of West Mainland, extending across the sound to the Inclined Coastal Pastures on the south coast of Rousay;

3. The *Coastal Basin* to the north of St Mary's in East Mainland;

4. Most of Deerness on East Mainland;

5. The *Coastal Basin* in the north east of Rousay; and

6. The *Loch Basin* around Pierowall on Westray.

These areas are defined by the following criteria:

- The developed areas of windfarms and turbines (operational and consented) and the cumulative extent of their impacts on the surrounding landscape;
- The underlying landscape capacity within the LCAs and for those surrounding them; and
- The extent of area within which further significant development should be limited to avoid extending cumulative landscape and visual impacts between the groups of turbines within the cumulative area and other turbines outside the area.

The boundaries shown in Figure 6.4 are indicative. They are described in more detail for each area in Table 6.3 below, together with the main objectives for limiting further development. In the case of specific development proposals there should be an assessment relating to the detailed criteria.

6.5.5 Areas of Potential Future Strategic Wind Energy Development

Landscape capacity for wind energy development has been assessed for individual landscape character areas on the basis of their landscape character and visual sensitivity, and accounting for the island contexts in which individual landscape character areas occur.

The premise of this assessment is that in most areas wind energy development will result in a degree of landscape change, and this assessment has identified an acceptable level of development which would introduce a non-fundamental or an acceptable level of change to key landscape characteristics and visual resources. In some especially sensitive areas, 'landscape protection', i.e. maintenance of existing landscape character, has been appropriate.

It is necessary to consider, within the wider context of Orkney, locations where it may be acceptable to go beyond 'landscape accommodation', where landscapes are allowed to change more fundamentally in order to meet local and national policy objectives for wind energy development, and thus avoiding unacceptable levels of development in other more sensitive areas.

Only one such location is identified in Orkney, encompassing the islands of Flotta, Fara and part of the west coast of Hoy around Lyness as identified on Figure 6.4. The reasons for this area being identified as suitable for more significant landscape change are:

- The historic military/industrial development that has occurred to the south west of Scapa Flow for over a century, including the semi-industrialised nature of the landscape around Lyness on eastern Hoy, including old military buildings and infrastructure, plus contemporary marine energy development;
- The presence of the existing Flotta oil terminal which has an industrialising influence on the island and surrounding landscape / seascape;
- The large scale seascape of Scapa Flow into which larger scale wind energy developments could be absorbed;
- The presence of the large landmass and high *Moorland Hills* of Hoy which would form a backdrop to the turbines when seen from may viewpoints; and
- The distance from the NSA, the key characteristics of which are unlikely to be significantly affected by larger scale wind energy developments in the area.

Wind energy developments exceeding the size and scale provided in these assessments must be justified, and the following guidance should be taken into account:

- Developments on the east coast of Hoy should be broadly in line with this assessment in terms of the pattern of wind energy development so as to respect the landform, landuse and settlement patterns, even if an increase in size/numbers of turbines is justified. Developments to the north of Mill Bay require careful siting to avoid impacting the transition to the NSA, and should extend no further than Pegal Head.
- Larger scale development on Flotta would be best accommodated on the *Low Island Pastures* of the Golta peninsula to the north east of the island, where turbines would tend to be seen extending into the larger scale seascape. The *Low Moorland* of the island also has underlying capacity for larger turbines, but unacceptable levels of cumulative impact would most likely occur should both areas

be developed to a substantial degree (i.e. clusters of 50m+ turbines in both areas) especially given the nearby residential population of Flotta.

- The character of the *Whaleback Island* of Fara would be fundamentally altered by wind energy development, however the surrounding industrially affected context of Lyness and Flotta oil terminal may mean that large scale wind energy development in this location is acceptable. Guidance on siting turbines in this small island landscape is of limited value, and the design of any wind energy development here should be subject to site specific assessment.

Table 6.3 Where Cumulative Impact Limits Further Development

Description The pastoral landscapes around Widewall Bay including the *Coastal Basin, Inclined Coastal Pastures, Plateau Heaths and Pastures and Cliff Landscape Types*.	**Development Situation and Key Objectives** Sensitivities occur because of the presence of numerous small scale turbines in view around the open, picturesque landscape of the bay, especially when viewed from the settlement of Herston. The objectives governing the area are: 1) To prevent an unacceptable concentration of development which may result in the creation of a *Wind Turbine Landscape* around the bay; and 2) Prevent the sky lining of developments in prominent locations, such as the nearby *Plateau Heaths and Pastures* and *Cliff Landscapes*.
Description The area comprises the north eastern most area of *Inclined Coastal Pastures* on West Mainland, extending south east to encompass Hammars Hill. The area extends across Eynhallow Sound to include the Inclined Coastal Pastures of south west Rousay.	**Development Situation and Key Objectives** This area is strongly influenced by the larger Hammars Hill and Burgar Hill wind farm developments, the influence of which extends across the Eynhallow Sound to parts of Rousay. These large developments are frequently seen together with smaller turbines, in parts creating a *Wind Turbine Landscape*. The objectives governing the area are: 1) Avoiding the expansion of the *Wind Turbine Landscapes* on Mainland by ensuring sufficient separation between developments of all sizes, and ensuring turbines groupings and size appear coherent; and 2) Limiting developments along the south western coast of Rousay to maintain a Landscape with Occasional Wind Turbines, minimising cumulative effects resulting from larger turbine developments being visible on both sides of the Eynhallow Sound.
Description The area of the *Coastal Basin* landscape type found to the north of St Mary's.	**Development Situation and Key Objectives** The area to the north of St Mary's is well settled including the main road to South Ronaldsay. Smaller scale turbine developments are commonplace, often with a few hundred metres of each other. 1) To limit additional developments at all scales to avoid creation of a *Wind Turbine Landscape* within the *Coastal Basin Landscape*.

Description The majority of the Deerness peninsula on East Mainland	**Development Situation and Key Objectives** The Deerness peninsula includes numerous wind energy developments, the majority of which are small scale, up to 30m, however the area also includes four 67m turbines which create a large area of *Landscape with Wind Turbines*. The objectives governing the area are: 1) To limit additional developments at all scales to avoid creation of a *Wind Turbine Landscape* within *the Undulating Island Pasture* landscape; and 2) To protect sensitive parts of the coastline, for example the *Cliff Landscape*, from the intrusion of wind energy developments.
Description The area comprises the *Coastal Basin* landscape type, extending to the peripheries of the neighbouring Moorland Hills and Peatland Basin.	**Development Situation and Key Objectives** From this populated landscape area it is possible to see a range of turbines sizes and styles, including the 67m community turbine. The objectives governing the area are: 1) To limit additional developments at all scales to avoid creation of a *Wind Turbine Landscape* within the *Coastal Basin Landscape*.
Description *Loch Basin* to the landward side of Pierowall Harbour.	**Development Situation and Key Objectives** Pierowall is the main settlement of Westray, where numerous small scale turbines, often in arrays, are visible within and outside the settlement, with the large 67m turbines frequently in view. The objectives governing the area are: 1) Maintain separation between the main settlement of Pierowall and turbines of all scales to avoid intrusion; and 2) To ensure that a *Wind Turbine Landscape* is not created through the introduction of additional developments close to existing ones.

Legend

- Landscape Character Areas

Capacity

- High Capacity
- Medium Capacity
- Low Capacity
- No Capacity
- Urban

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Figure 6.1a

Underlying Landscape Capacity (Small: <20m Turbines)

N

0 5 10 20 Km

Legend

- Landscape Character Areas

Capacity

- High Capacity
- Medium Capacity
- Low Capacity
- No Capacity
- Urban

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Figure 6.1b

Underlying Landscape Capacity (Medium: 20 to <30m Turbines)

N

0 5 10 20 Km

Legend

- Landscape Character Areas

Capacity

- High Capacity
- Medium Capacity
- Low Capacity
- No Capacity
- Urban

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Figure 6.1c

Underlying Landscape Capacity (Medium / Large: 30 to <50m Turbines)

N

0 5 10 20 Km

Legend

- Landscape Character Areas

Capacity

- High Capacity
- Medium Capacity
- Low Capacity
- No Capacity
- Urban

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Figure 6.1d

Underlying Landscape Capacity (Large: 50 to <80m Turbines)

N

0 5 10 20 Km

Legend

- Landscape Character Areas

Capacity

- High Capacity
- Medium Capacity
- Low Capacity
- No Capacity
- Urban

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Figure 6.1e

Underlying Landscape Capacity (Very Large: 80m to <125m Turbines)

N

0 5 10 20 Km

Legend

Wind Turbines - Existing / Consented

- Small (<20m)
- Medium (20 to <30m)
- Medium / Large (30 to <50m)
- Large (50 to <80m)
- Very Large (80m+)
- Landscape Character Areas

Type

- Landscape With No Wind Turbines
- Landscape With Occasional Wind Turbines
- Landscape With Wind Turbines
- Wind Turbine Landscape

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Figure 6.2

Current Consented Development: Wind Energy Landscape Type

N

0 5 10 20 Km

Legend

Wind Turbines - Existing / Consented

- Small (<20m)
- Medium (20 to <30m)
- Medium / Large (30 to <50m)
- Large (50 to <80m)
- Very Large (80m+)

Wind Turbines - Applications

- Small (<20m)
- Medium (20 to <30m)
- Medium / Large (30 to <50m)
- Large (50 to <80m)
- Landscape Character Areas

Type

- Landscape With No Wind Turbines
- Landscape With Occasional Wind Turbines
- Landscape With Wind Turbines
- Wind Turbine Landscape

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Figure 6.3

Proposed Limits to Development: Wind Energy Landscape Type

N

0 5 10 20 Km

Legend

Capacity

- Areas with Highest Underlying Capacity
  1. *Southern South Ronaldsay*
  2. *East Hoy & Flotta*
  3. *Southern Moorland Hills, West Mainland*
  4. *Northern Moorland Hills, West Mainland*
  5. *South Stronsay*
  6. *South Sanday*
- Areas with Limited Underlying Capacity
- Areas with No Underlying Capacity
- Areas where Cumulative Impact Limits Development
  1. *Widewall bay*
  2. *Evie / Southern Rousay*
  3. *St Marys*
  4. *Deerness*
  5. *North East Rousay*
  6. *Pierowall*
- Landscape Character Areas
- Area of Potential Fututre Strategic Wind Energy Development

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Figure 6.4

Indicative Wind Turbine Development Opportunitites and Constraints

N

0 5 10 20 Km

APPENDIX 1: CURRENT POLICY AND GUIDANCE FOR ONSHORE WIND ENERGY

1.1 National Policy and Guidance

1.1.1 Scottish Planning Policy

National policy in relation to renewable energy development is expressed in SPP 2014 with related web-based guidance reflecting the Scottish Government's commitment to greatly increasing the amount of energy produced by renewable sources. Inevitably it focuses on land based wind power as, at least in the short term, the most available resource suitable for expansion.

SPP is thus very positively disposed to renewable energy production and directs all councils to create development plan policies that seek to ensure an area's full potential for electricity and heat from renewable sources is achieved, in line with national climate change targets, giving due regard to relevant environmental, community and cumulative impact considerations.

SPP states that development plans should set out a Spatial Framework for windfarms identifying those areas that are likely to be most appropriate for onshore wind farms and should indicate the minimum scale of development their spatial framework is intended to apply to. Development plans are also required to set out the criteria that will be considered in deciding *all* applications for wind farms of different scales – including extensions and re-powering – taking account of detailed considerations set out at paragraph 169, which lists a series of criteria. Paragraph 169 clearly indicates cumulative impacts should be considered as a potentially significant constraint:

> *'cumulative impacts – planning authorities should be clear about likely cumulative impacts arising from all of the considerations below, recognising that in some areas the cumulative impact of existing and consented energy development may limit the capacity for further development;'*

This applies to, amongst other factors, landscape and visual impacts including wild land.

1.1.2 Scottish Government Guidance

Scottish Government provides frequently updated web based guidance on onshore wind energy:

http://www.gov.scot/Topics/Built-Environment/planning/Policy/Subject-Policies/Utilities/Delivering-heat-electricity/renewables-advice

1.1.3 Scottish Natural Heritage Guidance

Scottish Natural Heritage provides comprehensive guidance on most aspects of onshore wind energy development and the landscape:

- Assessment of landscape and visual impacts and visual representation of wind turbines;
- Siting and design guidance;
- Assessment of cumulative impacts.

This information can be found on the SNH website:

http://www.snh.gov.uk/planning-and-development/renewable-energy/onshore-wind/landscape-impacts-guidance/

APPENDIX 2: CUMULATIVE IMPACT AND LANDSCAPE CAPACITY ASSESSMENT METHODOLOGIES

1.0 Background

Cumulative environmental impact is the impact that results from incremental changes caused by past, present or reasonably foreseeable actions. Scottish Government Guidance on wind energy states:

> *'Assessing the cumulative impact of a number of wind turbines or a number of wind farms involves considering the combined effects of siting proposals in proximity to each other'.*

Cumulative impact is a critical consideration in the case of landscape and visual impacts of onshore wind turbines and windfarms in Scotland due to the current number of existing and consented developments in the landscape, proposed developments in the planning system and the long term implications of national policy that encourages the development of onshore wind energy generation.

The characteristics of wind turbines that lead to cumulative impacts include:

- The large scale and striking visual appearance of wind turbines and windfarms in most landscapes;
- The great extent of their visibility and the potential for intervisibility between wind turbine developments and as seen by receptors.

The larger modern turbines are prominent, large scale, man-made features and there are few other precedents in terms of scale, height and appearance in most landscapes. Topography aside, they are much taller than any natural features such as trees or most buildings and other structures. Of similar built structures in rural landscapes, electricity pylons are significantly smaller than the largest turbines and although broadcasting masts are often taller they are usually singular and infrequent, whereas wind turbines are built in multiples, often in great numbers. Furthermore, most landscape features are static whereas wind turbines rotate. Smaller turbines may also present issues of scale and appearance in more localised contexts, as well as visual confusion when seen together with larger turbines.

This study requires the assessment of cumulative development and landscape capacity. However it is recognised in guidance that the determination of landscape capacity and cumulative impacts is not a straightforward exercise. The background and considerations involved in this process are detailed in this Appendix.

Definitions of the term 'capacity' applied to landscape generally refer to the ability to accept a development without a 'significant' or 'unacceptable' level of change to a landscape. This implies that criteria must be identified and thresholds must be determined to give meaning to the words 'significant' and 'unacceptable'.

Guidance on the assessment of cumulative impacts and landscape capacity is available from a number of sources, most particularly Scottish Natural Heritage *Assessing the cumulative impact of onshore wind energy developments (March 2012)* but also in UK guidance (e.g. *Landscape Character Assessment Guidance for England and Scotland Topic paper 6: Techniques and Criteria for Judging Capacity and Sensitivity. SNH and The Countryside Agency, 2002*) and will be referred to in the following sections.

The determination of 'cumulative impacts' and 'capacity' is subject to debate. No clear guidance is given in the published information beyond the need for the individual impact assessor or Development Plans to determine what the assessment criteria and significance thresholds are. Reasoned argument applicable to the specific circumstances applies, rather than the establishment of an absolute or universal definition. Inevitably this approach is subject to differences of opinion, with thresholds of significance and views on acceptability often differing depending on the background or vested interests of those involved in the debate.

In the absence of any clearly stated or agreed criteria or thresholds and to progress this study some form of threshold or thresholds need to be defined. In order to do this a number of terms and concepts need to be clarified, defining exactly what is being assessed and how. The purpose of the following section is to focus the subsequent assessment and to provide guidance and a basis for decisions to be made by the appropriate authorities.

2.0 Defining Terms: Sensitivity, Significance, Capacity and Acceptability of Change

The SNH/Countryside Agency *Topic Paper 6* of *Landscape Character Assessment: Guidance for England and Scotland (2004)* refers to the fact that the terms 'sensitivity' and 'capacity' have often been used in an interchangeable manner in landscape character assessment, essentially referring to the ability of a landscape to absorb change without a significant effect on its character. A landscape of high sensitivity is often considered to have a low capacity for change, and vice-versa. Furthermore sensitivity is used as a key criterion in determining both significance of impact and landscape capacity. In fact there are subtle but important differences between sensitivity and capacity. This section discusses the differences and interrelationships between sensitivity, capacity and significance in landscape character assessment and how the acceptability of change may be determined.

2.1 Landscape Sensitivity

The sensitivity of a landscape is a measure of its inherent vulnerability to potential changes and their effects on fabric and character. Vulnerability to change can be considered in two ways:

1) As an inherent part of the landscape's characteristics, regardless of possible types or scales of change that may occur; or

2) In relation to a specific proposed type and scale of change.

In the former case the assessment of sensitivity would be applied in landscape character assessment where no particular change is being contemplated or assessed, and the landscape is being considered in a resource planning context. In the latter case the assessment of sensitivity would typically be applied in an Environmental Impact Assessment where specific changes are envisaged. In the EIA case the sensitivity of the receiving landscape would be assessed against the magnitude of change in order to determine impact significance.

2.2 Landscape Capacity

Landscape capacity is variously described as the ability of a landscape to accommodate (or absorb) change without a significant (or unacceptable) change in fabric or character. This is usually taken to mean whether or not one or more of the key defining characteristics of the landscape is changed such that the overall fabric or character of the landscape is changed, i.e. a 'capacity threshold' is crossed. In the case of windfarms it is primarily landscape character that is being considered, particularly in cumulative assessments.

The determination of landscape capacity is closely related to landscape sensitivity and the determination of significance of impact. However assessment of capacity is a not necessarily based around the assessment of known development proposals, but rather the hypothetical ability to accommodate particular types of development, such as windfarms, before a threshold or series of increasing thresholds are crossed.

According to *Topic Paper 6,* in determining capacity not only the sensitivity of the landscape to the particular type of development is considered but also the *landscape value* of the area concerned. Value may be determined in a number of ways, including by landscape designations (national, regional or local); cultural and historic associations and in terms of how it is valued by those who live in it or use it in some way.

The determination of capacity is primarily a planning tool rather than a reactive or assessment tool. Nevertheless the determination of capacity thresholds can also be used to assess existing levels of development or potential development scenarios such as is the case with windfarm developments in Orkney.

2.3 Determination of Impact Significance

The principles involved in determining impact significance are the same whether a single or multiple developments are being considered. This involves assessing:

1) The sensitivity of the receptor to the type of change proposed; and

2) The magnitude of change that would result from the proposals.

Sensitivity and magnitude are considered in combination, leading to an overall assessment of impact. This informs a determination of whether the impact is significant in terms of the EIA regulations. In doing this the considerations about what exactly is being assessed should be taken into account and clearly delineated including baseline, types of impacts and specific developments.

The threshold at which significance is determined in relation to the EIA regulations should also be defined prior to assessment. However, this threshold is particularly open to debate and often subject to the perceptions of different groups of stakeholders.

2.4 The Nature of Impacts

The issue of whether impacts are positive, beneficial or neutral is also an important consideration when making decisions on the acceptability of impacts, regardless of their significance. If an impact were considered positive or neutral in nature it is likely that its level of significance would be considered less critical than were it considered negative. Most windfarm developers equivocate this issue by reference to public opinion polls indicating support for renewable energy and the division of public opinion that is apparent over most windfarm developments. This masks the underlying landscape issue that should be considered independently of a windfarm's primary function or other effects.

The purpose of a windfarm is to provide renewable energy involving low levels atmospheric carbon pollution. This accords with current policy and is considered positive and beneficial. Conversely, wind turbines are objects that are unprecedented in scale and appearance in most landscapes, especially the rural areas in which they are mainly located. Many published landscape character assessments of rural areas do not specifically mention wind turbines and windfarms, although increasingly there are guidelines relating to placing them within particular character types. Furthermore, whilst government policy and advice (e.g. SPP, web based guidance, SNH guidance) and local authority policy (Development Plans) support their development, it is always with a precautionary note relating to balancing benefits and impacts.

Web based guidance for onshore wind states:

> *'Wind turbines can impact upon the landscape by virtue of their number, size or layout, how they impact on the skyline, their design and colour, any land form change, access tracks and ancillary components anemometers, substations and power lines. The ability of the landscape to absorb development often depends largely on features of landscape character such as landform, ridges, hills, valleys, and vegetation'.*

and:

> *'As more areas of search are taken up and as more sites are proposed within or near sensitive landscapes, landscape protection and designing appropriate mitigation through conditions and/or legal agreements, will become a more routine consideration alongside maximising the potential of wind energy. In relation to landscape impact, a cautious approach is necessary in relation to particular landscapes which are rare or valued, such as National Scenic Areas and National Parks'.*

Wind turbines are placed in the landscape for a specific purpose other than landscape change. Given this fact and the nature of Government advice, a precautionary approach should be taken in the assessment of impacts by concluding that in most cases the impacts are to some degree negative. The degree of negative impact and level of significance will of course depend on the characteristics of the landscape in which the

windfarm is located. It is conceivable that in some degraded or industrial landscapes the construction of a windfarm could be considered a neutral or positive change.

In terms of visual impacts the issue of public opinion is more relevant, but a precautionary note applies in this case as well. Particularly the issue of positive responses to the provision of clean energy needs to be separated from the consideration of visual impact of turbines in the landscape.

2.5 Acceptability of Change

As discussed above there is published guidance on methods of assessment of cumulative landscape and visual impacts of windfarms (e.g. SNH, 2012) and separate guidance on the factors that determine impact significance (e.g. LI & IEMA, 2002). However there is currently no generic guidance that defines how to determine the *acceptability* of impacts. Indeed generic guidance on acceptability may be inappropriate as any judgement on this is contextual and often a case of weighing perceived impacts against perceived benefits. The impacts and benefits will often be different in type and the balance of judgement is to an extent subjective. The acceptability of change in any particular landscape will depend on the nature of the landscape, the significance of the impacts and the purpose of the change. The final judgement is often informed by and weighed against specific development plan policies and material considerations.

The determination of significant change should theoretically be a clearly defined stage in this process, similar to an impact assessment. Nevertheless, as previously discussed, significance in landscape and visual impact assessment is not universally defined and is open to debate. If the significance of change is open to interpretation, then 'acceptability' of change is a still less definable term that is often based on opinion and is open to debate.

What is acceptable to one individual or organisation may not be acceptable to another. What may be seen as unacceptable change in a narrow context (e.g. landscape and visual impacts) may be seen as acceptable when considering the overall balance of positive and negative impacts (e.g. provision of carbon-neutral energy). In a study of windfarms in the Western Isles (SNH, 2004) the idea of a predetermined 'carrying capacity' is questioned and the concept of *Limits of Acceptable Change* (LAC) is discussed:

> *'LAC is first and foremost a process through which decisions are made on the conditions which are acceptable and then prescriptions are made for the actions needed to protect or achieve those conditions. So the objective of the LAC process is not to prevent change but rather to control it and to decide on the actions required to maintain or achieve the desired conditions. Other key features of LAC are the use of indicators and a monitoring programme. As a process, LAC is always participatory and multi-disciplinary, and may or may not involve a wide range of stakeholders. Whilst the term capacity may still be used in LAC, (recreational) carrying capacity is not a simple, single, absolute value. It is the amount, kind and distribution of use that can occur without causing unacceptable impacts on either natural resources or the perceptions and experiences of the users'.*

This concept requires qualitative judgements about what is important in a landscape or to people using that landscape and what level of change is acceptable (i.e. what types and levels of change can take place before the landscape is considered to be critically or significantly changed). In the context of this study, acceptability of change will be related to cumulative landscape and visual impacts judged against landscape capacity as determined by structured a process of judgement; the provisions of criteria-based landscape policies; other material considerations and the wider Scottish picture of windfarm development. No account will be taken of the other potential impacts or benefits of windfarms. The resulting judgements of this study will need to be balanced against the other benefits or disadvantages of the proposals.

2.6 Developing a Cumulative Impact Assessment Methodology

2.6.1 Cumulative Impacts

For the purposes of this study, cumulative impacts are taken to be those arising from more than one of the same development type, rather than the accumulation of changes making up one development. In the case of wind energy developments, cumulative studies concentrate on other wind energy developments. In practice, other features in the landscape or views (e.g. communications masts or electricity pylons) should also be taken into account. Nevertheless, given the singular appearance of windfarms and their generally isolated rural locations, the potential for overlap of cumulative impacts with other developments is more limited.

2.6.2 Baseline

The baseline for a cumulative, or indeed any, assessment is usually taken to include the existing landscape and visual receptors in the study area at the time of assessment. The baseline should include all operating wind energy developments and, arguably, all consented wind energy developments as this is effectively the 'permitted landscape'. The assessment of change and significance of impact should be carried out relative to this baseline whether carrying out a standard or cumulative assessment.

Nevertheless, a landscape capacity study leading to the determination of an 'acceptable' level of windfarm development requires consideration of a full picture of all the wind energy developments in the landscape: operating, consented and proposed, in order to determine the extent and acceptability of change. The fact that there are operating or consented turbines in an area is not necessarily an indication that the landscape is less sensitive to further development and that capacity is available. Indeed, depending on the landscape type, degree of development and objectives of policy in relation to landscape character, it may mean that most or all of the capacity is already occupied. Therefore, despite the existing baseline, the development must also in effect be considered relative to the underlying landscape.

2.6.3 Types of Cumulative Impact

Landscape

The assessment of cumulative landscape impacts involves an assessment of change in the fabric and character of the landscape as a result of the combined changes of more than one development. The changes are assessed in relation to defined areas of landscape such as a project study area, landscape character area or designated

landscape. As previously discussed, it is effects on landscape character that are the primary focus in relation to windfarms from which all other assessments are derived.

Visual

The assessment of cumulative visual impacts involves an assessment of the change in views and visual amenity as a result of combined changes of more than one development, as experienced by people at their homes and during recreation, travel or work. There are three types of cumulative impact in relation to visual receptors:

1) Combined: more than one development is seen from a single static viewpoint in one arc of view (i.e. within the span of one view, without the receptor turning around). This would include particular directional viewpoints or the view from the principal aspect of a residential property.

2) Successive: more than one development is seen from a single static viewpoint by a receptor turning around to encompass more than one arc of view, up to 360^0. This includes high and open viewpoints, or views from all aspects of a residential property.

3) Sequential: more than one development is seen by a receptor visiting a series of viewpoints. This may involve travelling along a linear route or through an area in which views of the developments may be continuous or intermittent and different developments may be seen at different locations. This includes roads, railways, paths and other defined routes or could involve an area such as a designated landscape.

In practice most assessment will include all of these types of impact in order to gain a full picture of how cumulative impacts will be experienced by receptors.

2.6.4 Effect of Pattern of Development on Perception of Impact

Cumulative studies tend to focus on the number of windfarms, turbines or output capacities within a particular area as an indication of level of cumulative impact. Nevertheless, there is not necessarily a simple relationship between numbers, areas and cumulative impact. The pattern of windfarm and wind turbine development in terms of size, layout and proximity may also affect the perception of cumulative impacts.

The effect of proximity of different windfarms and turbines to one another has a bearing on impacts. Whilst close proximity of two or more windfarms may reduce the total area visually affected, the level of perceived cumulative impact may be increased by juxtaposition of windfarms or turbines of significantly different appearance (due for example to differing turbine sizes or site layouts) leading to a jarring visual clash or an untidy, disorganised appearance.

Furthermore, studies and planning decisions have indicated that there is less resistance to expansion of existing windfarms than to creation of separate new windfarms. In particular, respondents to a survey on impacts of windfarms on tourism in Scotland (Glasgow Caledonian University and others, March 2008) showed little concern about views being affected by one windfarm compared with more than one windfarm being visible in the same view.

> *"A significant proportion of respondents (44%) agreed that they don't like to see several wind farms in the same view. These results suggest that those respondents who have indicated having a neutral or even positive perspective on individual wind farm sites are less likely to have a similar opinion on a landscape that has several developments in view.*
>
> *This clear result compares with analysis in the previous section where there was a small increase in the negative response as the visual impact increased for an individual wind farm development. This suggests that people see one large scale development in an area as preferable to several smaller scale developments dotted on the landscape.*
>
> *On the other hand, both sets of results also confirm that a definite tipping point exists where wind farm development becomes untenable for a significant number of visitors".*

Current guidance and recent planning decisions are tending towards the concept of concentration of wind turbines into large clusters in certain areas. This is on the basis that this reduces the potential for a widespread dispersal of effects over a larger area and allows areas more sensitive to windfarm development to remain free of windfarm development. SNH guidance now highlights this issue and supports this type of approach where appropriate (*SNH, 2009*).

The policy may also offer advantages in terms of economies of scale for site servicing and electricity transmission. The disadvantages are likely to be that areas chosen for concentration of the turbines are likely to be significantly and adversely affected by development – this being effectively a 'sacrificial' landscape policy.

2.6.5 Setting Assessment Objectives

What exactly is being assessed depends on the purpose of the cumulative assessment. In the case of an EIA for a single development it is primarily the impacts of the proposal and its contribution to cumulative impacts that is being assessed. Such a study would therefore typically concentrate on areas in which the impact of the windfarm under consideration is significant and give only slight consideration to areas in which it is not, even if there were significant cumulative impacts from other windfarms.

In the case of a more broad-based cumulative study such as this, it is the overall impact of windfarm developments on a defined study area that is being assessed. Nevertheless this study requires a consideration of the both the full cumulative impact *and* the contribution that specific developments (proposed or operating) make to that impact, in order to inform decisions.

2.6.6 Defining Thresholds of Cumulative Development

The discussion above has defined the terminology and our approach to cumulative assessment. It has isolated the central issues that inform the assessment of acceptability of levels of change. The key requirement is to develop a methodology for defining thresholds of significance and acceptability that are clear and robust enough to be accepted by all sides of the debate. This study is a stage in the debate about acceptable

levels of change in the landscape of Orkney. Whilst we can describe and define what those levels of change might be it is difficult to enforce a universal view as to what levels of change are significant or acceptable.

Scottish Government Guidance underlines the landscape and visual issues associated with increasing levels of cumulative wind turbine development:

> *'In areas approaching their carrying capacity the assessment of cumulative effects is likely to become more pertinent in considering new wind turbines, either as stand alone groups or extensions to existing wind farms. In other cases, where proposals are being considered in more remote places, the thresholds of cumulative impact are likely to be lower, although there may be other planning considerations.*
>
> *In assessing cumulative landscape and visual impacts, the scale and pattern of the turbines plus the tracks, power lines and ancillary development will be relevant considerations. It will also be necessary to consider the significance of the landscape and the views, proximity and inter-visibility and the sensitivity of visual receptors.'*

SNH guidance *Siting and Designing Windfarms in the Landscape* (SNH, Dec 2009) lists the factors that affect the perception of cumulative impact of windfarm development:

> *'The cumulative impact of windfarm development on landscape and visual amenity is a product of:*
>
> *• the distance between individual windfarms (or turbines);*
> *• the distance over which they are visible;*
> *• the overall character of the landscape and its sensitivity to windfarms;*
> *• the siting and design of the windfarms themselves; and*
> *• the way in which the landscape is experienced.*
>
> *The combination of single turbines and small clusters of turbines can raise the same issues'.*

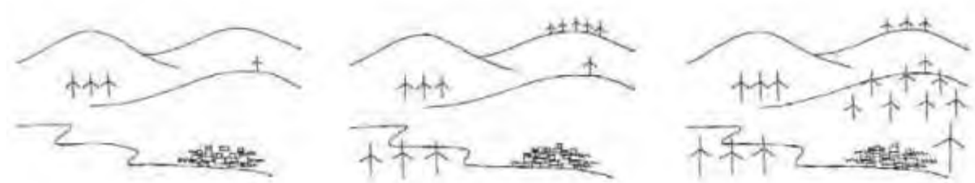
To this list might be added turbine height and windfarm size. In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail.

The SNH guidance identifies three broad levels of cumulative change in the landscape that may be set by local authorities depending on landscape sensitivity and value and local policy objectives:

- **Landscape Protection:** Maintain existing landscape character.
- **Landscape Accommodation:** Accept a degree of change providing this is not detrimental to key landscape characteristics and key visual resources.
- **Landscape Change:** Accept large amounts of change that may have detrimental effects on key landscape characteristics and visual resources.

In determining an acceptable level of development, it is necessary to clearly define what differing levels of development actually entail. The methodology therefore sets out defined levels of change to the landscape and visual environment that might occur or be experienced depending on the size, number and location of turbines to be built within an area.

The descriptions in Table 1 below set out a gradated landscape typology that defines the terms of reference for increasing levels of cumulative landscape and visual impact of turbines. It does this by describing their effect on landscape character and the experience of those living in or travelling through the landscape. Further generic illustration of this concept is provided in Part 1 Section 5 of the SNH guidance:



The purpose of this approach is to address the gap between results of cumulative impact assessment and judgements on acceptability of change. It does not set thresholds of significance or acceptability but it does present a framework that describes levels of change in landscape character and the experience of visual receptors in the landscape. This can then be used to inform and shape the debate concerning the degree of change in a landscape and the acceptability of cumulative impacts and the *Limits of Acceptable Change*.

Table 1. Description of Levels of Cumulative Wind Turbine Development

	Landscape Character	Visual Experience
Landscape with no Wind Turbines	A landscape type or area in which no or very few wind turbines are present, and none are clearly visible from neighbouring areas.	There would be no discernible effects on visual receptors.
Landscape with Occasional Wind Turbines	A landscape type or area in which windfarms or wind turbines are located and/or are close to and visible. However they are not of such a size, number, extent or contrast in character that they become one of the defining characteristics of the landscape's character.	Visual receptors would experience occasional close-quarters views of a windfarm or turbine and more frequent background views of windfarms or turbines. Some of the turbines would not be perceived as being located in the landscape character type or area. No overall perception of wind turbines being a defining feature of the landscape.
Landscape with Wind Turbines	A landscape type or area in which a windfarm, windfarms or wind turbines are located and/or visible to such an extent that they become *one* of the defining characteristics of the landscape character. However, they are clearly separated and not the single most dominant characteristic of the landscape.	Visual receptors would experience frequent views of windfarms or wind turbines as foreground, mid-ground or background features, affecting their perception of the landscape character. However there would be sufficient separation between windfarms and turbines and sufficient areas from which wind turbines are not visible such that they would not be seen as dominating the landscape over all other landscape features.
Wind Turbine Landscape	A landscape type or area in which windfarms or wind turbines are extensive, frequent and nearly always visible. They become the dominant, defining characteristic of the landscape. Nevertheless there is a clearly defined separation between developed areas.	Visual receptors would experience views of windfarms as foreground, mid-ground and background features, to the extent that they are seen to dominate landscape character. Few areas would be free of views of wind turbines.
Windfarm	Landscape fully developed as a windfarm with no clear separation between groups of turbines. Few if any areas where turbines not visible.	Visual receptors would always be close to and nearly always in full view of wind turbines.

The above descriptions of levels of turbine development within a landscape are necessarily simple, factual and generic. They can be applied to any chosen scale of study area, from a region to a landscape type or a single landscape character area. They do not apply to any specific baseline landscape type or types: indeed the character of the landscape is likely to affect judgements on the assignation to a particular level of development. For instance, a large scale landscape may be less dominated and affected than a smaller scale landscape; or a more complex topography, or a densely wooded landscape may reduce the visibility of wind turbines within an area and hence affect the perception by visual receptors. A large landscape character area will require a greater extent and frequency of development than a smaller area to become affected by wind turbines. Furthermore, as discussed in Chapter 5 of this report, there are a number of design and siting factors that affect the perception of cumulative impacts. This includes not only size and number of turbines and windfarms in an area but also the juxtaposition of different layouts including turbine size, positioning and distribution.

The descriptions assume conditions of good visibility covering the 30-35km range that visibility studies and visual impact assessments of larger windfarms adopt as best practice. Clearly this exceeds the requirements for assessments of smaller turbines.

The descriptions are intended to be neutral in that they are purely descriptions of levels of development and the frequency or proximity at which wind turbines and windfarms may be seen. They do not attempt to define the levels of development as being good, bad, acceptable or unacceptable. This is a judgement that would be made when considering specific cases against the landscape type, its capacity for windfarm development, the development policy framework and other material considerations. In this case it is the determination of areas in which cumulative impact has reached the capacity of the landscape.

2.7 Capacity Assessment Method

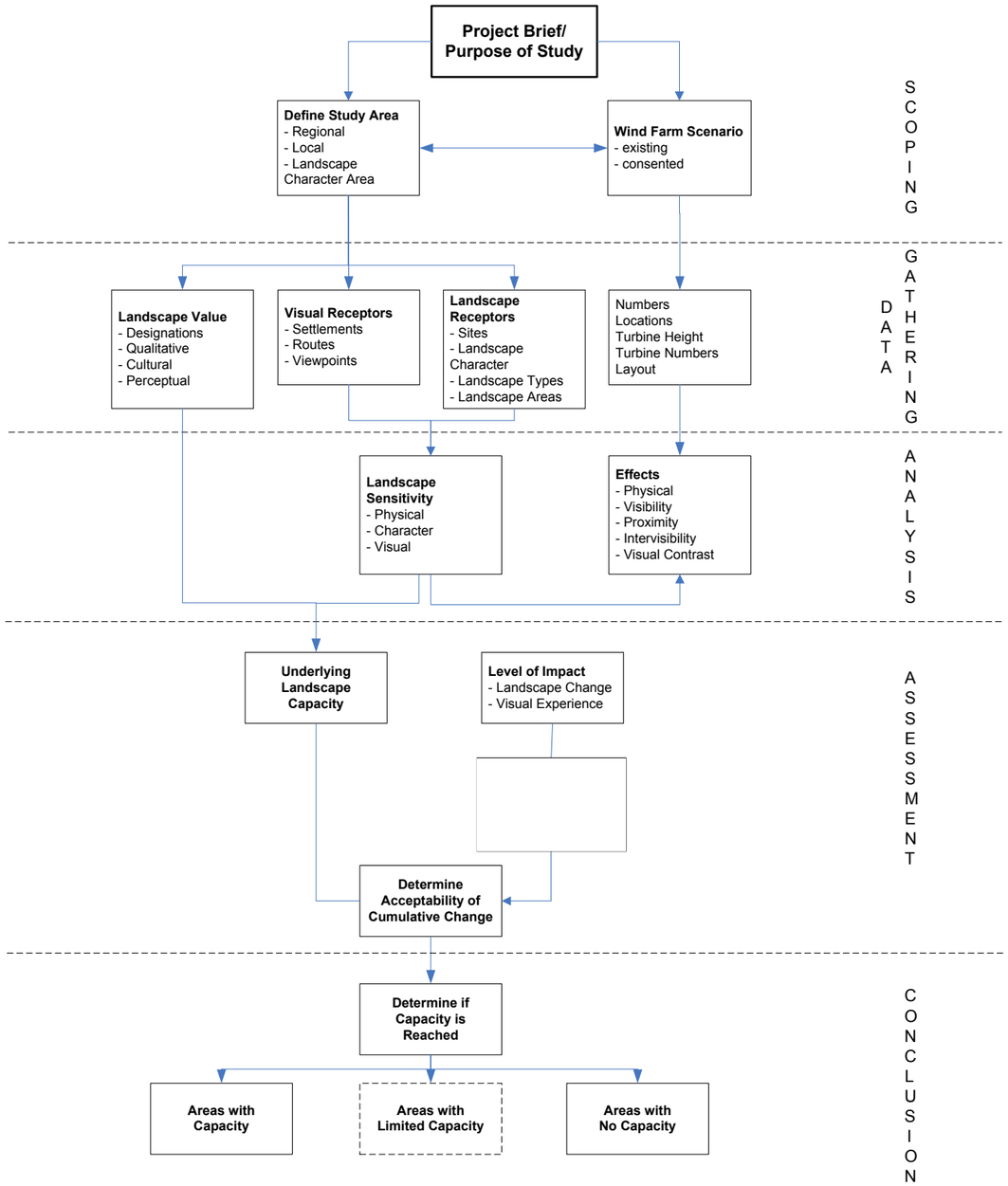
2.7.1 Assessment Process

The considerations discussed above have been taken into account in the staged methodology. This is illustrated by the flow diagram in Figure 1 overleaf. There are 5 stages in the process as shown in Table 2 below:

Table 2. Stages in Landscape Capacity Assessment

Scoping:	Define the purpose of the study, the study area and the wind energy development scenario that is to be assessed.
Data Gathering:	Gather information on receptors (visual and/or landscape); landscape designations and potential constraints; windfarms/ turbines (existing, proposed etc).
Analysis:	Determine landscape character sensitivity, visual sensitivity and landscape value. Determine visibility, direct and indirect landscape effects of the consented windfarms and turbines.
Assessment:	Determine landscape capacity from landscape sensitivity and value. Determine level of cumulative change caused by consented wind turbines, leading to a wind turbine landscape/ visual typology.
Conclusions:	Determine significance and/ or acceptability of existing and future potential cumulative change to the landscape and visual environment.

Figure 1. Cumulative Impact and Landscape Capacity Methodology Flowchart



This is a flexible framework which can be adapted to include the whole study area or focus on subdivisions of landscape, windfarm groupings or development scenarios as required. In this case local landscape character types have been considered, then building up to a picture of the whole of Orkney.

The assessment for Orkney includes:

1) Assessment of landscape capacity, cumulative change and acceptable limits of cumulative development in:

   - Landscape character types and area in Orkney;
   - The individual islands of the Orkney archipelago;
   - Orkney as a whole.

The cumulative development in each case is expressed via the wind turbine landscape/ visual typologies described in Table 2.2.

The cumulative and capacity assessment for onshore wind energy in Orkney considers:

1) Current wind turbine landscape typology resulting from operating and consented wind turbines, where there is a high degree of certainty in the cumulative assessment scenario.

2) The limits of acceptable cumulative change expressed in terms of the wind turbine landscape typologies (e.g. acceptable level of development in an area might be judged as no more than a *Landscape with Occasional Windfarms*). This is based on a judgement considering landscape capacity but also including policy considerations, emerging guidance on wind turbine development and strategic landscape considerations in Orkney.

3) The effects of consented wind turbines.

Further comment is made on the extent to which the current and proposed type and pattern of development (e.g. turbine size, windfarm size and separation between developments) affects the cumulative impacts and, if appropriate, how the area should be developed in order to keep within an acceptable cumulative change.

This information is used to determine where existing development has reached or come close to reaching landscape capacity and further development should be limited. On a more strategic level it identifies areas where development should be limited to provide separation between concentrations of wind turbine development. It also allows the identification of areas where further development may be possible and, in these cases, what level of development would be acceptable.

The assessment is carried out on the basis of the structured methodology in line with SPP and Scottish Government web based guidance in combination with professional judgement, on the basis of a desk analysis of available information on the landscape, on wind turbine developments and through site visits.

The following sections detail the stages in determining landscape capacity.

2.7.2 Determining Landscape Character Sensitivity

The determination of landscape character sensitivity for a landscape character type involves a breakdown of the physical and perceptual characteristics that contribute to landscape character. Each criterion described below is evaluated in terms of **high, medium** or **low** for sensitivity to wind energy development. An overall assessment is derived from a composite of all the criteria. Whilst scale is often important, there is no consistent relative weighting for each criterion, as in each landscape type different criteria may to be critical to the ability to accommodate wind energy development.

Table 3. Determination of Landscape Character Sensitivity

Scale (primarily in character but also in geographical size of area)	Consideration of horizontal and vertical scale. Larger scale landscapes are generally considered more able to accommodate commercial wind turbines, although a smaller size of turbine may reduce impacts. A larger physical area would be able to accommodate more development depending on other aspects determining capacity.
Landform	The relationship between wind turbines and landform is complex and also dependent on scale. Generally simple landforms: flat, undulating or gently rolling, are considered less sensitive and complex landforms more sensitive, especially if smaller scale. Landforms of sufficient scale may provide opportunities for screening or backgrounding turbines, reducing their visual sensitivity.
Pattern	The pattern of landcover (woodland, field boundaries, crops, roads, settlements etc). Degree of strength, regularity, fragmentation. Minimal or simple landscape patterns are considered less sensitive to wind turbine development. Again the relationship to scale is important.
Development	The degree of built or infrastructure development will affect suitability. In general a greater level of development is more suitable, particularly large scale industrial and extractive industries, or potentially large scale agriculture. Areas with small scale residential development would potentially be more sensitive. Undeveloped areas with remote or wilderness characteristics would also be more sensitive.
Quality	This is a measure of the condition and integrity of the landscape fabric and character. A landscape in good condition with a high degree of integrity is more likely to be sensitive to development. A landscape of poor quality may represent an opportunity to compensate for impacts.
Elements and Features	The elements that make up a landscape, such as woodlands, fields, hedges, buildings and landforms create its pattern but add to its distinctive composition and character. Prominent or distinctive focal features such as steep hills, towers, lochs add further distinctiveness. The relationship of wind turbines to these affects overall sensitivity.
Context	The characteristics of surrounding landscape areas provide a context that affects perception of a landscape and may affect how wind turbine developments are perceived. Landscapes acting as a backdrop or foreground to other areas are particularly sensitive.
OVERALL RATING	**High/ Medium/ Low**

The following definitions apply to the thresholds of low, medium and high landscape character sensitivity:

Low Sensitivity: A landscape type or area with key characteristics that would be capable of successfully accommodating or co-existing with wind energy development of all or most scales.

Medium Sensitivity: A landscape type or area with some key characteristics that would be capable of successfully accommodating or co-existing with wind energy development but also some characteristics that would be adversely affected and where scale of development may be a limiting factor.

High Sensitivity: A landscape type or area in which most or all key characteristics would be adversely affected by wind energy development and is not capable of successfully accommodating this type of change.

2.7.3 Determining Visual Sensitivity

The visual sensitivity of a landscape area is determined by who is likely to see it, (types and numbers of receptors) and how visible in general the area is. The assessment is made in relation to the visibility of tall structures.

2.7.4 Visibility Analysis

A systematic analysis of the relative visibility of areas of Orkney has been undertaken. Three sets of visual receptors were determined as follows, and these are identified in Section 4:

- Residential Receptors;
- Transport Routes;
- Viewpoints.

Each of the receptor types and locations is representative of locations frequented by people in Orkney. The visibility analysis included each set of receptors, and generated visibility diagrams of different scenarios for different heights of objects in the landscape.

The analysis was carried out using a computer based technique in which the intervisibility between receptors and landforms, or objects of specific heights on the landforms, is determined. The more intervisibility, the greater the visual sensitivity is likely to be. In the case of linear receptors (routes) these are broken up into units of the same length such that they represent different lengths exposed to views. No value judgement has been made as to relative sensitivity of receptors.

The extent of the visibility assessment is limited to a 15km radius from the receptors. In our experience, this is the distance within which the great majority of significant impacts from

wind farms are likely to occur. Whilst it is recognised that impacts occur beyond this distance (up to 35km and beyond as recognised by EIA best practice) the results are considered to adequately distinguish between locations of potentially greater or lesser sensitivity.

Each receptor type was assessed at five different heights above ground level in order to distinguish between the potential visibility of windfarm infrastructure and turbines of differing height:

- 20m representing the maximum height of small domestic turbines;
- 30m representing the blade tip height of typical domestic and farm scale turbines;
- 50m representing the blade tip height of many larger farm and industrial schemes;
- 80m representing the blade tip height of smaller windfarm schemes and community schemes;
- 125m representing blade tip height of typical commercial turbines currently in use.

A receptor height of 2m was assumed.

Results of the visibility analysis are illustrated in Figures 4.2a-e to 4.4a-e. The colours show the differences in visual sensitivity across Orkney. Red colours indicate areas that are most visible from the greatest numbers of receptors, grading through orange, yellow and green to blue areas that are seen by fewest receptors and uncoloured areas where objects of that height would not be seen at all from receptors.

The three key criteria which determine visual sensitivity are listed in Table 4 below. Each is rated in terms of high, medium or low and a composite rating derived based on professional judgement. The following definitions apply to the thresholds of low, medium and high visual sensitivity:

Low Visual Sensitivity: A landscape type or area which due to its location and characteristics has limited internal and/or external visibility and where wind energy developments would not be visible to many sensitive receptors.

Medium Visual Sensitivity: A landscape type or area which due to its location and characteristics has a moderate degree of internal and/or external visibility and where wind energy developments would be potentially visible to a wide range of receptors, some of which are sensitive.

High Visual Sensitivity: A landscape type or area which due to its location and characteristics has extensive internal and external visibility and where wind energy developments would be potentially visible to a wide range and number of sensitive receptors.

Table 4. Determination of Visual Sensitivity

Visual Sensitivity Criteria	Factors affecting level of sensitivity
Receptors	A greater number of potential receptors including higher population densities, visitor attractions or the presence of busy transport routes will lead to a higher visual sensitivity. The sensitivity and expectations of the receptors is also a contributory factor.
Internal Visibility	Views within a landscape area may be open or restricted by landform, vegetation or buildings. The greater the degree of openness and intervisibility the greater the sensitivity.
External Visibility	A landscape area that is visible from surrounding areas by virtue of its prominence or being overlooked is more visually sensitive than an area that is seldom seen.
OVERALL RATING	**High/ Medium/ Low**

The combination of landscape character and visual sensitivities leads to an overall assessment of landscape sensitivity for an area. Whilst landscape character is likely to carry more weight in determining sensitivity, no consistent weighting is given to either factor as it is likely that different landscapes will express them to varying extents depending on their unique characteristics. Professional judgement is used in the case of each landscape type.

2.7.5 Determining Landscape Value

Landscape value reflects the value that society and individuals put on a landscape. This can be officially recognised by some form of local or national designation, or simply by its value to a 'community of interest' (this could be for example a local population, recreational users or conservation interest).

Other characteristics affecting value of a landscape include its historic and cultural associations, particularly if expressed by surviving features and patterns in the landscape. Finally there are more intangible characteristics generally valued by society, such as tranquillity remoteness and wilderness.

The key criteria which determine value are listed in Table 5 below. Each is rated in terms of high, medium or low and a composite rating derived based on professional judgement. The following definitions apply to the thresholds of low, medium and high landscape value:

Low Landscape Value: A landscape type or area which has no landscape designation; little apparent value to communities; no or few cultural heritage designations or associations and has no distinctive or unusual perceptual values.

Medium Landscape Value: A landscape type or area which has at least in part local landscape or landscape related designations; value to local

communities; some cultural heritage designations or associations and has some distinctive perceptual values.

High Landscape Value: A landscape type or area, all or much of which is covered by national landscape or landscape related designations; has value to local and wider communities; widely recognised cultural heritage designations or associations and has clearly distinctive and/or unusual perceptual values.

Table 5. Determination of Landscape Value

Landscape Value Criteria	Factors contributing to value
Designations	International, national, regional or local designations relating to landscape in particular, although ecological designations also contribute to the landscape value of an area.
Community value	An undesignated area may be particularly valued by a community of interest: local, or activity-based.
Cultural value	Valued landscapes will have historic associations, be rich in historic features and buildings and/or have literary or artistic associations.
Perceptual	Tranquillity, remoteness or wilderness are valued characteristics, whereas landscapes that are highly modified, developed and populated would have low value in this respect. Landscapes regarded as particularly scenic would also be more sensitive.
OVERALL RATING	**High/ Medium/ Low**

2.7.6 Determining Landscape Capacity

The final assessment of capacity combines sensitivity and value and is expressed as **High, Medium** or **Low**. The following definitions broadly define the relationship between landscape sensitivity/ value and capacity:

Low Capacity: A landscape that is both sensitive to wind turbine development and has a high value, and where only a slight level of change can be accommodated without significantly affecting any of the key defining criteria.

Medium Capacity: A landscape that has some sensitivity to wind turbine development and has some aspects of value, and where a moderate level of change can be accommodated which may significantly affect some of the defining criteria.

High Capacity: A landscape that has low sensitivity to wind turbine development and has low value, and can accommodate substantial change that significantly affects many of the key defining criteria.

Broadly speaking there is an inverse relationship between capacity and landscape sensitivity and value. Nevertheless it is not a simple relationship and we have not employed the use of a matrix in this study: a balance of judgement is made in each case as landscape value may be a more important factor than sensitivity in some cases; and vice versa in others.

It should be noted that in landscapes where there is existing wind turbine development the residual capacity for turbines may be reduced. This is because the landscape would be approaching the maximum level of change that it can acceptably accommodate.

2.8 Determining Acceptability of Change

The final stage involves bringing together the cumulative impact assessment and the landscape capacity assessment in a reasoned judgement of the effects of windfarm development on the Orkney landscape. As explained above, the likely acceptability of a proposed level of development may be determined by considering against the underlying capacity of the landscape. This should also be considered against policy criteria and objectives.

2.9 Scope of Assessment

The scope of the assessment can be varied according to the extent of the study area and the purpose of the study. It can also vary according to the depth and detail required to assess impacts within the defined study area. In the case of a detailed study the method should build up to the wider study area from smaller units.

The current study focuses primarily on the local authority area of Orkney, although areas beyond the boundary are being considered in terms of the visual influence of nearby windfarms and neighbouring contiguous landscape types. Nevertheless the results of the study will be discussed in terms of Orkney and its landscapes.

Wind Energy Development Types

The study considers all sizes of turbines and developments operating, consented or proposed, as well as potential future scenarios where appropriate. However the capacity assessment and guidance for smaller turbines (under 20m to blade tip) is limited to localised generic siting and design considerations. The smallest turbines are not considered to have the same qualities of scale, prominence and widespread visibility that lead to the wider cumulative impacts that characterise larger turbines.

APPENDIX 3: GENERIC LANDSCAPE CAPACITY ASSESSMENT

LCT ORK 1: HOLMS

Landscape Character Sensitivity: High

Visual Sensitivity: High

Landscape Value: Medium

Description

Holms are distinctive features of the Orkney seascape; their isolated, undeveloped character in contrast with many of the more settled farming landscapes of the larger islands nearby. *Holms* occur throughout the archipelago with the exception of the northern and western extremes. Dome shaped and less than 2km in length, the islands are unvegetated except for rough grassland and usually have no buildings except for the occasional lighthouse or croft, often ruined. The most developed of this island type are found just to the north of Burray where they form part of the road link between East Mainland and South Ronaldsay, and include the main A961.

Generic Capacity for Wind Development

The small scale, simple character, integrity and high visual sensitivity results in no capacity for wind development. Even small sized turbines of 20m could be quite dominant features on these islands.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	No Capacity	- - -	- - -
20-30m (medium)	No Capacity	- - -	- - -
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Proposed Wind Turbine Landscape Type(s): ***Landscape with No Wind Turbines***

Guidance

Exceptionally it may be appropriate to site small sized turbines alongside existing built developments, for example maritime navigational facilities, making the developments appear rational. Turbines should be located toward the coast to take advantage of back clothing from the island landmass where possible, rather than being located on the more prominent high points. Development on unpopulated and undeveloped islands is to be avoided.

Landscape Character Type Sensitivity Assessment

Holms

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Small scale island landscapes: High Sensitivity
Landform	Simple domed landform with wave cut platforms and low cliffs: Low - Medium Sensitivity
Pattern	Simple pattern of pasture with some heath: Low Sensitivity
Development	Undevelopmed character, some ruined crofts, wartime structures, maritime structures: Medium - High Sensitivity
Quality	Absence of development, landscape has integrity - high quality landscape: High Sensitivity
Elements and Features	Grass and heath, occasional structures such as crofts, cairns, lighthouses: Medium - High Sensitivity
Context	Important components of the wider Orkney archipelago, focal points: High Sensitivity
OVERALL RATING	**High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Uninhabited, but some sensitive receptors e.g. passing ferries: Medium Sensitivity
Internal Visibility	Unrestricted views across small island landscapes: High Sensitivity
External Visibility	Islands are focal points when viewed externally: High Sensitivity
OVERALL RATING	**High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some with wildlife designations SPA, SSSI: Low - Medium Sensitivity
Community value	No resident community, few other communities identified with islands: Low Sensitivity
Cultural value	Some islands have SAM and listed buildings, some wartime structures: Medium Sensitivity
Perceptual	Isolated often quite remote small island landscapes: High Sensitivity
Rarity	Small landscape areas with distinct character: Medium - High Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 2: WHALEBACK ISLAND LANDSCAPES

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium - High

Landscape Value: Medium - High

Description

Whaleback Island Landscapes are low lying islands, with similar characteristics to *Holms* but larger in size and usually more developed. Islands of this character type occur to the south and west of the archipelago, distributed to the north east of Hoy and close to Rousay. Islands are up to 5km in length, often elongated, with a smooth domed profile which rises to no more than 50m.

The islands comprise a simple landscape vegetated with improved pasture, rough grassland and heath. Some of the pastures are enclosed with walls and wire fences. Islands are mostly populated with scattered farms and crofts, minor roads and tracks. The most developed of the islands is South Walls, connected to Hoy by a narrow tombolo.

The featureless, open landscape, is visually exposed from the sea and neighbouring islands. Even small scale houses and farm buildings are quite prominent, especially when skylined on the more elevated areas.

Generic Capacity for Wind Development

Whaleback Island Landscapes have simple landforms and patterns of land use. However capacity for wind development is constrained by the small scale of the island landscapes, both in terms of the physical size of the islands, and the small scale of the farmed landscape. 'Whaleback' islands are also visually sensitive, often in view from neighbouring islands or ferry routes, their undeveloped character providing relief from the more settled landscapes of neighbouring larger islands. Wind developments up to 30m in height can be accommodated where associated with houses or other development, however turbines of greater height would tend to dominate the small island landscapes.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 3	1 - 2km
20-30m (medium)	Low	1	2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to the minimum spacing at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape With No Wind Turbines / Landscape with Occasional Wind Turbines*

Guidance

- Turbines up to 30m in height to be associated with farms, houses or other buildings. Small groups of turbines < 20m would be acceptable, aligned with field boundaries or roads, and of the same type and size.
- Turbines between 20 and 30m to be single turbine developments only. Turbines at the upper end of this scale should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Turbines situated in the high points towards the centre of the island will be prominent. Therefore turbines > 20m should be situated towards the periphery of the islands where possible to take advantage of backclothing from the island landmass. The same applies to turbines < 20m however their prominence on island high points will be much less.

Landscape Character Type Sensitivity Assessment

Whaleback Island Landscape

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Small to medium, low lying island, limited extent: Medium - High Sensitivity
Landform	Simple, gently domed, smooth landform, shallow sloping pastures running to undramatic coastline: Low - Medium Sensitivity
Pattern	A generally uniform arrangement of roads/track, fields, and development, but lack of features, weak field boundaries do not create a strong pattern: Low - Medium
Development	Low density small scale development, small network of minor roads, tracks and scattered farm buildings, sometime derelict: Low - Medium Sensitivity
Quality	Managed farmland but abandoned crofts and fields are a feature of the landscape: Low - Medium Sensitivity
Elements and Features	Few distinct features: open fields, minor roads and tracks, farm buildings, weak field boundaries. Buildings can appear prominent on island highpoints: Low - Medium Sensitivity
Context	Landscapes are generally small islands which are important components of the Orkney archipelago, with often extensive panoramic outward views of the wider Orkney seascape: High Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Sparse resident population, few transient receptors travelling through, but historic and cultural attractions attract some visitors: Low - Medium Sensitivity
Internal Visibility	Few features to interrupt views internally, views across the entire landscape possible from central areas: Medium - High Sensitivity
External Visibility	Visually exposed locations which are overlooked from neighbouring islands or passing ferries. Low lying nature enhances prominence of tall features: High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some islands in National Scenic Area, WHS Potentially Sensitive Area. Some wildlife designations: Medium Sensitivity
Community value	Generally few outward indicators of community value, but strong island sense of identity likely: High Sensitivity
Cultural value	Island locations often contain localised sites of historic or cultural value: Medium Sensitivity
Perceptual	Small size, low lying nature, minimal development, extensive outward views promote a sense of exposure and tranquillity: Medium Sensitivity
Rarity	Common within Orkney, but important characterising feature: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

The Whaleback Island Landscape of eastern Burray. These islands are small scale, visually exposed, and unsuited to turbines greater than 30m.

LCT ORK 3: RIDGELINE ISLAND LANDSCAPES

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium - High

Landscape Value: Medium

Description

Ridgeline Island Landscapes occur only on the islands of Stronsay, Westray, Papa Westray and Shapinsay. This landscape type is elongated and usually narrow, with a distinct low ridge running along its length which typically is no more than 50m AOD.

Regularly shaped, medium size fields often with a strong pattern, under pasture or arable production, fall gently away from either side of the ridge to an undramatic coastline of shingle beaches or wave cut platforms. Houses and small farms occur regularly throughout the landscape type. Roads follow a rectilinear pattern, with main road routes running along the ridge, side roads and tracks running perpendicular towards the sea.

The elevated ridges offer good views, often in two directions, however this visual exposure makes the ridges of this landscape type particularly sensitive to developments.

Generic Capacity for Wind Development

Ridgeline Island Landscapes are medium scale, settled and agriculturally productive landscapes. Landscapes of this scale and type do not support large scale wind developments, however small and small/medium sized turbines, up to 30m, can be readily accommodated with the scattered farming and residential developments. The landscape is of a sufficient scale to potentially accommodate single turbine developments up to 80m when carefully sited in a larger area of this LCT and well separated from similar sized turbines, but subject to careful siting and assessment. Small groups of 50m+ turbines or turbines > 80m would dominate any area of this landscape character type.

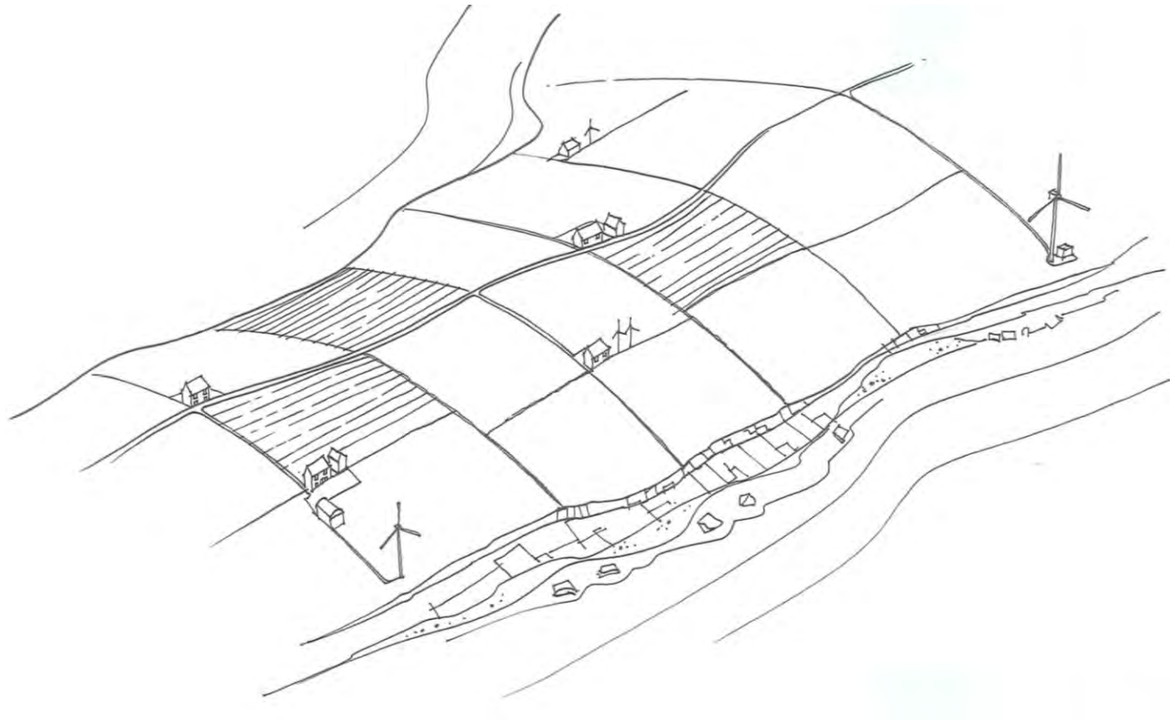
Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 3	1 - 2km
20-30m (medium)	Medium	1 - 3	2 - 3km
30-50m (medium/large)	Low	1	3km
50-80m (large)	Low	1	5km
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to the minimum spacing at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Occasional Wind Turbines*

Guidance

- Turbines up to 30m in height to be associated with farms, houses or other buildings. Small groups of turbines up to 30m would be acceptable, of the same height and type, typically aligned to roads and field boundaries.
- Turbines approaching 30m and above should be sited so as not to dominate small houses and crofts occurring within this landscape type.
- Turbines greater than 20m should be located away from the ridgeline where possible so as not to appear dominant.
- Occasional single turbines between 30 and 80m should be separated from houses and other developments. Larger turbines will inevitably break the skyline, but nevertheless should be located towards the coast at lower elevations. Turbines of this size should respect sensitive coastal features and will require careful site specific assessment.
- Turbines >50m should not be situated in the smallest scale example of the landscape character type found on Papa Westray.



Within a Ridgeline Island Landscape larger turbines are more suited to coastal locations rather than ridge tops where they would most likely be very dominant features.

Landscape Character Type Sensitivity Assessment

Ridgeline Island Landscapes

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium scale, but sometimes small, low lying: Medium - High Sensitivity
Landform	Simple topography of central ridge with sloping fields running to an undramatic coastline: Low - Medium Sensitivity
Pattern	An often uniform arrangement of fields, roads and tracks, with frequent farm buildings creating a strong pattern: Medium Sensitivity
Development	Frequent small scale agricultural development including farm houses and farm buildings, connected by a network of minor roads and tracks: Medium Sensitivity
Quality	Farmland managed mainly for pasture and some arable, some abandoned fields and crofts. Field boundaries often good quality dry stone walls adding character: Medium Sensitivity
Elements and Features	Few prominent natural or manmade features, key elements are open fields, minor roads and tracks, farm buildings, field boundaries: Low - Medium Sensitivity
Context	Landscapes are generally important components of small to medium size islands, with often extensive panoramic outward views of the wider Orkney seascape: Medium - High Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Low density resident population, some transient receptors travelling through, but historic and cultural sites attract some visitors: Medium Sensitivity
Internal Visibility	Few features to interrupt views internally, views across the entire landscape possible from central areas, but less so from margins: Medium Sensitivity
External Visibility	Visually exposed locations which are overlooked from neighbouring islands or passing ferries. Low lying nature enhances prominence of tall features: High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some local wildlife designations: Low - Medium Sensitivity
Community value	Some island landscapes with strong identity, less evidence of community value in other areas: Medium Sensitivity
Cultural value	Localised historic and cultural sites: Medium Sensitivity
Perceptual	Low lying with extensive views, relatively little development creates a tranquil rural setting: Medium Sensitivity
Rarity	This and similar LCTs not uncommon in Orkney: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 4: LOW ISLAND PASTURES

Landscape Character Sensitivity: Low - Medium

Visual Sensitivity: Medium

Landscape Value: Medium

Description

Low Island Pastures occur in the lower lying island landscapes of East Mainland, South Ronaldsay, Flotta and all of the Outer North Isles with the exception of Papa Westray. Sanday includes the most extensive area of this landscape character type. *Low Island Pastures* are frequently found in coastal locations often on promontories and headlands.

The landform is flat and low lying, with the occasional low hill or mound. Water bodies are sometimes present, occasionally giving the perception of a flooded landscape with the sea held at bay only by encircling low dunes sometimes associated with this landscape character type.

The nature of the landscape means that development such as houses, power lines and turbines are prominent. The landscape is primarily pastoral, grazed by sheep and cattle, with medium sized rectilinear fields separated typically by wire fences. Farm buildings and houses occur regularly within the landscape but are usually well separated, connected by networks of minor roads and tracks.

Generic Capacity for Wind Development

Low Island Pastures are settled, productive landscapes. Sensitivity to wind development arises because of the open, flat nature of the landscape into which vertical developments are prominent. Large turbine developments could also appear out of scale with the frequent small scale farm buildings and houses.

Wind developments up to 30m in height would appear rational in this productive landscape where associated with farm buildings and houses. Occasional turbines of 30 to 50m or 50 to 80m could be accommodated where greater separation can be achieved between the turbines and houses.

No capacity exists for very large turbines of 80 to 125m, which would be out of scale with the landscape.

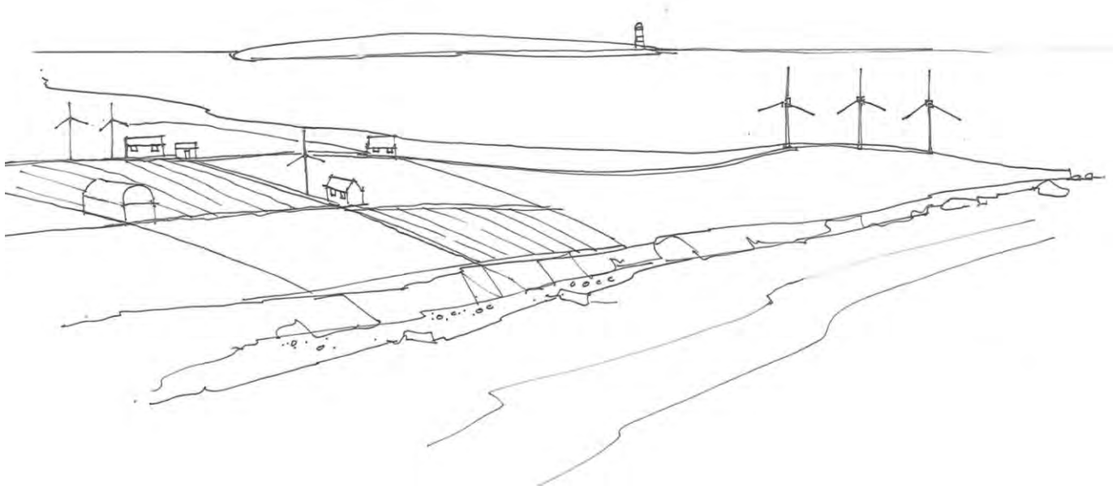
Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 4	0.5 - 2km
20-30m (medium)	Medium	1 - 3	1 - 2km
30-50m (medium/large)	Low	1 - 3	2 - 5km
50-80m (large)	Low	1 - 3	5 - 10km
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to the minimum spacing at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Wind Turbines / Landscape with Occasional Wind Turbines*

Guidance

- Turbines up to 30m in height to be associated with farms, houses or other buildings. Groups of turbines should be of the same turbine type and size, and should be arranged in straight lines or rectangular patterns following field boundaries or roads.
- Turbine groups close to 30m may start to appear out of scale with smaller buildings, depending on the size of the building and how they are viewed, therefore should be sited with larger farm developments.
- Single or small groups of turbines between 50 and 80m to be sited in less developed areas away from houses and farms. This is likely to be at the coastal periphery of the landscape character areas. However turbines in coastal locations should respect sensitive coastal features and will require careful site specific assessment.
- Multiple small groups of 50m+ turbines are likely to dominate the landscape. More than a single development at this scale within each LCA would risk the creation of a *Wind Turbine Landscape*.



Larger turbines are best accommodated in the Low Island Pastures landscape type at the coastal periphery, distant from enclosed farmland and buildings, where not affecting sensitive natural or manmade coastal features.

The Low Island Pastures of north west Sanday are flat and sparsely developed, in which turbines >30m would tend to be highly prominent.

Landscape Character Type Sensitivity Assessment

Low Island Pastures

Landscape Character Sensitivity	**Criteria /Sensitivity Levels**
Scale	Small to medium scale, low lying: Medium - High Sensitivity
Landform	Simple generally flat landscape with some low hills, coastal: Low - Medium Sensitivity
Pattern	Uncomplex predominantly agricultural settled landscape of regular fields, some coastal links: Medium Sensitivity
Development	Small scale agricultural development with roads and tracks: Medium Sensitivity
Quality	Maintained agricultural landscape: Medium Sensitivity
Elements and Features	Mainly fields of pasture, with farms and farm building, a road and track network, fenced and walled field boundaries: Low Sensitivity
Context	Some sensitivity resulting from coastal context: Low - Medium Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

Visual Sensitivity	**Criteria/ Sensitivity Levels**
Receptors	Areas contain resident farming community and small settlements: Medium Sensitivity
Internal Visibility	Few features to interrupt views across largely flat landscape: Medium - High Sensitivity
External Visibility	Visually exposed coastal locations, but low lying: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	**Criteria/ Sensitivity Levels**
Designations	Some SSSI and local wildlife designations: Low - Medium Sensitivity
Community value	Setting of resident community, some visitor attractions: Medium Sensitivity
Cultural value	Some SAM noted in the areas: Medium Sensitivity
Perceptual	Settled coastal landscapes, with open character due to exposed coastal locations: Medium Sensitivity
Rarity	Landscape frequently found in the northern islands and East Mainland: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 5: UNDULATING ISLAND PASTURES

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium

Landscape Value: Medium

Description

Undulating Island Pastures occur in only three locations: on Deerness, East Mainland; to the south of Westray; and to the south west of Sanday. The character type is found in coastal locations, and varies in shape from the elongated spur of land on Sanday to the more substantial, squarer, landmass of Deerness. Topography is undulating, with low, gently sloping hills and depressions. Hills are no more than 100m AOD in elevation.

This is an agricultural landscape type, grazed by cattle and sheep, with some arable production. Farms, houses and other buildings are spread throughout the landscape. Some settlement is nucleated into small villages and hamlets.

Minor roads and tracks pass through the landscape, usually in straight lines rather than following contours. The hill summits are sometimes the location of transmission masts. The LCT is often more developed than the similarly pastoral *Ridgeline Island Landscapes* and *Low Island Pastures*.

The high points often afford good views over the open landscape and to the nearby coastline and sea, while more enclosed pockets exist within the landscape due to the undulating topography and low hills.

Generic Capacity for Wind Development

The productive agricultural landscape with scattered settlement has capacity for small to medium scale developments up to 30m in height. The undulating nature of the landscape provides a degree of enclosure which helps to reduce intervisibility between developments, and allows smaller turbines to be backclothed. There are opportunities for larger turbines up to 80m away from farm buildings and houses. Groupings of 50m+ turbines could be dominant within this landscape type, but capacity for this scale of development does exist in some of the more remote locations.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 4	0.5 - 2km
20-30m (medium)	Medium	1 - 3	1 - 2km
30-50m (medium/large)	Low	1 - 3	2 - 5km
50-80m (large)	Low	1 - 3	5 - 10km
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to the minimum spacing at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Wind Turbines*

Guidance

- Turbines up to 30m in height to be associated with farms, houses or other buildings. Groups of turbines should be of the same turbine type and size. Small groups should generally be aligned to field boundaries and roads but also aligned to landforms in the higher areas with stronger topography.
- Turbines between 20 and 30m could dominate small dwellings and therefore should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Opportunities to backcloth turbines with low hills and undulations should be realised where possible.
- Single or small groups of turbines between 50 and 80m to be sited in less developed areas away from houses and farms. This could be at the coastal periphery of the landscape character areas or some of the more sparsely developed upland areas. Turbines in coastal locations should respect sensitive coastal features and will require careful site specific assessment.
- Developments of multiple 50m+ turbines are likely to dominate the landscape. More than one multi-turbine development of this scale within each LCAs would risk the creation of a *Wind Turbine Landscape.* With current levels of development this landscape type is currently close to or at capacity.

Undulating Island Pastures of Deerness have frequent farm developments, suited to smaller scale wind energy developments. Larger turbines are more suited to the coastal periphery than the interior, subject to respect for coastal sensitivities.

Landscape Character Type Sensitivity Assessment

Undulating Island Pasture

Landscape Character Sensitivity	**Criteria /Sensitivity Levels**
Scale	Small to medium, some smaller areas due to enclosure by landform: Medium - High Sensitivity
Landform	Undulating, frequent low hills but quite simple, coastal: Medium Sensitivity
Pattern	Agricultural pattern of predominantly pasture fields, some strong field boundary patterns, coastal fringe: Medium Sensitivity
Development	Small agricultural farms and farmsteads, roads and tracks, quite frequent: Medium Sensitivity
Quality	A maintained agricultural landscape: Medium Sensitivity
Elements and Features	Mainly fields of pasture, with farms and farm building, a road and track network, fenced and walled field boundaries: Low Sensitivity
Context	Some sensitivity resulting from exposed coastal context: Low - Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	**Criteria/ Sensitivity Levels**
Receptors	Resident receptors, visitors to sites of interest: Medium Sensitivity
Internal Visibility	Long distance views from high points but views restricted by landform in places: Medium Sensitivity
External Visibility	Exposed coastal locations promote external visibility: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	**Criteria/ Sensitivity Levels**
Designations	Some local wildlife designations: Low - Medium Sensitivity
Community value	Setting of resident community, some visitor attractions: Medium Sensitivity
Cultural value	Listed buildings throughout the landscape type: Low - Medium Sensitivity
Perceptual	Settled coastal landscape, unremarkable agricultural character: Medium Sensitivity
Rarity	Found only on two islands and Mainland, but similarity to other LCTs: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 6: COASTAL PLAIN

Landscape Character Sensitivity: Low - Medium

Visual Sensitivity: Medium

Landscape Value: Low - Medium

Description

The *Coastal Plain* landscape character type occurs in only one location, at Inganess Bay close to Kirkwall Airport. The character area is very small, comprising two flat areas of land which partly encompass Inganess Bay. The flat relief of the LCT just distinguishes it from the more inclined landform of the larger surrounding *Coastal Basin* landscape.

One farmstead and its irregularly shaped fields occupy the easterly area, while part of Kirkwall Airport occupies the area to the west. The two areas are separated by a small bay.

Generic Capacity for Wind Development

The capacity assessment is specific to the single character area of this LCT. Notwithstanding the practicalities associated with locating turbines close to the airport, the main sensitivity associated with this area is its visual exposure, with development viewed against the sea when seen from inland, including from the main A960, 1 – 2km south of the area, and from the airport itself.

Small to medium sized turbines, up to 30m, could be associated with the farm or other development. A larger single turbine, up to 50m, could be accommodated, however larger turbines, especially in groups, would tend to dominate the coast and the views of Inganess Bay.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 3	0.5 - 1km
20-30m (medium)	Low	1 - 2	1 - 2km
30-50m (medium/large)	Low	1	2km
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to approximate minimum at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Occasional Wind Turbines*

Guidance

- Turbines up to 30m in height to be associated with the farm or other buildings, small groups should be aligned to field boundaries, roads or tracks. Turbine groups to be of the same turbine type and style.
- A single medium/large turbine, from 30 to 50m, could be accommodated with adequate separation from buildings to avoid scale comparisons.

The Coastal Plain with Inganess Bay in the foreground.

Landscape Character Type Sensitivity Assessment

Coastal Plain

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium to small scale, low lying: Medium - High Sensitivity
Landform	Flat, low shore line: Low Sensitivity
Pattern	Open airport area on flat ground, with small to medium sized fields on sloping ground: Medium Sensitivity
Development	Some agricultural and airport development, larger scale: Low Sensitivity
Quality	Landscape managed for agriculture and aviation: Medium Sensitivity
Elements and Features	Airport infrastructure, fields, beaches and rocks: Low Sensitivity
Context	Area of coastal plain in an enclosed bay surrounded by hilly hinterland: Low Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Few residents, transient receptors along A road, from airport, recreational users of beach: Low - Medium Sensitivity
Internal Visibility	Clear views internally due to lack of features and topographic enclosure: High Sensitivity
External Visibility	Enclosed, therefore limited external visibility: Low Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	No designations: Low Sensitivity
Community value	Setting to some houses, recreational value of beach: Low - Medium Sensitivity
Cultural value	One listed building and SAM noted at periphery of area: Low Sensitivity
Perceptual	Unexceptional predominantly rural landscape with prominent airport development: Low Sensitivity
Rarity	Only one small area of its type within Orkney: Medium - High Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

LCT ORK 7: COASTAL BASIN

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium - High

Landscape Value: Medium

Description

Coastal Basin landscapes occur most frequently on Mainland and South Ronaldsay, but also on Rousay, Eday and Stronsay. They occur where flat or gently inclined land extends inland from the coast and is encircled by higher ground, forming a wide basin.

Coastal areas are low lying, sometimes containing small waterbodies or wetlands, but undulations and low hills are sometimes present. Inland areas are gently sloping, giving way to more elevated uplands to the rear.

Landscapes of this type are well settled and productive, with enclosed rectilinear fields under pasture and sometimes arable production. Farmsteads and farm buildings are frequent and often quite large, with houses sometimes clustered into small settlements. Road networks tend to be well developed, with A roads often running through areas of this character type, and therefore being sensitive to views from these key transport corridors.

Generic Capacity for Wind Development

The productive agricultural landscape with scattered settlement has good capacity for small to medium scale developments up to 30m in height, but developments will tend to be prominent on the basin floor, especially when seen from inland against views towards the sea or from the elevated flanks of the basin. Capacity exists for occasional larger turbines up to 50m, appearing rational in the landscape as electricity generation for the basin settlements, but turbines larger than this are likely to dominate this landscape character type. There are opportunities for reducing the impact of wind developments by back clothing against the usually hilly hinterland of this landscape character type.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	High	1 - 4	0.5 - 1km
20-30m (medium)	Medium	1 - 2	1 - 2km
30-50m (medium/large)	Low	1	2km
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

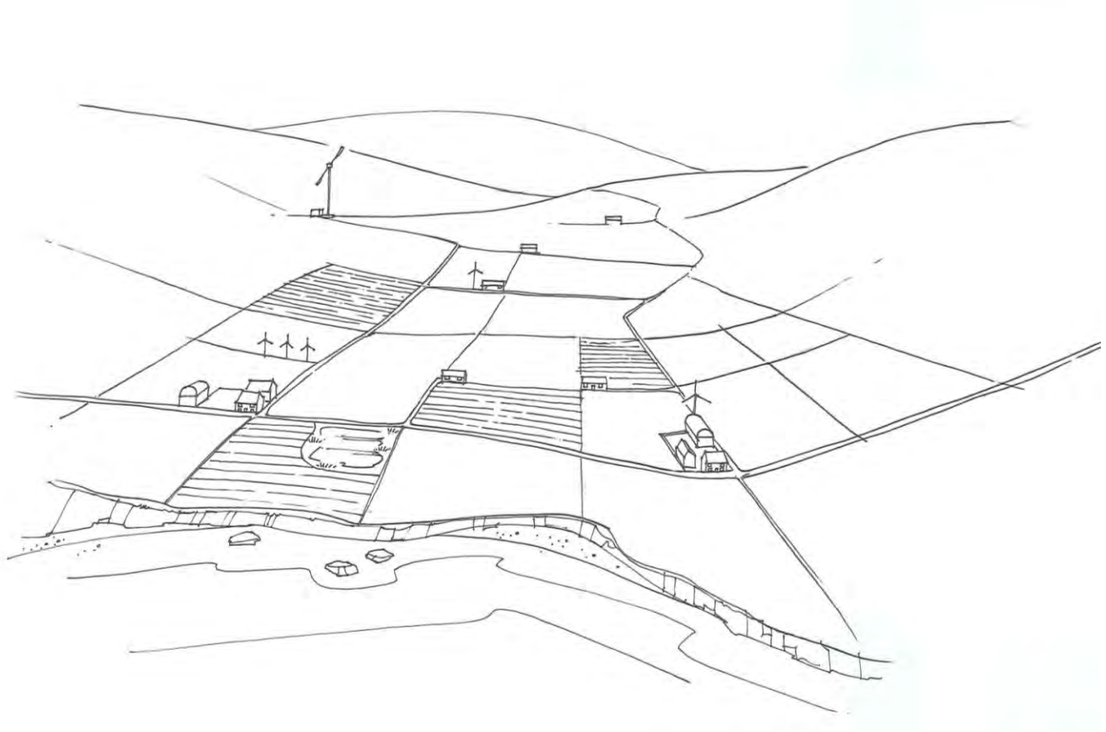
Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Windfarm Landscape Type(s): *Landscape With Wind Turbines*

Guidance

- Turbines up to 30m to be associated with farms, houses and other buildings. Small groups should be aligned to linear features such as field boundaries and roads. Turbine groups to be of the same turbine type and style.
- Turbines between 20 and 30m could dominate small dwellings and therefore should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Turbines approaching 30m and above are best located to the landward side of the character areas, where development is more sparse, and turbines would often be seen against a hilly island hinterland.
- Wind energy developments should be avoided along the coastline where they will be viewed against the sea from important road routes, settlements and visitor attractions.
- The open, basin like character of these areas has the potential for the inadvertent creation of *Wind Turbine Landscapes,* where multiple developments of different size turbines could be visible in many directions. This should be avoided by having regard for the recommended small group sizes and separation distances.

The distinct enclosed Coastal Basin landscape of north east Rousay, is sensitive to turbines over 50m.



The Loch Basin floor is only suited to smaller scale turbines, while larger turbines up to 50m should be located at the periphery of the area.

Landscape Character Type Sensitivity Assessment

Coastal Basins

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Mostly medium scale, but some small, for example South Ronaldsay. Low lying enclosed: Medium Sensitivity
Landform	Flat, low lying, gently sloping to the coast, enclosed by higher ground: Low Sensitivity
Pattern	Agricultural pattern of predominantly pasture with some arable, rectilinear fields, coastal fringe: Medium Sensitivity
Development	A settled landscape with frequent farms and farm buildings, roads and tracks: Medium Sensitivity
Quality	A farming landscape, generally well managed for agricultural production: Medium Sensitivity
Elements and Features	Regularly shaped fields, wire fences and stone wall field boundaries, frequent farm buildings, tracks and roads. Some water bodies in lower lying areas: Medium Sensitivity
Context	Generally low lying coastal landscapes backdropped by larger hills, focal point of views from higher ground: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	A settled landscape with resident receptors: Medium Sensitivity
Internal Visibility	Basin landscape with largely unrestricted internal visibility: High Sensitivity
External Visibility	Views from the sea and surrounding higher ground, but landform restricts visibility from inland areas: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Generally undesignated, some local nature conservation designations: Low - Medium Sensitivity
Community value	Value to resident community, but generally not recreational landscapes: Medium Sensitivity
Cultural value	Some listed buildings, Kitchener Memorial: Low - Medium Sensitivity
Perceptual	Unremarkable settled farming landscape but often attractive coastal location: Medium - High Sensitivity
Rarity	Moderately rarity, found in coastal locations of Mainland and South Ronaldsay in particular: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 8: INCLINED COASTAL PASTURES

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium

Landscape Value: Medium

Description

Inclined Coastal Pastures are widespread throughout Orkney, occurring on many of the major islands including East and West Mainland, Hoy, South Ronaldsay, Rousay, Eday and Stronsay. This landscape character type occurs on sloping coastal fringes, typically in a narrow strip between the coast and more elevated upland areas. These are farmed landscapes with medium sized rectilinear fields, usually oriented to the sea, separated by wire fences and more occasionally stone walls. Farmland is mainly improved pasture, and sometimes under arable production. As with the other pastoral landscapes found in Orkney, settlement is dispersed, but widespread, with a range of small crofts, houses and larger farms and farm buildings within the landscape. The coastal corridors often contain main roads, running parallel to the coast and skirting the uplands, with small networks of side roads and tracks connecting farms and houses. The elevated coastal locations often provide good views to the sea and wider Orkney archipelago, and sometimes contain prehistoric sites, brochs and coastal defences from the Second World War.

Generic Capacity for Wind Development

As a medium scale settled landscape, there is no capacity for the largest multi-turbine developments. However the productive agricultural character provides good capacity for smaller scale developments up to 30m. Turbines of this size are quite easily absorbed into the landscape due to the scattered settlement and associated infrastructure and by the back clothing provided by hills to the rear. Turbines of 30m and above become more prominent within the landscape, and less in proportion with the relatively small scale of the built development and field patterns. Capacity does exist for occasional small groups of turbines of 30 to 50m and single turbines from 50 to 80m when back clothed against higher landforms, however the developed nature of this landscape provides few opportunities for siting turbines away from houses and farmsteads.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	High	1 - 4	0.5 - 2km
20-30m (medium)	Medium	1 - 3	1 - 2km
30-50m (medium/large)	Low	1 - 2	2 - 4km
50-80m (large)	Low	1	5km
80-125m (very large)	No Capacity	- - -	- - -

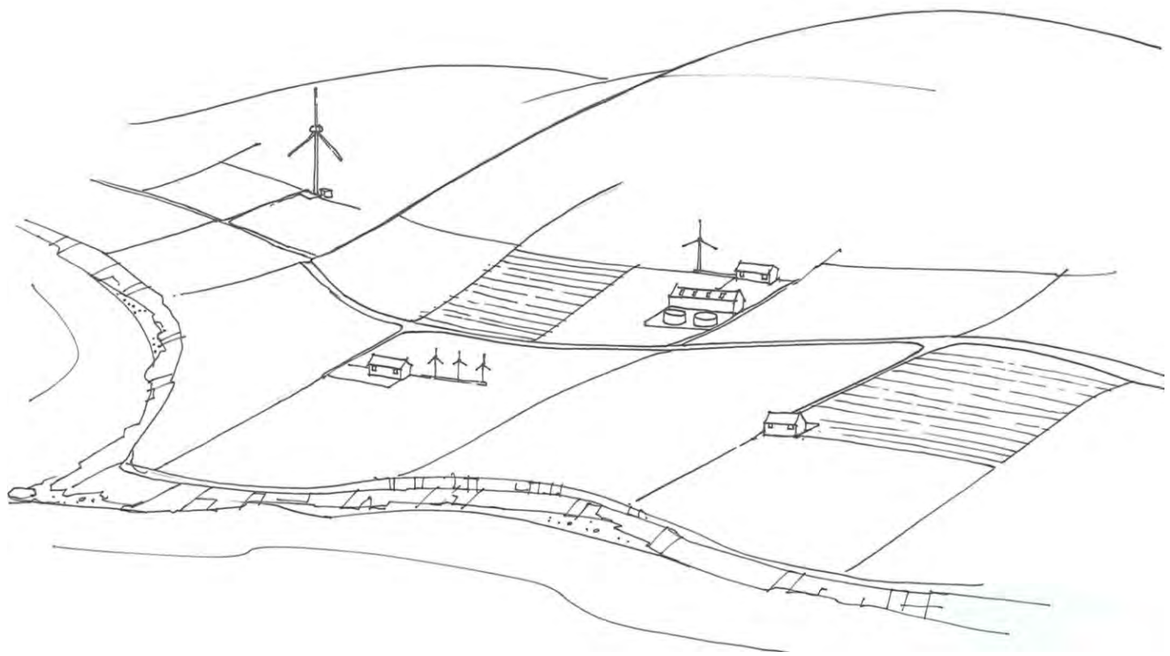
Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Wind Turbines*

Guidance

- Turbines up to 30m to be associated with farms, houses and other building. Small groups should be aligned to linear features such as field boundaries and roads. Turbine groups to be of the same turbine type and style.
- Turbines between 20 to 30m could dominate small dwellings and therefore should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Turbines between 30 and 80m to be sited carefully to take advantage of back clothing when viewed from other islands and key ferry routes, and sited away from houses and farmsteads.
- Turbines between 30 and 50m should be sited as single turbines or in pairs. Developments of turbines between 50 and 80m as single turbines only.

The Inclined Coastal Pastures of West Mainland seen below the Burgar Hill wind turbines.



Larger turbines are best located to the landward side of coastal roads. Turbines above 50m should be located away from developments and be in scale with uplands to the rear.

Landscape Character Type Sensitivity Assessment

Inclined Coastal Pastures

Landscape Character Sensitivity	**Criteria /Sensitivity Levels**
Scale	Medium scale with some smaller scale areas associated with settlements: Medium Sensitivity
Landform	Simple sloping landform, gently sloping from higher moorland hills towards an undramatic coastline: Low - Medium Sensitivity
Pattern	Rectilinear fields with field boundaries sloping towards the coast, farms and farm buildings scattered throughout the landscape: Medium Sensitivity
Development	Farmed landscape with small scale agricultural development, some extraction site. Derelict WW2 sites a feature of some locations: Medium - High Sensitivity
Quality	Farmland mainly managed for pasture, derelict buildings a feature of some parts of the landscape: Low - Medium Sensitivity
Elements and Features	Main features are unremarkable farm buildings, but some areas include derelict WW2 sites of some historic interest: Medium Sensitivity
Context	Forms part of the coastal landscape but backdropped by larger scale Moorland Hills: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	**Criteria/ Sensitivity Levels**
Receptors	Areas contain resident farming communities and small settlements: Medium Sensitivity
Internal Visibility	Sloping landform increases visibility. Few features to interrupt visibility: Medium - High Sensitivity
External Visibility	Areas often visible from the sea and other islands, but Moorland Hills inland restrict visibility from other directions and reduce visual impacts: Low - Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	**Criteria/ Sensitivity Levels**
Designations	Some areas fall within the National Scenic Area, WHS Potentially Sensitive Area: Medium Sensitivity
Community value	Setting to small settlements and farms: Medium Sensitivity
Cultural value	Sites contain sites with historic and cultural interest due to accessible coastal locations: Medium Sensitivity
Perceptual	Settled coastal landscape, unremarkable agricultural character: Medium Sensitivity
Rarity	Frequently found on Mainland, Hoy and some Northern Islands: Low - Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 9: COASTAL GRANITE PASTURES

Landscape Character Sensitivity: High

Visual Sensitivity: Medium - High

Landscape Value: High

Description

Coastal Granite Pastures is a small landscape character type occurring in only one location, encompassing the town of Stromness in West Mainland. This landscape character type is unique in Orkney for including a town and its setting, reflecting the characterful townscape of Stromness and its influence on the wider landscape.

The area includes one of the few granite outcroppings in Orkney. The landform rises quite steeply from the coast, reaching a height of 130m AOD, and has a roughness of character, featuring rocky outcrops which contrast with the more gentle undulations of the landforms associated with the sandstone geology occurring throughout Orkney.

Stromness is a small town of intimate character, with buildings ascending from the seafront up a low hill. The town is important as a gateway for sea travellers, with ferry connections to Hoy and to Scrabster on mainland Scotland. Beyond the town are scattered residences and farms, connected by a network of minor roads. Fields are under pasture and arable production, with granite stone walls a particular feature of the agricultural landscape.

Generic Capacity for Wind Development

There are many constraints to wind development within this area: the intimate character of the townscape; the small scale of the farming hinterland; the presence of more complex landforms and geological features unusual to Orkney; its location at the heart of the National Scenic Area; and the visual sensitivity of the landscape/townscape. Capacity exists for only occasional wind energy developments of no more than 30m in height, appropriately associated with the rural developments or harbour/ industrial area beyond the immediate environs of the town.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 3	1 - 2km
20-30m (medium)	Low	1	2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape With No Wind Turbines*

Guidance

- Occasional small scale turbines to be associated with farms, houses or local industry. Groups of small turbines (<20m) aligned with linear features such as roads and field boundaries. Turbine groups to be of the same turbine type and style.
- Maintenance of separation distances means there is capacity for only a single turbine between 20 and 30m within the character area.
- Turbines not to be positioned so as to break the skyline above Stromness.
- Turbines should be sited with consideration to sensitive headlands and coastal features, and respecting the importance of Stromness as a gateway to West Mainland and the NSA.

The Coastal Granite Pastures above Stromness, suitable for wind energy developments mostly below 20m.

Landscape Character Type Sensitivity Assessment

Coastal Granite Pastures

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Small scale including small scale settlement of Stromness: High Sensitivity
Landform	Hilly, steeply sloping from the coast: Medium - High Sensitivity
Pattern	Semi-improved pasture and some arable fields to the north and coastal settlement of Stromness to the south: Medium - High Sensitivity
Development	Town of Stromness, scattered farmsteads and residential properties, roads, tracks: Medium - High Sensitivity
Quality	Stromness has a high townscape quality: High Sensitivity
Elements and Features	Coastal settlement of Stromness is the main feature, backdropped by an agricultural landscape on low hills, rocky granite outcrops and granite field boundaries: Medium - High Sensitivity
Context	Landscape is the setting for the characterful town of Stromness and an important gateway for sea travellers: High Sensitivity
OVERALL RATING	**High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Multiple resident receptors, travellers by road and ferry, tourists: High Sensitivity
Internal Visibility	Sloping landform allows mainly good visibility, but in some areas visibility is restricted by development or landform: Medium Sensitivity
External Visibility	Southern areas visible from approaches by ferry, northern areas less so: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Within National Scenic Area, WHS Potentially Sensitive Area: High Sensitivity
Community value	Setting to sizable settlement, includes visitor interest, important departure / arrival point from sea: Medium - High Sensitivity
Cultural value	Cultural and historic interest in Stromness, SAM and Listed Buildings: Medium - High Sensitivity
Perceptual	Characterful coastal landscape / townscape: High Sensitivity
Rarity	The only landscape character of its type within Orkney, unique: High Sensitivity
OVERALL RATING	**High Sensitivity**

LCT ORK 10: ISOLATED COASTAL KNOLLS

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium - High

Landscape Value: Medium

Description

Isolated Coastal Knolls occur in only two locations along the eastern coast of West Mainland, to the north of Finstown. The key features of the areas are rounded low hills of improved and unimproved pasture, standing separate from the inland *Moorland Hills*. Rising above the settled farming landscape the hills are important local landmarks. The area to the south includes Enyas Hill, rising to 140m AOD, with two secondary high points nearby. To the north is the smaller Vishall Hill, at approximately 90m AOD. At lower levels the unenclosed pasture gives way to enclosed fields of improved pasture and arable production.

Farm buildings skirt the lower levels of the hills; minor roads and tracks usually contour around the hills, but occasionally running in the direction of slope. The northern area around Vishall Hill includes more development, with the A966 cutting through the character area, with the hamlet of Redland stretched along the road.

Generic Capacity for Wind Development

The combination of modest height and visual prominence of the hills, together with surrounding scattered settlement, is prohibitive to larger scale wind energy developments. Capacity for developments <30m exists, associated with the farms and settlements found in the low levels of the area. Development at these lower levels can often be backclothed, either by the *Coastal Knolls* or the nearby *Moorland Hills*. Turbines greater than 30m would dominate the small scale hills and be visually prominent particularly when viewed from Rousay or along the coast of West Mainland. The higher areas of the LCT are particularly sensitive, where turbines located near the summit tops have become quite prominent features.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 3	0.5 - 1km
20-30m (medium)	Low	1 - 2	1 - 2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with No Wind Turbines* on the hilltops/ *Landscape with Wind Turbines* in the lower lying areas

Guidance

- Turbine developments up to 30m are best sited to the inland side of the knolls, where they can be associated with farms and houses and are most likely to be backclothed either by the *Isolated Coastal Knolls* or the *Moorland Hills* to the rear. Turbine groups to be of the same turbine type and style.
- Small groups of turbines should be aligned to linear features of roads or tracks, and breaks in the slope.
- Summit tops are to be kept clear of turbines of all sizes.
- The close proximity of existing large wind developments to these areas risks the creation of *Wind Turbine Landscapes*, where turbines of multiple size are seen in all directions. It is considered that much of the Vishall LCA has already reached this stage of development when seen in the context of the five Hammars Hill turbines.

Isolated Coastal Knoll of Vishall Hill. The hill tops are sensitive to even small developments because of the small scale of the hills and their prominence in the surrounding landscape.

Landscape Character Type Sensitivity Assessment

Isolated Coastal Knolls

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium, limited in geographical extent: Medium Sensitivity
Landform	Usually gently sloping hills which contrast with the undulating surrounding landscape: Low - Medium Sensitivity
Pattern	Simple pattern mainly enclosed unimproved grassland, but some settlement: Low - Medium Sensitivity
Development	Little development in upland areas, A966 passes near Vishall Hill, near which there are small farm and residential developments: Medium Sensitivity
Quality	Integrity as a largely undeveloped coastal hill landscape with scenic qualities: Medium - High Sensitivity
Elements and Features	Distinct hills, pasture with stone or fence boundaries, settlement and farms. Some roads and tracks: Medium Sensitivity
Context	Prominent hilly features contrast with the lower lying more undulating features of the coastal basins and inclined coastal pastures: High Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Resident population, some travellers on main A966, some walkers: Medium Sensitivity
Internal Visibility	An open landscape with few intervening features, but landform restricts visibility: Medium Sensitivity
External Visibility	Prominent coastal locations, visibility from inland, sea and neighbouring islands: High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some areas within WHS Potentially Sensitive Area: Medium Sensitivity
Community value	Setting to some local settlements, local recreational value: Medium Sensitivity
Cultural value	Some Neolithic sites, but undesignated: Low - Medium Sensitivity
Perceptual	Visually exposed coastal hills, affording views to sea and along the coast: Medium - High Sensitivity
Rarity	Hills not rare but coastal location is unusual, found in two areas only: Medium - High Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 11: ENCLOSED BAY LANDSCAPES

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: Medium - High

Landscape Value: Medium - High

Description

Enclosed Bay Landscapes occur primarily on West Mainland, but also in two locations on Hoy and once on Eday. These are small scale landscapes with enclosed sand or shingle beaches, typically with enclosed pasture to the rear on a flat or gently sloping hinterland and flanked by more elevated upland landscapes. Roads run through the areas, allowing access to the farmland and beaches, with visitor facilities such as car parks, tea rooms and toilets sometimes available. Farm houses and other small buildings are generally present in the hinterland.

Generic Capacity for Wind Development

The small scale, scenic coastal qualities, and popularity as visitor attractions generally make wind energy development unsuitable within this landscape character type. Any development should be infrequent, small scale (<30m) and closely associated with built development such as farms and other properties. No capacity exists for turbines greater than 30m in height.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 3	0.5 - 1km
20-30m (medium)	Low	1	2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape With No Wind Turbines / Landscape With Occasional Wind Turbines*

Guidance

- Occasional small to medium sized turbines to be associated with farms and buildings. Groups of small turbines (<20m) aligned with linear features such as roads and field boundaries. Turbine groups to be of the same turbine type and style.
- Developments preferably set back, away from the coastline, to benefit from back clothing provided by more elevated landforms to the rear.
- Turbines should be set back from the visually prominent promontories / headlands which enclose the bays at the transition with other LCTs.

The enclosed Waulkmill Bay on the south coast of West Mainland.

Landscape Character Type Sensitivity Assessment

Enclosed Bay Landscapes

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Small, enclosed bay landscapes: High Sensitivity
Landform	Low lying, sloping towards sand / shingle beach: Medium Sensitivity
Pattern	Mainly unimproved pastures running to the coast: Medium Sensitivity
Development	Frequent, small scale farm development and houses, roads, tracks, some visitor facilities: Medium - High Sensitivity
Quality	Landscape maintained for agriculture and visitors: Medium Sensitivity
Elements and Features	Distinctive enclosed bays with beaches, some shore development, farm hinterland: Medium - High Sensitivity
Context	Coastal locations with visitor interest: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Visitors to coast and visitor attractions, residents: Medium - High Sensitivity
Internal Visibility	Low lying bay landscape allows internal views: High Sensitivity
External Visibility	Visible from the sea and from high points inland, but not extensive views in: Medium Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some landscapes within WHS Inner Sensitive Zone, National Scenic Areas: Medium - High Sensitivity
Community value	Resident population, visitors to coast and other attractions: Medium - High Sensitivity
Cultural value	Skara Brae, some listed buildings: Medium - High Sensitivity
Perceptual	Scenic, sheltered coastal landscapes with recreational interest: Medium - High Sensitivity
Rarity	Sites mainly on Mainland and Hoy, not common: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

LCT ORK 12: COASTAL HILLS AND HEATH

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: High

Landscape Value: Medium - High

Description

Coastal Hills and Heath occur exclusively on the western coastline of Orkney, on West Mainland, Rousay and Westray. This is an upland landscape character type, of medium to large scale, comprising rounded hills up to approximately 150m AOD, meeting the coast and typically the *Cliff Landscapes*. Cairns and small rock outcrops, ruined crofts and dykes are occasional features amongst the otherwise smooth profile of the hills.

Landuses are mainly improved pasture, rough grassland and heath. Pastures are generally unenclosed and field boundaries are few. The areas are often unsettled, with the occasional road or track, however the smaller pockets of the lower lying landscape character type found to the north west of West Mainland do contain roads, scattered farming and housing developments. Quandale on Rousay contains Orkney's best example of a 'fossilised', pre-improved landscape, making the area of significant historical importance.

The landscape type is important to the often dramatic coastal landscape of western Orkney. Its undeveloped upland character contributes to the wildness qualities of the wider coastal landscape and provides a backdrop/skyline to some more settled areas on the inland side.

Generic Capacity for Wind Development

Sensitivity to all scales of wind development is high within this landscape character type because of its context in a sensitive coastal landscape, its high visual exposure and undeveloped character. However sensitivity varies to some extent between landscape character areas.

The more isolated and less developed areas to the south of West Mainland, Rousay and Westray have the lowest capacity, allowing only the smallest scale developments, typically in lower lying areas well below the skyline and when clearly associated with the few farms or houses.

The areas to the north west of West Mainland have higher capacity resulting from their more developed character, where denser development is possible. However there is no capacity for turbines greater than 30m because of their visual prominence.

The more remote upland areas, for example near the west coast of Westray and to the south west of West Mainland, have no capacity for wind developments of any scale.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 2	1 - 2km
20-30m (medium)	Low	1	2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape With No Wind Turbines / Landscape With Occasional Wind Turbines*

Guidance

- Occasional small to medium sized turbines no greater than 30m to be associated with farms and buildings. Groups of small turbines (<20m) aligned with linear features such as roads and field boundaries. Turbine developments only within the lower lying, settled areas of the landscape character type.
- Turbines between 20 and 30m in single turbine developments to minimise their presence within the landscape. Turbines of this size could dominate small dwellings and therefore should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Developments to be kept well away from the coastline.
- The more remote, elevated and visually exposed locations have no capacity for wind development.
- Any developments on Rousay to be sensitive to the historic Quandale landscape.

Coastal Hills and Heath, such as here on South Ronaldsay near Burwick, would be sensitive to even small turbines seen on the skyline.

Landscape Character Type Sensitivity Assessment

Coastal Hills and Heath

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium to large scale: Low - Medium Sensitivity
Landform	A varied landform including numerous low summits, shallow valleys, crags and other topographic features: Medium - High Sensitivity
Pattern	A simple landscape pattern of heath and improved pature and rough grassland: Low - Medium Sensitivity
Development	Little built development, few roads and tracks add to the wilderness character. Important remnants of pre-improved landscape (Rousay): High Sensitivity
Quality	Absence of development which may degrade the quality of the landscape character, high quality: High Sensitivity
Elements and Features	Topographic features and isolated prominent manmade features such as isolated lighthouses are distinctive: Medium - High Sensitivity
Context	Elevated coastal location, prominent from the sea and some neighbouring islands, backdrop to rugged cliff landscapes: High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Low resident population, few access routes through the landscape, but coastal trails and other points of interest attract visually sensitive receptors: High Sensitivity
Internal Visibility	Views largely unrestricted internally except by topography, all round views from local high points: Medium - High Sensitivity
External Visibility	High areas form the skyline when viewed from inland, visibility from other islands is limited as areas are generally external to the wider Orkney archipelago: Medium - High Sensitivity
OVERALL RATING	**High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Some areas within National Scenic Area, ecological designations SAC and SSSI for some areas: Medium - High Sensitivity
Community value	Generally few settlements with the exception of north west Mainland: Low - Medium Sensitivity
Cultural value	Some Ancient Monuments, Quandale fossilised pre-improved landscape on Rousay: Medium Sensitivity
Perceptual	Open upland areas with some wildness, often adjoining a dramatic cliff coastline: Medium - High Sensitivity
Rarity	Characteristic of the west coast of Orkney, not found in other parts: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

LCT ORK 13: CLIFF LANDSCAPES

Landscape Character Sensitivity: High

Visual Sensitivity: High

Landscape Value: High

Description

Cliff Landscapes occur extensively along the western coastlines of Hoy, West Mainland, Westray, Eday and South Ronaldsay. Occasional eastern facing cliffs occur on South Ronaldsay and Deerness. The landscape character type is narrow, typically no more than 0.5km wide, but long, with character areas stretching up to 10km in the case of the south west coast of Hoy, and part of a large seascape setting.

The landscape character type is rich in features including cliffs, stacks, caves, arches, and 'gloups' – collapsed sea caves. Cliffs are sometimes high, the highest being found on Hoy at over 300m in places, often housing seabird colonies. At the top of the cliffs are typically unenclosed rough grazing and maritime heath. These areas are mostly undeveloped except for the occasional cliff top path or track, although some wind energy developments are consented on South Ronaldsay.

Generic Capacity for Wind Development

This landscape character type is highly sensitive to all scales of wind development because of its often spectacular scenery, dramatic geological features and its isolated, wild characteristics. This landscape character type often attracts visitors such as walkers and climbers wishing to experience an undeveloped landscape and its wildlife. Turbines would tend to be visually prominent and remote from the user, and their introduction would have a detrimental effect on the landscape character.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	No Capacity	- - -	- - -
20-30m (medium)	No Capacity	- - -	- - -
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with No Wind Turbines*

Guidance

- No development of any scale within this landscape character type.

Cliff Landscape of the west coast of Hoy at Rackwick.

Cliff Landscape of the west coast of Westray.

Landscape Character Type Sensitivity Assessment

Cliff Landscapes

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium: Large vertical features, but limited geographical extent, large seascape setting: Medium Sensitivity
Landform	Often dramatic vertical cliffs with stacks and caves: High Sensitivity
Pattern	Cliff tops are unenclosed rough pastures, maritime heath behind and irregular cliff edge: Medium Sensitivity
Development	Few developments to be affected. Exposed coastal location has wilderness characteristics: High Sensitivity
Quality	High quality, with integrity as a wild coastal landscape: High Sensitivity
Elements and Features	Natural vertical features of cliffs and stacks dominate: High Sensitivity
Context	Dramatic exposed coastal landscapes: High Sensitivity
OVERALL RATING	**High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Few residents, but cliffs attract visually sensitive recreational users: High Sensitivity
Internal Visibility	Extensive views along the coast from cliff tops, some restriction from topography and geological features: Medium - High Sensitivity
External Visibility	Prominent from the sea, open inland landscape allows views of cliffs: Medium - High Sensitivity
OVERALL RATING	**High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Large areas included in the National Scenic Area and WHS Potentially Sensitive Area: High Sensitivity
Community value	Valued by recreational users - walkers, birdwatchers: High Sensitivity
Cultural value	Few features of historic / cultural interest: Low - Medium Sensitivity
Perceptual	Exposed dramatic cliff landscapes: High Sensitivity
Rarity	Areas with some of the highest sea cliffs in the UK: Medium - High Sensitivity
OVERALL RATING	**High Sensitivity**

LCT ORK 14: COASTAL SAND LANDSCAPES

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: Medium - High

Landscape Value: Medium - High

Description

The most extensive *Coastal Sand Landscapes* occur on the island of Sanday, but are found occasionally on all of the other Outer North Isles, South Ronaldsay, Burray and East Mainland. The landscapes are created by sand deposition, resulting in features such as sandy bays, dunes and tombolos. Sandy bays are often backed by low dunes, with vegetated areas tending to be of marram grass or rough grassland. Waterbodies are sometimes present. Landscape areas are typically small scale, often narrow but on Sanday occasionally extending several kilometres in length.

Buildings are infrequent within this landscape character type and, where present, usually situated well to the landward side of the character area. Minor roads and tracks often pass through, with carparks and small picnic sites sometimes provided for visitors. While often quite undeveloped themselves, the landscape character areas often occur adjacent to settled, pastoral landscape character types such as *Low Island Pastures*.

Generic Capacity for Wind Development

Coastal Sand Landscapes are sensitive to wind energy developments because of their general small scale, exposed coastal locations and attractiveness to visitors. Important characteristic features such as dunes and bays could be easily dominated by large scale wind development. Capacity for turbines <30m exists when associated with houses and farms; turbines isolated within these small scale and often quite enclosed character areas may appear incongruous. The scarcity of built development within this landscape character type limits development opportunities.

Greater capacity for wind energy developments are found exceptionally on parts of Sanday, which are addressed within the island specific assessment.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 3	0.5 - 1km
20-30m (medium)	Low	1	2km
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with No Wind Turbines*

Guidance

- Small sized turbines to be associated with farms and buildings. Groups of small turbines (<20m) aligned with linear features such as roads and field boundaries. Turbine groups to be of the same turbine type and style.
- Turbines between 20 and 30m to be as single turbine developments only. Turbines at the upper end of this scale should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Development should be kept away from the coast, concentrated in the more farmed landscape to the rear of the landscape character areas.

Sensitive Coastal Sand Landscapes of dunes and sandy beaches on Sanday are sensitive to wind energy developments, and are important visitor attractions.

Landscape Character Type Sensitivity Assessment

Coastal Sand Landscapes

Landscape Character Sensitivity	**Criteria /Sensitivity Levels**
Scale	Small scale sandy beaches / bays: Medium - High Sensitivity
Landform	Flat, with wide sand bays and flats merging with the sea: Low - Medium Sensitivity
Pattern	Rough grassland leading to dunes and sand bays: Medium Sensitivity
Development	Little built development, some farm buildings and sand extraction. Golf course: Medium Sensitivity
Quality	Scenic intact coastal landscape but compromised by some sand extraction: Medium - High Sensitivity
Elements and Features	Sand landscape of dunes and sandy bays. Characteristic, small scale, would be sensitive to development: Medium - High Sensitivity
Context	Landscapes are important components of the coastal landscape: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Visual Sensitivity	**Criteria/ Sensitivity Levels**
Receptors	Some residents and recreational users of beaches: Medium - High Sensitivity
Internal Visibility	Open, low lying landscapes with generally high visibility, but dunes and other features can restrict views: Medium - High Sensitivity
External Visibility	Visible inland from high points of enclosing landscape, visible from the sea: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	**Criteria/ Sensitivity Levels**
Designations	Areas include wildlife designations (SAC, SSSI, RAMSAR): Medium Sensitivity
Community value	Sparsely populated and isolated, but some golf development: Medium Sensitivity
Cultural value	Potential for buried historic sites, some scheduled monuments, listed buildings: Medium Sensitivity
Perceptual	Isolated, largely undeveloped sweeping, sandy bays: High Sensitivity
Rarity	Landscapes occurring mainly on Sanday: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

LCT ORK 15: PEATLAND BASINS

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: Medium

Landscape Value: Medium

Description

Peatland Basins occur in only five areas on Orkney: on East and West Mainland, Rousay and Eday. They usually occur adjacent to or within the *Moorland Hills* landscape character type. Areas of this landscape type are generally flat and low lying, usually below 30m AOD, and enclosed by higher ground, creating a basin landscape. An exception to this is the area identified in the interior of Rousay, the topography of which is hilly, with elevations up to 200m AOD. The areas are largely featureless, of unenclosed peatland or grassland, which are not usually grazed. Roads sometimes cut across the areas, however development is usually absent.

Generic Capacity for Wind Development

Peatland Basins are limited in their geographical extent, the scale of which is small to medium. Despite the lack of development and their simple topography, their low lying, small scale and enclosed nature would not support large turbine developments. The general absence of development would make the introduction of more domestically scaled turbines appear illogical within the landscape character type. Capacity for wind development below 20m exists only with occasional small scale farm and housing developments occurring usually at the fringes of the landscape character area.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1	1km
20-30m (medium)	No Capacity	- - -	- - -
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with No Wind Turbines*

Guidance

- Basin floors to be kept free of wind energy developments of all scales.
- Small turbines of less than 20m to be associated with small houses and other developments where they occur on the edges of the areas.

Landscape Character Type Sensitivity Assessment

Peatland Basins

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Small to medium scale. Rousay medium scale: Medium - High Sensitivity
Landform	Generally flat and low lying, basin type landscape, although steeper areas on Rousay: Medium - High Sensitivity
Pattern	Simple pattern of peatland or wet grassland, some inland water bodies: Low - Medium Sensitivity
Development	Generally undeveloped due to wet boggy nature, some wilderness characteristics. Lack of development is a characteritic: Medium - High Sensitivity
Quality	High landscape integrity, few features detracting from character: Medium - High Sensitivity
Elements and Features	Few manmade features, natural elements of unenclosed peatland, some roads: Low - Medium Sensitivity
Context	Usually near Moorland Hills, near or within areas of wilderness value: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Few receptors, some recreational users: Low - Medium Sensitivity
Internal Visibility	An open landscape with few intervening features restricting visibility: High Sensitivity
External Visibility	Basin landform allows visibility from local surrounding landscapes, but not prominent: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Areas within WHS Potentially Sensitive Zone, SSSI: Medium - High Sensitivity
Community value	Mainly unpopulated, but some importance to recreational users: Low - Medium Sensitivity
Cultural value	Few designated sites but some archaeological interest: Low - Medium Sensitivity
Perceptual	Generally undeveloped landscapes with remoteness / wilderness characteristics: Medium - High Sensitivity
Rarity	Not widespread, however not a rare or unusual landscape: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 16: LOCH BASINS

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium - High

Landscape Value: Medium - High

Description

The *Loch Basin* landscape character type occurs in its most extensive form on West Mainland, where it comprises a substantial proportion of the land area. Smaller areas occur on Rousay, Westray and Stronsay. This landscape character type is low lying, at elevations typically below 50m AOD, with a flat or gently undulating landform. In the case of the West Mainland landscape character area occasional small hills intrude from surrounding, more elevated landscape character types. Water bodies and associated areas of wetland and marsh are the key components of this landscape. This, and the proximity of the landscape type to the sea, makes water a defining feature of these landscape character areas.

The landscape type is settled and agricultural in character, with fields of improved pastures and some arable production surrounding the water bodies. Fields are medium sized and separated by stone walls or more typically wire fences. Development of sometimes large farmsteads and houses are scattered throughout the landscape, and on Mainland there are concentrations of dwellings into hamlets and small villages. Quite extensive road networks run through the areas, with the area on West Mainland containing three A roads. Key archaeological sites exist to the south of the West Mainland area.

There are often long views over the lochs experienced from within the basin landscapes, while the low lying 'drowned' basin landform is evident from the surrounding higher ground.

Generic Capacity for Wind Development

Sensitivities to wind energy developments arise primarily because of the settled nature of this landscape character type; the flat, low lying landform into which tall vertical structures would be prominent; and the visual sensitivity associated with landscape of the World Heritage Site to the south of the area in West Mainland. No capacity for turbines greater than 50m exists within the landscape character type because of these reasons. Additionally the smaller scale and extent of *Loch Basin* landscapes outside of West Mainland could be overwhelmed by the presence of large turbines.

Occasional 30-50m turbines can be accommodated within this landscape as some opportunities exist for back clothing turbines against neighbouring hilly landscape character types. Capacity for smaller scale turbines up to 30m, associated with farms and settlement, is quite widespread, but specific sensitivities exist in West Mainland due to the presence of the World Heritage Site and its associated monuments.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Medium	1 - 3	0.5 - 2km
20-30m (medium)	Medium	1 - 2	3 - 5km
30-50m (medium/large)	Low	1	5km
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Occasional Wind Turbines*

Guidance

- Small sized turbines to be associated with farms and buildings. Groups of small turbines (<20m) aligned with linear features such as roads and field boundaries. Turbine groups to be of the same turbine type and style.
- Turbines between 20 and 30m, of no more than two turbines, and well separated between groups. Turbines at the upper end of this scale should be visually associated with larger farm buildings or small groups of houses, with adequate visual separation to avoid appearing out of scale with the buildings.
- Occasional single turbine developments of 30 to 50m in height to be located towards the periphery of the character areas, separated from buildings, where they can benefit from back clothing from neighbouring hilly landscape character types. Single turbines of this scale should be well separated.
- The open, basin like character of these areas has the potential for the inadvertent creation of *Wind Turbine Landscapes,* where multiple developments of different size turbines could be visible in many directions. This should be avoided by having regard for the recommended small group sizes and separation distances.

The open Loch Basin on West Mainland, unsuited to larger scale wind development which would be prominent in the open landscape.

Landscape Character Type Sensitivity Assessment

Loch Basins

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Varies from small to large scale, including large waterbody features, but smaller scale around settlements: Medium Sensitivity
Landform	Generally flat with some small hillocks and undulations, slightly inclined towards lochs: Low Sensitivity
Pattern	Large rectilinear fields, mainly pasture with some moorland, large waterbodies: Medium Sensitivity
Development	A settled landscape of scattered farms with small settlements and road networks running through: Medium Sensitivity
Quality	Landscape mostly managed as farmland, generally well maintained buildings and farmland: Medium Sensitivity
Elements and Features	Farmland dominates, with occasional farm/settlements, roads, fences and small electricity pylons. Some prominent archaeological features: Medium Sensitivity
Context	Generally large flat landscapes backdropped by neighbouring hills but focal landscapes when viewed from hills: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	A settled landscape with major road routes running through, some important tourist sites: Medium - High Sensitivity
Internal Visibility	Few features to interrupt views other than undulating topography: Medium - High Sensitivity
External Visibility	Basin landscape is typically overlooked from neighbouring higher ground: Medium Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Part within National Scenic Area, some areas SSSI, WHS inner sensitive zone: Medium - High Sensitivity
Community value	The setting to several settlements, important visitor attractions: Medium - High Sensitivity
Cultural value	The site of several sites of important cultural and historic value, UNESCO World Heritage sites: High Sensitivity
Perceptual	Predominantly open, large scale, scenic landscape with strong associations with heritage sites: Medium - High Sensitivity
Rarity	Comprises a large area of West Mainland, not rare: Medium Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

LCT ORK 17: LOW MOORLAND

Landscape Character Sensitivity: Medium

Visual Sensitivity: Medium

Landscape Value: Medium

Description

The *Low Moorland* landscape character type occurs occasionally throughout Orkney, found on Papa Westray, Stronsay, Flotta, South Ronaldsay and East Mainland. The landscape type is found on headlands and island peripheries. The landscape is low lying and undulating, typically 50m below AOD, running to low, undramatic coastlines. Vegetation is mostly moorland and rough grassland, and typically unenclosed. Development is mostly absent from these areas, with the exception of tracks, some small buildings, and on Flotta there is a disused airstrip. Areas of this landscape type have qualities of remoteness and wildness, but which are constrained to an extent by limited separation from neighbouring settled or developed areas.

Generic Capacity for Wind Development

These landscapes have a number of characteristics which are compatible with larger scale wind developments: a simplicity of landform and land cover; an undramatic coast absent of major features; no resident population; and little built development. The scale of the landscape areas and the islands where they occur varies. Larger areas occur on Stronsay and Flotta, and their position on exposed headlands, in the context of the larger scale seascape, can provide good capacity for larger scale wind developments, between 50 and 80m, or in some locations between 80 and 125m. Areas which are smaller in extent and/or part of a small island context are much more sensitive to wind development, for example the area to the north of Papa Westray.

These landscape areas, while unpopulated, are often in proximity to more settled landscapes, and therefore the siting of intermediate sized turbines, of 30 to 50m, may appear logical in some circumstances. The absence of development within the areas means a lower capacity for turbines below 30m.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 4	1 - 2km
20-30m (medium)	Low	1 - 3	2 - 3km
30-50m (medium/large)	Medium	1 - 3	2 - 5km
50-80m (large)	Medium	1 - 5	5 - 10km
80-125m (very large)	Medium	1 - 5	10 - 20km

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Wind Turbines*

Guidance

- Small turbines, below 30m, may appear illogical within this landscape character type. No turbines below 30m unless directly associated with houses, farms or other developments.
- Turbines between 30 to 50m to be sited within the character areas where there is some association with nearby settlement or development, but sufficiently separate to avoid dominating smaller scale buildings.
- Single or groups of turbines between 50 and 125m to be sited in more isolated locations, away from neighbouring settlement.
- Turbine groups of all sizes should be aligned to the landform and other natural features. Rigid lines or grids of turbines would not be in keeping with the underlying landscape character.

The Low Moorland of southern Stronsay. This landscape has capacity for larger turbines because of its simplicity of landform and vegetation cover, and relative remoteness from settlement.

Landscape Character Type Sensitivity Assessment

Low Moorland

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium scale with limited horizontal extent, low hills: Medium Sensitivity
Landform	Gently rolling topography, low lying coastal locations: Low - Medium Sensitivity
Pattern	Simple landscape of unenclosed moorland ending with a shoreline, sometimes rocky / low cliffs: Low - Medium Sensitivity
Development	Largely undeveloped, but some infrastructure (e.g. airstrip at Flotta), oil terminal nearby. Wild qualities but not wilderness: Medium Sensitivity
Quality	Integrity as intact coastal moorland landscapes with some wilderness: Medium - High Sensitivity
Elements and Features	Moorland dominates with few distinctive features: Low - Medium Sensitivity
Context	Peripheral coastal low lying moorland: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Few resident or other receptors in the areas: Low Sensitivity
Internal Visibility	Gently rolling topography allows unrestricted visibility: High Sensitivity
External Visibility	Visible from immediately inland and the sea, some neighbouring islands, but not prominent: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	One SSSI, local wildlife designations: Low - Medium Sensitivity
Community value	Unpopulated but areas attract bird watchers (Papa Westray): Medium Sensitivity
Cultural value	Some coastal cairns, brochs, but no significant sites: Low - Medium Sensitivity
Perceptual	Low exposed moorland, semi-natural characteristics, coastal, exposed to the sea: Medium - High Sensitivity
Rarity	Uncommon within the Orkney landscape: Medium - High Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 18: PLATEAU HEATHS AND PASTURE

Landscape Character Sensitivity: Low - Medium

Visual Sensitivity: Medium - High

Landscape Value: Low

Description

Plateau Heaths and Pasture occurs towards the eastern side of Orkney, most extensively on East Mainland and South Ronaldsay, with smaller pockets occurring on Shapinsay and Stronsay. The landscape type is upland in character, but of modest elevation, typically occurring between 50 to 100m AOD. On East Mainland and South Ronaldsay the areas form a low, upland spine to the islands, while on Shapinsay and Stronsay the areas occur in coastal locations. The topography of these areas is generally undulating or flat, where they can form distinctive plateaus.

Vegetation is a mixture of pasture and heath, with fields usually enclosed but sometimes of a larger scale than those in less elevated locations. Scattered farms, roads and tracks are sometimes present, while some areas are largely development free.

Perceptually the areas feel open and elevated, sometimes with good views, but with the plateau landform often curtailing views to the more settled landscape and coast below.

Generic Capacity for Wind Development

The landscape scale is larger than the more settled lowlands, and the simple topography, and lack of development, potentially provides opportunities for wind energy developments > 30m. However larger turbines over 50m, located on the plateau tops, are likely to dominate the island landmasses. Turbines >50m would be of similar height to the landforms on which they would sit, and with little separation from the houses and farms of the adjacent more settled lowland areas.

Medium/large turbines (30 to 50m) would be less dominant, and their scale would relate better to the lower lying settlements found on South Ronaldsay and East Mainland. Their positioning in more elevated upland locations, but loosely associated with lower lying settlement, would appear rational in the landscape. Nonetheless turbines of this size could be locally prominent when skylined in elevated locations.

Small and medium sized turbines up to 30m are more readily absorbed into a landscape of this scale, but should generally be associated with specific farms and other developments, of which there are relatively few.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 4	1 - 2km
20-30m (medium)	Low	1 - 3	2 - 3km
30-50m (medium/large)	Low	1 - 3	3 - 5km
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Occasional Wind Turbines*

Guidance

- Small turbines up to 30m singly or in small groups, associated with farms and other buildings, aligned to linear features such as roads, tracks and field boundaries. Turbine groups to be of the same turbine type and style.
- Turbines from 30 to 50m singly or in small groups. In some cases it may be possible to set turbines back from the plateau edge to minimise effects on the more lowland areas, however it is also important to avoid placing turbines on high plateau tops where they may become prominent features. Turbine groups of this size are better aligned to landform and natural features.

The undulating Plateau Heaths and Pastures of South Ronaldsay. The high points of the plateau are sensitive to wind energy developments, and turbines greater than 30m should not be placed on the tops.

Landscape Character Type Sensitivity Assessment

Plateau Heaths and Pasture

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium scale throughout: Medium Sensitivity
Landform	Varies from flat to undulating with some low hills: Medium Sensitivity
Pattern	Predominantly pasture, heath with some arable, occasional small settlements and farm buildings: Low - Medium Sensitivity
Development	Sparse development of scattered farms, small settlements, minor roads and tracks. Some A roads pass through, but not wilderness: Low - Medium Sensitivity
Quality	Landscape mostly managed as farmland, generally well maintained buildings and farmland: Medium Sensitivity
Elements and Features	Few notable features, occasional manmade features such as masts on hill: Low - Medium Sensitivity
Context	Exposed low plateau landscapes most extensively found in inland South Ronaldsay and East Mainland: Low - Medium Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Low resident population, but transient users of major roads, elevated viewpoints: Medium Sensitivity
Internal Visibility	A generally open landscape, intervening topography sometimes restricting visibility: Medium - High Sensitivity
External Visibility	Areas form the elevated central plateaus of South Ronaldsay and East Mainland: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Local wildlife designations only: Low Sensitivity
Community value	Low resident population, few visitor attractions: Low Sensitivity
Cultural value	Few historic or cultural features: Low Sensitivity
Perceptual	Relatively low elevation but exposed, open character with good views: Medium Sensitivity
Rarity	Found in large parts of West Mainland, South Ronaldsay, not rare: Low - Medium Sensitivity
OVERALL RATING	**Low Sensitivity**

LCT ORK 19: ROLLING HILL FRINGE

Landscape Character Sensitivity: Low - Medium

Visual Sensitivity: Medium

Landscape Value: Medium

Description

Rolling Hill Fringe occurs almost exclusively on West Mainland, with the exception of a small area found near Moaness on Hoy. This landscape type transitions between the upland hills and the more settled landscape of the loch basins and coastal fringes, and therefore it has characteristics in common with both landscape character types. The landscape is generally rolling and variable in its overall steepness. Lower lying areas are well settled by farms, sometimes quite large, houses and occasionally nucleated settlements. The farmed landscape is under pasture and sometimes arable production, with generally rectilinear fields of varying shape and size, including elongated relict fields resulting from the traditional Udal system of land tenure. Field size tends to increase at higher elevations, sometimes with unenclosed pastures. Good access is provided by the network of roads and tracks passing through the areas.

Generic Capacity for Wind Development

This landscape type has a number of characteristics which reduce its sensitivity to at least smaller scale wind energy developments: a landscape of 'working' agricultural character and scattered settlement; its inland location away from sensitive coastlines; the rolling topography which contains views; a simple landform; and the back clothing provided by higher hills to the rear.

However the populated nature of these areas does create visual sensitivity, as does the presence of major roads sometimes passing through. The areas lie within or in close proximity to the National Scenic Area and World Heritage Sites, and an area of *Rolling Hill Fringe* forms the western hinterland of Kirkwall.

Large scale developments of multiple turbines would be inappropriate given the designations and the settled nature of the landscape, but good capacity exists for smaller developments up to 30m in height, which can be associated with the frequent farms and other settlements. The more elevated and less populated areas have capacity for turbines between 30 and 50m in height, and occasionally between 50 and 80m. In these locations turbines should be sited to avoid skylining and being seen in prominent upland locations.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	High	1 - 4	0.5 - 2km
20-30m (medium)	High	1 - 3	1 - 2km
30-50m (medium/large)	Medium	1 - 2	2 - 4km
50-80m (large)	Low	1	5km
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Wind Turbines*

Guidance

- Small turbines up to 30m singly or in small groups, associated with farms and other buildings, aligned to linear features such as roads, tracks and field boundaries. Turbine groups to be of the same turbine type and style.
- Turbines from 30 – 50m singly or in small groups, separate from small scale settlements and therefore more likely to be appropriate in the more upland locations, but sited so as to be backclothed against higher *Moorland Hills* or other upland landscape types to the rear. At this scale turbines may be best aligned to landforms and natural features unless strong linear manmade features are present.
- Single turbines between 50 – 80m to be located in the more elevated upland areas and away from settlements, associated with larger landforms and back clothed. Capacity for this scale of development is only likely to exist in the more northerly areas of the landscape character type on West Mainland, away from designated landscapes, heritage sites and major settlement.

The Rolling Hill Fringe to the south of Kirkwall, viewed from the Moorland Hills.

Landscape Character Type Sensitivity Assessment

Rolling Hill Fringe

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Medium scale, with some large scale areas on higher ground, smaller domestic scale in settlements: Medium Sensitivity
Landform	Quite simple, rolling landform, transitioning between higher moorland areas and low lying loch basins or coastal landscapes: Low Sensitivity
Pattern	Uncomplicated pattern of irregularly shaped fields of pastures, more open uncultivated land on higher ground: Low - Medium Sensitivity
Development	Small to medium scale farm developments, some small settlements, connected road and track network: Medium Sensitivity
Quality	Landscape mostly managed as farmland, generally well maintained buildings and farmland: Medium Sensitivity
Elements and Features	Agricultural landscape with generally unremarkable frequent farm buildings, field boundaries, small electricity pylons: Low Sensitivity
Context	Transition between high moorland and loch basins/coastal landscapes, backdrop to sensitive heritage sites in some locations: Medium Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Resident population, transient road users: Medium Sensitivity
Internal Visibility	Sloping landform increases visibility, but rolling topography creates enclosure: Medium Sensitivity
External Visibility	Visible from low lying loch basins, although backdropped typically by higher moorland landscapes: Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Partly within WHS inner sensitive zone, some parts within National Scenic Area: Medium - High Sensitivity
Community value	Setting to a number of small settlements: Medium Sensitivity
Cultural value	Few significant cultural sites: Low Sensitivity
Perceptual	Generally unremarkable agricultural landscape, open nature in elevated areas with some good views: Medium Sensitivity
Rarity	Commonly found in West Mainland: Low - Medium Sensitivity
OVERALL RATING	**Medium Sensitivity**

LCT ORK 20: MOORLAND HILLS

Landscape Character Sensitivity: Low - Medium

Visual Sensitivity: Medium

Landscape Value: Medium - High

Description

Moorland Hills are the predominant upland landscape character type in Orkney, found on West Mainland, Hoy, Rousay and Eday. The rounded, undulating hills rise to 400m AOD on Hoy, but are significantly lower on the other islands with few areas higher than 200m AOD. This landscape type is of the largest scale found in Orkney, but modest compared to the larger scale moorland and mountain landscapes found in mainland Scotland.

Vegetation is usually peat and heather moorland, with very little enclosure. Farming and residential developments are restricted to the occasional farm or house in the less elevated locations. Roads occasionally cut through or skirt the periphery of the areas, with tracked access to the interiors. Telecommunication masts are sometimes located on the hill tops. Peat cutting has historically occurred in these areas, resulting in some scarring of the landscape.

The exposed and sometimes bleak character of these hills, often perceived as devoid of obvious human influences, creates landscapes with some of the strongest wildness characteristics in Orkney.

Generic Capacity for Wind Development

This landscape type has characteristics which are compatible with larger scale wind developments: the relatively large landscape scale; an upland location in which larger scale wind energy appears rational; an absence of settlement; and a simple landform and land cover with few features.

Constraints to wind developments exist however. The extent of the landscape type is often limited, at most 6km wide on West Mainland and adjacent to populated, settled lowland areas, with few opportunities for siting where turbines will not be widely visible. Typically of 200m AOD elevation on West Mainland, the hills are not much higher than the larger turbines. The *Moorland Hills* of Hoy are situated within the National Scenic Area and have a higher relative wildness than most areas, while those on West Mainland form the backdrop to the *Heart of Neolithic Orkney* World Heritage Site. The *Moorland Hills* of Eday are considered to be of too small a scale for large wind developments.

Despite these constraints, capacity for small groups of turbines up to 80m does exist when well sited, taking advantage of topographic screening and back clothing. Widespread visibility of larger scale developments is difficult to avoid, with existing developments at Hammars Hill and Burgar Hill on West Mainland visible from many parts of Orkney.

Capacity for turbines 30 – 50m in height exists towards the peripheries of these areas, where they can often be backclothed and have a loose association with nearby settlements. Capacity for smaller turbines, up to 30m, is quite low, with little development to be associated with and appearing irrational if isolated in a larger scale landscape.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1 - 4	1 - 2km
20-30m (medium)	Low	1 - 3	2 - 3km
30-50m (medium/large)	Medium	1 - 3	3 - 5km
50-80m (large)	Medium	1 - 6	5 - 10km
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with Occasional Wind Turbines*

Guidance

- Small turbines up to 30m are generally not appropriate for this landscape type given the large scale of the landscape and limited opportunities for siting turbines close to farms or other houses. Opportunities may arise at the peripheral lowlands of the character type, where they should be clearly associated with houses, farms and farm buildings.
- Turbines from 30 – 50m singly or in small groups should be separate from settlements and backclothed against higher hills to the rear. At this scale turbines may be best aligned to landforms and natural features unless strong linear manmade features are present.
- Groups of large turbines between 50 and 80m to be carefully sited to take advantage of topographic screening where possible, and the minimisation of cumulative effects by avoiding intervisibility between developments and maintenance of separation distances between groups. The presence of smaller turbines in views to larger turbines groups can also create disorientation and visual confusion and should be avoided. Well designed extensions to existing developments are preferable to new turbines groupings.
- Turbines 50 – 80m to be aligned to landform and topographic features within this landscape type.

The Moorland Hills of Rousay. This landscape type has areas with qualities of wildness, sensitive to wind energy developments.

Landscape Character Type Sensitivity Assessment

Moorland Hills

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Large scale open landscape, high hills in places: Low Sensitivity
Landform	Hilly, sometimes steep topography, more gently undulating in other places: Low - Medium Sensitivity
Pattern	A simple generally unenclosed landscape of moorland: Low Sensitivity
Development	Sparse development, areas often have wilderness characteristics. Some large wind developments: Medium - High Sensitivity
Quality	High quality due to absence of development and land uses which may degrade the quality of the landscape character: Medium - High Sensitivity
Elements and Features	Expansive moorland areas, occasional farm buildings, small electricity pylons and lines, some historic features: Low - Medium Sensitivity
Context	Backdrop to many LCAs, defining features of some islands: Medium - High Sensitivity
OVERALL RATING	**Low - Medium Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Few resident or transient receptors, but recreational users with high sensitivity: Medium Sensitivity
Internal Visibility	Open moorland landscape allows long views, but landform sometimes intervenes: Medium Sensitivity
External Visibility	Areas are highpoints for some islands, although landscape interiors sometimes not visible from surrounding areas: Medium - High Sensitivity
OVERALL RATING	**Medium Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Large parts within National Scenic Area, some areas are SSSI: High Sensitivity
Community value	Low resident population, but some areas are recreational resources: Medium Sensitivity
Cultural value	Few significant cultural sites, but some archaeological features, backdrop to WHS: Medium Sensitivity
Perceptual	Upland areas with strong wilderness characteristics: High Sensitivity
Rarity	Most common upland landscape type: Low - Medium Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

LCT ORK 21: GLACIATED VALLEY

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: Medium - High

Landscape Value: High

Description

The *Glaciated Valley* landscape type occurs in only one location, on northern Hoy encircling Ward Hill, the highest point on Orkney. The valleys are of classic U shaped form. A larger, broader valley passes to the south of Ward Hill, its flat floor rising to no more than 60m AOD. A smaller tributary to the main valley passes to the north of Ward Hill, and is steeper and narrower in profile, rising to a maximum of 115m AOD. The sides of both valleys are steep and craggy with some scree.

The land cover is wet heathland and grass, with no enclosure. A notable exception is the small deciduous Berriedale Wood, occupying a gully within the northernmost valley, considered to the most northerly native woodland in the UK.

Development is in the form of a minor road link between Rackwick and Moaness, including car parking for visitors to Dwarfie Stane, with occasional tracks present, the area being popular with walkers and climbers. Small electricity pylons are notable, following the line of the road along the valley floor.

The steep sided hills obstruct views to the surrounding hills, with views being channelled along the length of the valley. The scenic nature of the landscape type and its surrounds are reflected by its inclusion in the National Scenic Area.

Generic Capacity for Wind Development

No capacity for wind development exists within this landscape character type because of its undeveloped wild character, the prominence of vertical features on a flat valley floor, and its recognised scenic value, protected by a national landscape designation. Exceptionally it may be appropriate to site a small turbine (<20m) near built developments such as those that exist at the far western edge of the character area, close to Rackwick.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	Low	1	0.5km
20-30m (medium)	No Capacity	- - -	- - -
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape With No Wind Turbines*

Guidance

- Small turbines only, up to 20m, when directly associated with houses or other developments, typically at the periphery of the landscape area.
- Developments to be kept away from the central valley floor.

Glaciated Valley at Rackwick, Hoy.

Landscape Character Type Sensitivity Assessment

Glaciated Valley

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Generally large scale, medium in more enclosed sheltered valley areas: Low - Medium Sensitivity
Landform	Distinctive broad u-shaped valley, undulating valley floor, flanked by the highest hills in Orkney: High Sensitivity
Pattern	Simple pattern of heath, some small patches of woodland including Berriedale Birch Wood: Low - Medium Sensitivity
Development	Minor roads and tracks, small power lines prominent along the road. Lack of development provides wilderness characteristics: Medium - High Sensitivity
Quality	A scenic, undeveloped landscape, but features such as power lines intrude: Medium - High Sensitivity
Elements and Features	Distinctive u-shaped valley topography, Dwarfie Stane: High Sensitivity
Context	Valleys lie between moorland hills. Valleys are important characteristic features of the wider Hoy landscape: Medium - High Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Popular area for tourists, walkers and climbers: High Sensitivity
Internal Visibility	Extensive views channelled along the valley: High Sensitivity
External Visibility	External visibility is largely restricted to the high hills immediately surrounding the valley: Low - Medium Sensitivity
OVERALL RATING	**Medium - High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Areas lie within the National Scenic Area, WHS Potentially Sensitive Area, SSSI, SAC: High Sensitivity
Community value	Important area for recreational users: High Sensitivity
Cultural value	Contains one of Orkney's most significant cultural sites (Dwarfe Stane), but few others: Medium - High Sensitivity
Perceptual	Strong wilderness characteristics, surrounded by high hills, atmospheric setting to Dwarfie Stane: High Sensitivity
Rarity	Landscape only found in northern Hoy within Orkney: High Sensitivity
OVERALL RATING	**High Sensitivity**

LCT ORK 22: RUGGED GLACIATED HILLS

Landscape Character Sensitivity: Medium - High

Visual Sensitivity: High

Landscape Value: Medium - High

Description

Rugged Glaciated Hills are found on northern Hoy, the landscape type being divided into the two areas of Ward Hill to the east and the Cuilags to the west, separated by the *Glaciated Valley* landscape type. The hills of this landscape type are more steep and craggy than the other upland areas of Orkney. Ward Hill is the highest point in Orkney at 479m AOD.

This upland, mountainous landscape is vegetated by peatland and heather moorland. There are no settlements or roads, with the occasional footpath the only signs of human influence on the area.

The two rugged landmasses separated by the u-shaped valley is a particularly distinctive landform when viewed from south west Mainland, and this landscape type is one of the defining components of the National Scenic Area, and important to the setting of the *Heart of Neolithic Orkney* World Heritage Sites.

Capacity for Wind Development

The hills of northern Hoy are one of the most recognisable landscape features of Orkney, identifiable from much of the southern parts of the archipelago. Their unsuitability for wind development derives from their qualities of wildness; their complex and craggy form, the steepness of the landform, and the recognition of their nationally important scenic value through the National Scenic Area designation. No capacity for wind development exists within this landscape type.

Turbine Size	Capacity	Group Sizes	Spacing
<20m (small)	No Capacity	- - -	- - -
20-30m (medium)	No Capacity	- - -	- - -
30-50m (medium/large)	No Capacity	- - -	- - -
50-80m (large)	No Capacity	- - -	- - -
80-125m (very large)	No Capacity	- - -	- - -

Spacing ranges relate to minimums at the extremes of the group sizes

Proposed Wind Turbine Landscape Type(s): *Landscape with No Wind Turbines*

Guidance

- No wind energy development within the landscape area.

Landscape Character Type Sensitivity Assessment

Rugged Glaciated Hills

Landscape Character Sensitivity	Criteria /Sensitivity Levels
Scale	Generally large scale, but hills are limited in height and extent: Low - Medium Sensitivity
Landform	Rounded summits but steep sides, rugged cliff faces, scree: High Sensitivity
Pattern	Simple pattern of moorland vegetation: Low - Medium Sensitivity
Development	No development although some tracks cross the hills. Undeveloped nature creates wilderness characteristics: High Sensitivity
Quality	High integrity as a wilderness landscape: High Sensitivity
Elements and Features	Distinct sculpted landform: High Sensitivity
Context	The distinct outline of the hills are a defining characteristic of Hoy and the wider Orkney landscape: High Sensitivity
OVERALL RATING	**High Sensitivity**

Visual Sensitivity	Criteria/ Sensitivity Levels
Receptors	Popular area for tourists, walkers and climbers: High Sensitivity
Internal Visibility	Steep topography restricts internal views except from the highest points: Medium Sensitivity
External Visibility	Hills are highly visible from large parts of Orkney: High Sensitivity
OVERALL RATING	**High Sensitivity**

Landscape Value	Criteria/ Sensitivity Levels
Designations	Areas lie within the National Scenic Area, WHS Potentially Sensitive Area, SSSI, SAC: High Sensitivity
Community value	Important area for recreational users: High Sensitivity
Cultural value	Few features of historic / cultural interest, but wider cultural value e.g. folklore, identity: Medium Sensitivity
Perceptual	Strong wilderness characteristics: High Sensitivity
Rarity	Landscape only found in northern Hoy within Orkney: High Sensitivity
OVERALL RATING	**High Sensitivity**

APPENDIX 4: VISIBILITY ANALYSIS FOR WIND TURBINES IN ORKNEY

Figures 4.2a-e: Visibility from Residential Receptors

Figures 4.3a-e: Visibility from Transport Routes

Figures 4.4a-e: Visibility from Viewpoints

Legend

Landscape Character Areas

settlements-20m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.2a

Visibility from Residential Receptors (20m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

settlements-30m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.2b

Visibility from Residential Receptors (30m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

settlements-50m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.2c

Visibility from Residential Receptors (50m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

settlements-80m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.2d

Visibility from Residential Receptors (80m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

settlements-125m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.2e

Visibility from Residential Receptors (125m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

transport-20m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.3a

Visibility from Transport Routes (20m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

transport-30m-r15.tif

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

ZTV:

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

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Figure 4.3b

Visibility from Transport Routes (30m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

transport-50m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Figure 4.3c

Visibility from Transport Routes (50m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

transport-80m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

ORKNEY ISLANDS COUNCIL

Orkney Landscape Capacity Study

April 2014 8008 GIS 116

Figure 4.3d

Visibility from Transport Routes (80m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

transport-125m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

April 2014 8008 GIS 117

Figure 4.3e

Visibility from Transport Routes (125m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

viewpoints-20m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

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Figure 4.4a

Visibility from Viewpoints (20m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

viewpoints-30m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

April 2014 8008 GIS 119

Figure 4.4b

Visibility from Viewpoints (30m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

viewpoints-50m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

April 2014 8008 GIS 120

Figure 4.4c

Visibility from Viewpoints (50m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

viewpoints-80m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

April 2014 8008 GIS 121

Figure 4.4d

Visibility from Viewpoints (80m high object)

N

0 5 10 20 Km

Legend

Landscape Character Areas

viewpoints-125m-r15.tif

ZTV:

RGB

Red: Band_1

Green: Band_2

Blue: Band_3

Highest Visibility

Lowest Visibility

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Orkney Landscape Capacity Study

April 2014 8008 GIS 122

Figure 4.4e

Visibility from Viewpoints (125m high object)

N

0 5 10 20 Km

APPENDIX 5: FACTORS AFFECTING THE LANDSCAPE AND VISUAL IMPACTS OF WIND TURBINES

5.1 Introduction

There are a number of overlapping and interacting factors which affect the potential landscape and visual effects of wind turbines. The four main turbine factors are:

- Size of turbine
- Turbine design (shape/ blades/ tower /colour)
- Numbers of turbines (within groups and/ or single turbines spread across an area)
- Distribution of turbine groupings (spacing between groups and/or single turbines)

The effects of these factors will in turn differ depending on the character of the landscape in which the turbines are located.

5.1.1 Turbine Size

Turbine size is the first factor to consider in assessing the impacts of wind turbines. In particular, smaller turbines are considered to be more appropriate in lowland landscapes, which are usually more complex and varied than uplands, and where there are generally smaller scale features such as trees and buildings that provide a 'scale reference' against a turbine. Conversely, upland landscapes are generally simpler in character, larger in scale and there are fewer human scale reference features, meaning that larger turbines are more easily accommodated (see SNH guidance, 2009).

Turbine size for installed or consented commercial windfarms in Scotland varies from ca. 55m to blade tip at the original Hagshaw Hill to a current maximum of 147m. However, considerably smaller turbines are now commonly installed for the non-commercial scale micro generation schemes. Current consents within Orkney vary from many turbines of under 20m height to 116m at Burgar Hill on Mainland.

In this study we have classified five blade tip height categories from 'small' to 'very large' which would have differing relationships with the scale and character of the landscape and with one another. These are listed in Table 5.1 below.

There is a significant range of available commercial turbine sizes. However even the smaller commercial turbines are very much larger than any other common vertical object in the landscape, such as a house or trees, with only electricity pylons (typically 25-50m tall) coming close in size. Even the medium size of turbine falls within this height bracket and is therefore significantly taller than most trees and buildings. Furthermore, by being kinetic structures, the visual prominence of turbines is increased relative to existing static features. In this respect smaller turbines may be more noticeable as their blades rotate more rapidly than those of large turbines.

The small domestic scale turbines (<20m) are however closer to the heights of common visual references such as houses and trees and their landscape and visual impacts tend to be much more localised due to localised screening and backclothing by landforms and trees.

Table 5.1. Turbine Size Categories in This Study

Size Category	Blade Tip Height	Typical Use
Small	Turbines less than 20m in height	Typically used for domestic schemes
Small-Medium	Turbines 20m to <30m in height	Typically used for domestic and farm schemes
Medium	Turbines 30m to <50m in height	Typically used for farm and industrial schemes
Large	Turbines 50m to <80m in height	Single turbine schemes and smaller turbines used in commercial schemes
Very Large	Turbines 80m to <125m in height	Typical turbines used in commercial windfarms but also on some single turbine schemes

SNH considers that smaller turbines can be used to mitigate landscape impacts in a lowland situation with a smaller scale landscape pattern and scale indicators. As it has to be balanced against losses in output, size reduction should be used in specific cases where a clearly identified benefit can be achieved. The following are criteria by which this may be judged:

- mitigating significant landscape or visual impacts on a highly valued or sensitive receptor;
- avoiding an adverse scale relationship with a landform or other key landscape element or feature;
- allowing an intervening landform and/or forest to screen views of turbines from certain receptors; or
- achieving a significant reduction in overall visibility by virtue of relationship to surrounding landform and trees.

Where reduction in impact would be a matter of degree rather than a clear quantitative change the benefits are less clear cut.

SNH guidance also recommends that where two or more developments are in close proximity to one another, turbines of a similar size should be used. The use of significantly different turbine sizes within a single windfarm or between two windfarms or turbine developments in close proximity can otherwise lead to adverse visual and scale effects which increase the appearance of clutter, or create odd perspectives when seen from certain viewpoints.

5.1.2 Turbine Design

Variations in size aside, the design of wind turbines can vary considerably. This is particularly the case with smaller turbines under ca. 50m in height. The main variations affecting appearance of wind turbines are:

- two or three bladed
- solid or lattice tower
- shape/ size of nacelle
- proportion of blade length to tower height
- hub faces into or away from the wind direction
- colour

Other factors such as tower and blade shape tend to be more subtle but in combination can lead to a significant difference in appearance, as the difference between the two turbines below demonstrates:

Enercon and Siemens turbines have different nacelles, blades and towers leading to significant differences in appearance

Colour is an issue that is a more important variable in smaller turbines. Colour choice for larger commercial turbines has settled on a neutral light grey with slight variations in lighter or darker shade between developments. It is generally agreed that this colour range is most likely to reduce the prominence of turbines when seen under the most prevalent atmospheric conditions.

In the case of smaller turbines there is more variation in colour and more likelihood of being seen against land rather than sky. In particular many small turbines are white, which increases their prominence when seen from a distance, particularly seen against land.

A 47m high turbine seen from several kilometres distance reflects the evening light, contrasting with the dark backdrop of trees and grassland

Choices of turbine design, including colour, are of potential significance when considering the effects of individual turbines or wider cumulative effects on the landscape.

5.1.3 Windfarm Size

There is no current 'accepted' classification of commercial windfarm sizes in Scotland. Existing and proposed wind energy developments vary in turbine numbers and turbine sizes; from single small turbines to over 200 large turbines. Individual turbines vary in size from below 15m to more than 140m, with maximum outputs from a few kW to greater than 3MW.

To place Orkney within context, it is worth considering the wider Scottish pattern of wind energy development. Table 5.2 below refers to small, medium, large etc. size wind energy developments. For clarity we have adopted wind energy development size categories related wherever possible to published guidance or planning application procedures.

Table 5.2. Wind Energy Development Size Categories

Size Category	Size Criteria	Planning Criteria/ Illustrative Examples
Small	A development of 3 or fewer turbines.	As defined by SNH guidance on assessment of small scale wind energy development (*SNH 2012*)
Small/Medium	A windfarm of more than 3 turbines up to 20MW output	*E.g. Between 4 turbines over 50m and 10x2MW turbines or 6x3MW turbines*
Medium	A windfarm between 20MW and 50MW output	Windfarms up to 50MW are dealt with as local planning authority applications. *E.g. Between 7x3MW and 16x3MW turbines*
Large	Windfarms greater than 50MW output	Windfarms over 50MW are Section 36 Applications dealt with by Scottish Ministers. *A minimum size of 20x2.5MW or 17x3MW turbines*
Very Large	Windfarms greater than 100MW output	*A minimum size of 50 turbines over 125m tall*

5.1.4 Turbine Numbers and Landscape Impacts

Wind turbines considered out of their landscape context are usually simple, aerodynamic and functional structures that many consider to have a clear aesthetic of 'form following function' in their design. Landscape and visual impact issues relate primarily to their scale and potential incongruity in a landscape rather than to the aesthetics of the turbine design. In this case, the number of turbines in a wind energy development has a bearing on the visual image of the development that extends well beyond the landscape area that it physically covers:

- Small clusters of turbines still express the aesthetics of the individual turbines and the blade movement of each turbine is discernible. The cluster is seen as a discrete item within a landscape, becoming a significant feature but generally not dominating or changing the character of a large area.
- In large groupings of turbines there is area coverage of the landscape, rather than a discrete grouping. The individual turbines usually become lost in a mass, blade movements are perceived across the whole area and there is a more 'cluttered' appearance.
- As turbine numbers increase it is increasingly difficult to design a wind energy development such that overlap and clustered alignments are avoided when seen from surrounding viewpoints. Design mitigation becomes a matter of avoiding excessive clutter, skylining and proximity to sensitive receptors rather than creating aesthetically balanced groupings

It is recognised that these qualities grade into one another depending on the exact size of development (e.g. 3, 6, 12, 20, 50, 100+ turbines) and on how the turbines are grouped (e.g. in mass groupings or in lines along ridges). Nevertheless, to the extent that they are more easily contained and definable, single turbines and smaller windfarms would have a disproportionately lesser influence on the landscape than large windfarms and are less likely to dominate areas and blur boundaries between landscape types.

In small groupings, odd numbers of turbines (i.e. 1, 3 or 5) usually present a more balanced composition than even numbers, unless there is a strong regular pattern or line in the landscape to which the turbines can be related.

5.2 Turbine Layout

The layout of turbines within a windfarm is a critical consideration. Whilst the optimum layout, including turbine separation distances and position in relation to the prevailing wind will relate to maximising output, there will be other practicalities. Thus turbine layout may vary according to turbine numbers, the availability of land, topography, access and numerous environmental constraints. These factors are taken into consideration during the windfarm design development process in which the overall aesthetic of the windfarm is considered.

Layouts should relate to landforms and patterns in the landscape and present a coherent image from the surrounding viewpoints. Thus in lowland landscapes with a strong geometric pattern the turbines may be organised in lines of a grid, whereas in the case of a distinct landform such as a ridge or coastline they may be arranged in a curved line following the landform. In upland landscapes turbines may be arranged in a more organic pattern, following ridgelines or clustered around rounded hilltops. Attention should be paid to the relationship of outer turbines in large groups ensuring that there are no 'outliers' creating an untidy or disorganised appearance.

When two or more developments are in close proximity or a windfarm is being expanded there can be cumulative issues relating to site layout if these are clearly contrasting (e.g. a geometric layout adjacent to an organic layout). Such developments should be designed to achieve a harmonious layout and relationship.

5.3 Windfarm Distribution

5.3.1 Pattern of Windfarm Development

When considering cumulative impacts of turbines and wind energy developments it is not just the number of turbines in the landscape that affects impacts but also the development pattern. This has an effect on the ability of the landscape to absorb change and on visual receptors. The dispersal of the turbines in small groups has some advantages in that each grouping is less dominant within the landscape and presents a less cluttered visual image. There is also less likelihood of 'swamping' landscapes and blurring the boundaries between different landscape types and features if there are distinct gaps between clusters of wind turbines. However, the increased number of windfarms or turbine clusters also means that there is an increased likelihood of seeing a windfarm or turbine and at closer proximity than if the turbines were concentrated into fewer locations.

The trend in Scotland is for the concentration of wind turbines into fewer, larger, windfarms. This arises initially via large windfarm proposals and then through the later extension of many existing windfarms. The pattern may also play out on a wider regional scale or 'clusters and spaces' where groups of windfarms lie within large areas separated by significant areas without turbines.

The cluster and space pattern has become increasingly diluted by the recent proliferation of smaller micro generation schemes and single turbines which relate more to the location of small scale consumers than to regional landscapes. In Orkney this pattern of cluster and space is not as well defined as other parts of Scotland, and spatial planning may be required to ensure an uncontrolled proliferation of turbines does not completely dominate the landscape.

5.3.2 Separation Distances between Turbines and Windfarms

Separation distance between turbines and windfarms has a bearing on how they are perceived together and within the landscape, particularly in relation to defining the limits of cumulative development. A clear visual separation between two or more windfarms can be achieved by a certain physical distance. This distance would depend on the size and number of the turbines or windfarms, the type of landscape(s) in which they are located and the degree to which they affect the character of the landscape.

Considering this in simple terms, turbines have both a direct effect on the landscape in which they lie and an indirect effect on the surrounding area. Therefore, although two turbines or windfarms may be separated by some distance and seen as clearly separate, the landscape in which they lie may be considered to be dominated by turbines. Only beyond a certain distance would the intervening landscape be considered to retain its original character, separating the two turbine dominated landscapes areas.

Table 2.1 develops this concept further by considering the effects of multiple wind energy developments and describes cumulative development thresholds. Further to a capacity assessment, an acceptable limit to development within a landscape area may be agreed (e.g. *Landscape with Occasional Wind Turbines* or *Wind Turbine Landscape*). The accepted level of development would then be achieved by consenting a combination of turbine sizes, windfarm sizes and separation distances between groupings, relating to the scale and character of the landscape (i.e. its capacity for that degree of development).

As an example a large scale upland plateau landscape accommodating a number of windfarms would be considered a *Wind Turbine Landscape* if the windfarms are large or very large, the topography is subordinate in scale to the turbines and the windfarms are separated by distances less than their typical extents. If the topography has a relief that is clearly greater than the turbine heights, and/or the windfarms are smaller and the separation between the windfarms is clearly greater than their extents, the landscape may be considered a *Landscape with Wind Turbines.* Finally a lowland landscape which is small in scale, with many small scale reference features, may easily be dominated by wind turbines. In this case the objective may be to limit development to a *Landscape with Occasional Wind Turbines* by allowing only small clusters of smaller turbines separated by substantial distances and with cumulative visibility reduced by localised tree or landform screening.

In each case different scales and patterns of landscape and development would require different turbine sizes, groupings and separation distances to lead to a particular windfarm landscape type. Such an approach has been adopted in this study and sizes and separation distances are recommended and explained in Chapter 6.

5.3.3 Distribution in Relation to Landscape Type

As discussed above, some landscape types have less capacity for development than others. In this case it would be appropriate to consider the relative merits of guiding development to the areas most capable of accommodating development, or to directing different types and scales of development to the areas most suited to each. Subject to the specific impacts of any particular proposal, this would reduce the potential for the most significant and adverse landscape impacts. It would also restrict the more developed wind turbine landscape types to a more clearly defined range of landscapes, thereby reducing the perception of unplanned proliferation of wind farms throughout a local authority area.

In strategic terms the established and evolving pattern of development should be taken into consideration as it reflects a clear rationale driven partly by landscape, visual and amenity issues (sensitive or valuable landscapes, proximity to settlements and recreational areas) and partly by technical issues (available land, available grid capacity, wind speed). This suggests that the number, size and distribution of further development should be considered very carefully in order to maintain differences in character between the uplands, the coast and the lowlands.

Also, in accordance with the guidance *Designing Windfarms in the Landscape* (SNH, 2009), consideration should be given to preserving areas in which no development is yet located or consented. These can provide significant gaps between clusters of wind turbines in which their visual influence is minimal. This again will reinforce distinctiveness between landscapes.

APPENDIX 6: WIND TURBINES IN ORKNEY

Wind Turbine Database as at July 2013 (Permitted & Proposed) Showing Turbine Height Bands (grey = very large; red = large; orange = medium/large; yellow = medium; small = green).

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Burgar Hill, Evie	2	116	80m+	Moorland Hills	Mainland
Spurness, Sanday	2	105	80m+	Undulating Island Pasture	Sanday
Spurness, Sanday, Orkney	5	100	80m+	Undulating Island Pasture	Sanday
West Hill, Flotta	1	100	80m+	Low Moorland	Flotta
Burgar Hill (Land Near), Evie	4	98	80m+	Moorland Hills	Mainland
Holodyke (Land Near), Dounby	1	70	50 to <80m	Moorland Hills	Mainland
Gallo Hill, Westray	1	77	50 to <80m	Undulating Island Pasture	Westray
Sandy Banks, Eday, Orkney	1	77	50 to <80m	Inclined Coastal Pastures	Eday
Burgar Hill (site of disused Howden 300 WTG), Evie	1	76	50 to <80m	Moorland Hills	Mainland
Bu Wind Farm (Land Near), Stronsay	3	75	50 to <80m	Low Moorland	Stronsay
Hoy Community Turbine (Land Near), Ore Brae, Hoy, Orkney	2	74	50 to <80m	Moorland Hills	Hoy
Northfield (Land Near), Burray	1	70	50 to <80m	Whaleback Island Landscapes	Burray
Akla (Land Near), Orphir, Orkney	1	67	50 to <80m	Moorland Hills	Mainland
Barns Of Ayre, Deerness, Orkney, KW17 2QJ	3	67	50 to <80m	Undulating Island Pasture	Mainland
Berriedale, South Ronaldsay	1	67	50 to <80m	Plateau Heaths and Pasture	South Ronaldsay
Crowness Business Park (Site 3) (Land Near), Hatston Industrial Estate, Kirkwall	1	67	50 to <80m	Rolling Hill Fringe	Mainland
Gallowhill, Westray	2	67	50 to <80m	Undulating Island Pasture	Westray
Howe (Land Near), Shapinsay	1	67	50 to <80m	Ridgeline Island Landscapes	Shapinsay
Kingarly (Land Near), Rousay	1	67	50 to <80m	Moorland Hills	Rousay
Ore Brae, Hoy	1	67	50 to <80m	Inclined Coastal Pastures	Hoy
Rennibister (Land Near), Firth, Orkney	1	67	50 to <80m	Inclined Coastal Pastures	Mainland
Rothiesholm Head (Land Near), Stronsay	1	67	50 to <80m	Low Moorland	Stronsay
Savisgarth, Evie	5	67	50 to <80m	Moorland Hills	Mainland
Upper Stove (Land Near), Deerness	1	67	50 to <80m	Undulating Island Pasture	Mainland
Work Farm (Land Near), Work Road, St Ola, Orkney	2	67	50 to <80m	Low Island Pastures	Mainland
Newark (Land Near), Skelwick, Westray, Orkney	1	60	50 to <80m	Ridgeline Island Landscapes	Westray
Trumland Farm, Rousay, KW17 2PU	1	50	50 to <80m	Inclined Coastal Pastures	Rousay
Herston Head (Land Near), South Ronaldsay	1	47	30 to <50m	Cliff Landscapes	South Ronaldsay
New Holland (Land Near), Stratheast Road, Holm, Orkney, KW17 2SA	1	47	30 to <50m	Plateau Heaths and Pasture	Mainland
Dale Spot Hill (Land Near), Kirkwall, Orkney, KW15 1SX	1	47	30 to <50m	Plateau Heaths and Pasture	Mainland
Ludenhill Farm (Land Near), Stoneymildars, Swanney, Orkney, KW17 2NR	1	47	30 to <50m	Coastal Hills and Heath	Mainland
Southfield (Land Near), Burray, Orkney, KW17 2TA	1	47	30 to <50m	Whaleback Island Landscapes	Burray
Swanbister (Land Near), Orphir, Orkney	1	47	30 to <50m	Enclosed Bay Landscapes	Mainland
Hammer, Skelwick, Westray, Orkney, KW17 2DE	1	47	30 to <50m	Ridgeline Island Landscapes	Westray
Cleat (Land Near), Work Road, St. Ola, Orkney, KW15 1UF	1	40	30 to <50m	Low Island Pastures	Mainland
Fea, Holm, Orkney, KW17 2SA	1	40	30 to <50m	Coastal Basins	Mainland
Gill Pier (Land Near), Westray, Orkney, KW17 2DL	1	40	30 to <50m	Low Island Pastures	Westray
Nearhouse, Rousay, Orkney, KW17 2PT	1	40	30 to <50m	Inclined Coastal Pastures	Rousay
Orkney Auction Mart (Land Near), Grainshore Road, Kirkwall, Orkney, KW15 1FL	2	40	30 to <50m	Rolling Hill Fringe	Mainland

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Rinibar (Land Near), Hoxa, South Ronaldsay, Orkney, KW17 2TW	2	40	30 to <50m	Cliff Landscapes	South Ronaldsay
Banks (Land Near), Sourin, Rousay, Orkney	1	39	30 to <50m	Inclined Coastal Pastures	Rousay
Scapa (Land Near), St Ola, Orkney	1	35	30 to <50m	Plateau Heaths and Pasture	Mainland
Hunton (Land Near), Stronsay, Orkney, KW17 2AE	1	33	30 to <50m	Ridgeline Island Landscapes	Stronsay
Lochend (Land Near), Westray, Orkney	1	33	30 to <50m	Loch Basins	Westray
Mount Pleasant (Land Near) Haybrake Road South Ronaldsay Orkney KW17 2TJ	1	30	20 to <30m	Plateau Heaths and Pasture	South Ronaldsay
South Ronaldsay	1	28	20 to <30m	Plateau Heaths and Pasture	South Ronaldsay
Towerhill (Land Near), St Ola, Orkney, KW17 1SR	1	28	20 to <30m	Coastal Basins	Mainland
Appietown (Land Near), Rendall, Orkney, KW17 2PB	1	27	20 to <30m	Inclined Coastal Pastures	Mainland
Arwick (Land Near), Evie	1	27	20 to <30m	Isolated Coastal Knolls	Mainland
Backakelday (Land Near), Holm, Orkney, KW17 2RY	2	27	20 to <30m	Inclined Coastal Pastures	Mainland
Berriedale (Land Near), Westray, Orkney, KW17 2DN	1	27	20 to <30m	Low Island Pastures	Westray
Berriedale Farm (Land Near), South Ronaldsay, Orkney, KW17 2TQ	2	27	20 to <30m	Inclined Coastal Pastures	South Ronaldsay
Braehead (Land Near), Toab, Orkney, KW17 2QG	1	27	20 to <30m	Coastal Basins	Mainland
Branstone (Land Near), Westray, Orkney	1	27	20 to <30m	Ridgeline Island Landscapes	Westray
Breckquoy (Land Near), Toab, Orkney, KW17 2QG	1	27	20 to <30m	Coastal Basins	Mainland
Broland (Land Near), Rousay, Orkney, KW17 2PR	2	27	20 to <30m	Coastal Basins	Rousay
Bryameadow Farm (Land Near), Bryameadow Road, Sandwick, Orkney, KW17 2JH	1	27	20 to <30m	Loch Basins	Mainland
Burness (Land Near), Firth, Orkney, KW17 2ET	2	27	20 to <30m	Coastal Basins	Mainland
Burness (Land Near), Westray, Orkney, KW17 2DW	1	27	20 to <30m	Loch Basins	Westray
Cott (Land Near), Rousay, Orkney, KW17 2PT	2	27	20 to <30m	Inclined Coastal Pastures	Rousay
Cruan (Land Near), Cruan Road, Firth, Orkney	1	27	20 to <30m	Moorland Hills	Mainland
Mainland	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Eastabist (Land Near), Dounby, Orkney	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Easthouse (Land Near), Shapinsay, Orkney, KW17 2EB	1	27	20 to <30m	Ridgeline Island Landscapes	Shapinsay
Elsness (Land Near), Sanday, Orkney, KW17 2BL	1	27	20 to <30m	Coastal Sand Landscapes	Sanday
Estaben (Land Near), Redland Road, Firth, Orkney	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Farafield (Land Near), Durkadale Road, Birsay, Orkney, KW17 2JD	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Fribo (Land Near), Westray, Orkney, KW17 2DP	1	27	20 to <30m	Undulating Island Pasture	Westray
Garth Farm (Land Near), South Ronaldsay, Orkney	1	27	20 to <30m	Plateau Heaths and Pasture	South Ronaldsay
Grand View (Land Near), Stratheast Road, Holm, Orkney, KW17 2SA	1	27	20 to <30m	Plateau Heaths and Pasture	Mainland
Heatherhouse Farm (Land Near), Tankerness, Orkney, KW17 2QS	1	27	20 to <30m	Low Island Pastures	Mainland
Heatherquoy (Land Near), Inganess, St Ola, Orkney, KW15 1SR	1	27	20 to <30m	Coastal Basins	Mainland
Henley (Land Near), Evie, Orkney, KW17 2PE	1	27	20 to <30m	Isolated Coastal Knolls	Mainland
Hindatoon (Land Near), Harray, Orkney, KW17 2JT	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Hobbister (Land Near), Orphir, Orkney, KW17 2RA	1	27	20 to <30m	Moorland Hills	Mainland
Howe Farm (Land Near), Harray, Orkney, KW17 2JR	2	27	20 to <30m	Rolling Hill Fringe	Mainland
Howe Farm (Land Near), Stromness, Orkney, KW16 3JU	1	27	20 to <30m	Inclined Coastal Pastures	Mainland
Huan (Land Near), Sandwick, Orkney, KW17 3LS	1	27	20 to <30m	Coastal Basins	Mainland
Kirbister (Land Near), Stronsay, Orkney, KW17 2AG	1	27	20 to <30m	Plateau Heaths and Pasture	Stronsay
Laga (Land Near), Evie, Orkney, KW17 2PF	1	27	20 to <30m	Isolated Coastal Knolls	Mainland
Lingoe Cottage (Land Near), Orphir, Orkney, KW17 2RE	2	27	20 to <30m	Inclined Coastal Pastures	Mainland
Little Wards (Land Near), Kings Road, Longhope, Orkney, KW16 3PA	1	27	20 to <30m	Whaleback Island Landscapes	Mainland
Lower Stanger (Land Near), Birsay, Orkney, KW17 2LZ	1	27	20 to <30m	Loch Basins	Mainland

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Maesquoy Farm (Land Near), Harray, Orkney, KW17 2LE	1	27	20 to <30m	Loch Basins	Mainland
Midgarth (Land Near), Stronsay, Orkney, KW17 2AT	1	27	20 to <30m	Ridgeline Island Landscapes	Stronsay
Nessbreck (Land Near, Harray, Orkney, KW17 2LQ	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Nether Corston (Land Near), Corston Road, Harray, Orkney, KW17 2LQ	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Netherfiold (Land Near), Aikerness Road, Westray, Orkney, KW17 2DN	1	27	20 to <30m	Low Island Pastures	Westray
New Holland (Land Near), Holm, Orkney, KW17 2SA	1	27	20 to <30m	Plateau Heaths and Pasture	Mainland
Orkney Mechanical Services Ltd (Land Near), Crowness Road, Kirkwall, Orkney, KW15 1RG	1	27	20 to <30m	Urban and Rural Development	Mainland
Queenamuckle (Land Near), Rendall, Orkney, KW17 2EZ	1	27	20 to <30m	Inclined Coastal Pastures	Mainland
Quoybond (Land Near), South Ronaldsay, Orkney, KW17 2RL	1	27	20 to <30m	Plateau Heaths and Pasture	South Ronaldsay
Mainland	1	27	20 to <30m	Plateau Heaths and Pasture	Mainland
Raveyhall (Land Near), Loons Road, Birsay, KW17 2NA	1	27	20 to <30m	Coastal Hills and Heath	Mainland
Redland (Land Near), Redland Road, Firth, Orkney	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Seal Cottage (Land Near), Orphir, Orkney, KW17 2RB	1	27	20 to <30m	Enclosed Bay Landscapes	Mainland
Skaill (Land Near), Orphir, Orkney, KW16 9XB	1	27	20 to <30m	Moorland Hills	Mainland
Skaill Cottage (Land Near), Deerness, Orkney, KW17 2QJ	1	27	20 to <30m	Undulating Island Pasture	Mainland
Snippigar (Land Near), Deerness, Orkney, KW17 2QQ	2	27	20 to <30m	Undulating Island Pasture	Mainland
Souley (Land Near), Orphir, Orkney, KW17 2RB	1	27	20 to <30m	Rolling Hill Fringe	Mainland
Stembister (Land Near), Toab, Orkney, KW17 2QG	1	27	20 to <30m	Coastal Basins	Mainland
The Nev (Land Near), St. Margaret's Hope, South Ronaldsay, Orkney, KW17 2RJ	2	27	20 to <30m	Cliff Landscapes	South Ronaldsay
Tifter, Westray, Orkney, KW17 2DR	1	27	20 to <30m	Undulating Island Pasture	Westray
Upperquoys (Land Near), Evie, Orkney, KW17 2PH	1	27	20 to <30m	Isolated Coastal Knolls	Mainland
Vestrafiold (Land Near), Quoyloo, Sandwick, Orkney, KW16 3LU	1	27	20 to <30m	Coastal Hills and Heath	Mainland
Waterha' (Land Near), Sandwick, Orkney	1	27	20 to <30m	Loch Basins	Mainland
West Bu (Land Near), Holm, Orkney, KW17 2RY	1	27	20 to <30m	Inclined Coastal Pastures	Mainland
Whinber (Land Near), Westray, Orkney, KW17 2DN	1	27	20 to <30m	Loch Basins	Westray
Wilderness (Land Near), Holm, Orkney, KW17 2RY	1	27	20 to <30m	Coastal Basins	Mainland
East Hammer (Land Near), Skelwick, Westray, Orkney KW17 2DE	1	27	20 to <30m	Ridgeline Island Landscapes	Westray
Blackawall Cottage (Land Near), Flotta	1	27	20 to <30m	Low Moorland	Flotta
Whinber (Land Near), The Links Road, Westray, Orkney, KW17 2DN	1	26	20 to <30m	Low Island Pastures	Westray
The Steading, Langskaill, Westray, Orkney, KW17 2DR	2	24	20 to <30m	Undulating Island Pasture	Westray
Bain (Land Near), Sandwick, Orkney, KW16 3LP	1	22	20 to <30m	Loch Basins	Mainland
Breck (Land Near), Old Finstown Road, St Ola, Orkney, KW15 1TR	2	22	20 to <30m	Rolling Hill Fringe	Mainland
Corse (Land Near), St Ola, Orkney, KW15 1RZ	2	22	20 to <30m	Rolling Hill Fringe	Mainland
Cotland (Land Near), St Ola, Orkney, KW15 1SF	1	22	20 to <30m	Rolling Hill Fringe	Mainland
Easter Greenigoe (Land Near), Orphir, Orkney, KW17 1SG	1	22	20 to <30m	Rolling Hill Fringe	Mainland
Quoydale (Land Near), Hoy, Orkney, KW16 3NJ	1	22	20 to <30m	Inclined Coastal Pastures	Hoy
Raveyhall (Land Near), Birsay, KW17 2NA	1	22	20 to <30m	Coastal Hills and Heath	Mainland
Salwick (Land Near), Brims, Longhope, Orkney, KW16 3NZ	1	22	20 to <30m	Inclined Coastal Pastures	Mainland
The Knowe (Land Near), Sanday, Orkney, KW17 2AZ	1	22	20 to <30m	Coastal Sand Landscapes	Sanday
Upper Instabillie (Land Near), Quoyloo, KW16 3LS	1	22	20 to <30m	Coastal Basins	Mainland
Rowland (Land Near), Holm, Orkney, KW17 2RY	2	22	20 to <30m	Coastal Basins	Mainland
Water Treatment Works (Land Near), Stronsay, Orkney, KW17 2AR	3	22	20 to <30m	Ridgeline Island Landscapes	Stronsay
Braehead (Land Near), St Margaret's Hope, Orkney, KW17 2TL	1	21	20 to <30m	Coastal Basins	Mainland
Braemar (Land Near), Deerness, Orkney, KW17 2QH	1	21	20 to <30m	Undulating Island Pasture	Mainland

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Cauldhame (Land Near), Stromness, Orkney	1	21	20 to <30m	Rolling Hill Fringe	Mainland
Drill Cottage (Land Near), Shapinsay, Orkney, KW17 2DZ	1	21	20 to <30m	Ridgeline Island Landscapes	Shapinsay
Lower Arsdale, Evie, Orkney, KW17 2NN	1	21	20 to <30m	Coastal Hills and Heath	Mainland
Meron (Land Near), Harray, Orkney	1	21	20 to <30m	Rolling Hill Fringe	Mainland
Midhouse (Land Near), Mirbister, Harray, Orkney, KW17 2HZ	1	21	20 to <30m	Rolling Hill Fringe	Mainland
Millbrae (Land Near), Sanday, Orkney, KW17 2AZ	1	21	20 to <30m	Low Island Pastures	Sanday
Myre (Land Near), South Ronaldsay, Orkney, KW17 2RH	1	21	20 to <30m	Coastal Basins	South Ronaldsay
Nigley Farm (Land Near), Evie, Orkney, KW17 2PH	1	21	20 to <30m	Inclined Coastal Pastures	Mainland
Northskaill (Land Near), Sanday, Orkney, KW17 2AZ	1	21	20 to <30m	Coastal Sand Landscapes	Sanday
Ranganoust (Land Near), Orphir, Orkney, KW17 2RB	1	21	20 to <30m	Inclined Coastal Pastures	Mainland
Redland (Land Near), Stromness, Orkney, KW16 3LN	2	21	20 to <30m	Loch Basins	Mainland
Smogen (Land Near), Orphir, Orkney, KW17 2RE	1	21	20 to <30m	Rolling Hill Fringe	Mainland
Standpretty (Land Near), Evie, Orkney, KW17 2PE	2	21	20 to <30m	Isolated Coastal Knolls	Mainland
Upper Scapa (Land Near), St Ola, Orkney, KW15 1SD	1	21	20 to <30m	Rolling Hill Fringe	Mainland
Whitehall Manse (Land Near), Stronsay	1	21	20 to <30m	Ridgeline Island Landscapes	Stronsay
Goltaquoy, Westray, Orkney	1	20	20 to <30m	Ridgeline Island Landscapes	Westray
Barebreck (Land Near), South Ronaldsay, Orkney, KW17 2RH	1	20	20 to <30m	Coastal Basins	South Ronaldsay
Cott Farm, Rousay, KW17 2PT	1	20	20 to <30m	Inclined Coastal Pastures	Rousay
Cotterochan (Land Near), Westray	1	20	20 to <30m	Ridgeline Island Landscapes	Westray
East Kirbist, Westray, KW17 2DR	1	20	20 to <30m	Undulating Island Pasture	Westray
Eastbrae, Stromness, KW16 3HS	1	20	20 to <30m	Coastal Granite Pastures	Mainland
Eday Heritage & Visitor Centre, Old Baptist Chapel, Eday	1	20	20 to <30m	Peatland Basins	Eday
Gairy, Westray, Orkney, KW17 2DR	1	20	20 to <30m	Undulating Island Pasture	Westray
Gill Pier (Land Near), Westray	1	20	20 to <30m	Low Island Pastures	Westray
Ingashowe (Land Near), Firth, Orkney, KW15 1TX	1	20	20 to <30m	Inclined Coastal Pastures	Mainland
Kingshouse, Harray, KW17 2LQ	1	20	20 to <30m	Rolling Hill Fringe	Mainland
Kirkbrae, Land Near), Swanson Road, Westray, Orkney	1	20	20 to <30m	Ridgeline Island Landscapes	Westray
Linnabreck, Marwick, Birsay	1	20	20 to <30m	Coastal Hills and Heath	Mainland
NE Corner Of Football Field, Burray	1	20	20 to <30m	Coastal Basins	Burray
Nedyar, Rousay	1	20	20 to <30m	Loch Basins	Rousay
Pierowall Fish, Broughton, Westray, Orkney, KW17 2DA	1	20	20 to <30m	Ridgeline Island Landscapes	Westray
Skaill, Rendall, Orkney, KW17 2EX	1	20	20 to <30m	Coastal Basins	Mainland
St Andrews Playing Fields, St Andrews	1	20	20 to <30m	Coastal Basins	Mainland
Sweenalay, Rendall	1	20	20 to <30m	Coastal Basins	Mainland
The Caravan (Land Near), Inganess, St Ola, Orkney, KW15 1SE	1	20	20 to <30m	Coastal Basins	Mainland
The Commodore, Holm, KW17 2RU	1	20	20 to <30m	Coastal Basins	Mainland
Tuquoy, Westray, KW17 2DR	2	20	20 to <30m	Undulating Island Pasture	Westray
West Langamay, Sanday	1	20	20 to <30m	Coastal Sand Landscapes	Sanday
West Of The Lighthouse, North Ronaldsay	1	20	20 to <30m	Rolling Hill Fringe	North Ronaldsay
Gerraquoy, Grimness, South Ronaldsay, Orkney	1	20	<20m	Inclined Coastal Pastures	South Ronaldsay
Ocklester, Holm, Orkney	3	20	<20m	Plateau Heaths and Pasture	Mainland
Wasbister (Land Near), South Ronaldsay, Orkney	1	19	<20m	Plateau Heaths and Pasture	South Ronaldsay
Colligarth Farm (Land Near), Sanday, Orkney, KW17 2BW	2	19	<20m	Low Island Pastures	Sanday
Corston (Land Near), Harray, Orkney, KW17 2LQ	1	19	<20m	Rolling Hill Fringe	Mainland

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Cott (Land Near), Rendall, Orkney, KW17 2EZ	3	19	<20m	Isolated Coastal Knolls	Mainland
Culdigo (Land Near), Westray, Orkney, KW17 2DN	1	19	<20m	Low Island Pastures	Westray
Daviston (Land Near), Holm, Orkney, KW17 2RZ	1	19	<20m	Coastal Basins	Mainland
Drydale (Land Near), Kirbister, Stromness, Orkney, KW16 3HU	1	19	<20m	Rolling Hill Fringe	Mainland
Fea (Land Near), Tankerness, Orkney	1	19	<20m	Low Island Pastures	Mainland
Feaval (Land Near), Birsay, Orkney, KW17 2LT	1	19	<20m	Coastal Hills and Heath	Mainland
Garth (Land Near), St. Ola, Orkney, KW15 1SS	1	19	<20m	Coastal Basins	Mainland
Garth Farm (Land Near), St Ola, Orkney, KW15 1SS	3	19	<20m	Coastal Basins	Mainland
Georth (Land Near), Evie, Orkney, KW17 2PJ	3	19	<20m	Inclined Coastal Pastures	Mainland
Hermisgarth & Drummonds (Land Near), Sanday, Orkney, KW17 2AZ	2	19	<20m	Low Island Pastures	Sanday
Holland (Land Near), St. Ola, Orkney, KW15 1TB	1	19	<20m	Low Island Pastures	Mainland
Hyval (Land Near), North Dyke, Sandwick, Orkney, KW16 3LS	1	19	<20m	Coastal Basins	Mainland
Kebro (Land Near), Orphir, Orkney, KW16 3HD	1	19	<20m	Rolling Hill Fringe	Mainland
Linday (Land Near), Sandwick, Orkney, KW16 3JE	3	19	<20m	Loch Basins	Mainland
Lyron (Land Near), Rendall, Orkney, KW17 2NZ	1	19	<20m	Coastal Basins	Mainland
Midhouse (Land Near), Holm, Orkney, KW17 2RY	1	19	<20m	Coastal Basins	Mainland
Newhouse (Land Near), Swannay, Orkney, KW17 2NR	1	19	<20m	Coastal Hills and Heath	Mainland
North Unigarth (Land Near), Quoyloo, Sandwick, Orkney, KW16 3LT	1	19	<20m	Coastal Hills and Heath	Mainland
Northmire (Land Near), Sanday, Orkney, KW17 2BA	1	19	<20m	Undulating Island Pasture	Sanday
Odinsgarth, Sanday, Orkney, KW17 2BN	1	19	<20m	Low Island Pastures	Sanday
Powdykes (Land Near), Broughton, Westray, Orkney, KW17 2DA	2	19	<20m	Undulating Island Pasture	Westray
Purtabreck (Land Near), North Ronaldsay, Orkney, KW17 2BE	1	19	<20m	Low Island Pastures	North Ronaldsay
Quivals (Land Near), Sanday, Orkney, KW17 2AY	1	19	<20m	Low Island Pastures	Sanday
Quoyloo Cottage (Land Near), Quoyloo, Orkney, KW16 3LU	2	19	<20m	Coastal Hills and Heath	Mainland
Ramsquoy (Land Near), Stenness, Orkney, KW16 3EZ	2	19	<20m	Inclined Coastal Pastures	Mainland
Sangar (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	19	<20m	Low Island Pastures	North Ronaldsay
Skelbister (Land Near), Orphir, Orkney, KW16 3HD	2	19	<20m	Moorland Hills	Mainland
South Hammer (Land Near), Westray, Orkney, KW17 2SR	4	19	<20m	Undulating Island Pasture	Westray
Stenso, Evie, Orkney, KW17 2PJ	3	19	<20m	Inclined Coastal Pastures	Mainland
Stoneymilders (Land Near), Swannay, Orkney, KW17 2NR	1	19	<20m	Coastal Hills and Heath	Mainland
Stove (Land Near), Sanday, Orkney, KW17 2BA	1	19	<20m	Undulating Island Pasture	Sanday
Turriedale (Land Near), Evie, Orkney, KW17 2PJ	1	19	<20m	Inclined Coastal Pastures	Mainland
Upper Berryhill (Land Near), Marness, St Ola, Orkney, KW15 1SF	2	19	<20m	Rolling Hill Fringe	Mainland
Wattle (Land Near), Birsay, Orkney, KW17 2LS	2	19	<20m	Coastal Hills and Heath	Mainland
Westbrough (Land Near), Sanday, Orkney, KW17 2AY	1	19	<20m	Low Island Pastures	Sanday
Altair (Land Near), Orphir, Orkney, KW17 2RE	1	19	<20m	Inclined Coastal Pastures	Mainland
Bankburn House (Land Near), South Ronaldsay, Orkney, KW17 2TG	1	19	<20m	Coastal Basins	South Ronaldsay
Berstane Villa (Land Near), Berstane Loan, Kirkwall, Orkney, KW15 1TA	1	19	<20m	Plateau Heaths and Pasture	Mainland
Breckan Farm (Land Near), Finstown, Orkney, KW17 2EG	1	19	<20m	Urban and Rural Development	Mainland
Dale (Land Near), Stromness, Orkney, KW16 3JP	1	19	<20m	Inclined Coastal Pastures	Mainland
East Massater (Land Near), South Ronaldsay, Orkney, KW17 2RN	1	19	<20m	Plateau Heaths and Pasture	South Ronaldsay
Hillhouse (Land Near), Westray, Orkney, KW17 2DD	1	19	<20m	Ridgeline Island Landscapes	Westray
Lowerhouse (Land Near), Burray, Orkney	1	19	<20m	Inclined Coastal Pastures	Burray
Salties, North Loch Road, Sanday, Orkney, KW17 2BP	1	19	<20m	Coastal Sand Landscapes	Sanday

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Suquoy Farm (Land Near), South Ronaldsay, Orkney	4	19	<20m	Plateau Heaths and Pasture	South Ronaldsay
West Breckan (Land Near), Holm, Orkney, KW17 2RU	2	19	<20m	Coastal Basins	Mainland
Gaira (Land Near), South Ronaldsay, Orkney	2	19	<20m	Coastal Basins	South Ronaldsay
Green (Land Near), Ruah Road, Eday	1	19	<20m	Low Island Pastures	Eday
Innisgarth (Land Near), Orquil Road, Orphir, Orkney, KW15 1SA	1	19	<20m	Rolling Hill Fringe	Mainland
Lower Lidda (Land Near), Tankerness, Orkney	1	19	<20m	Low Island Pastures	Mainland
Oddie (Land Near), Stronsay, Orkney, KW17 2AT	1	19	<20m	Low Island Pastures	Stronsay
Quoys (Land Near), Woodstock Road, Holm, Orkney	1	19	<20m	Inclined Coastal Pastures	Mainland
Samsons Lane Farm (Land Near), Stronsay, Orkney, KW17 2AE	1	19	<20m	Ridgeline Island Landscapes	Stronsay
Scruit (Land Near), Lochside, Swannay, Orkney	2	19	<20m	Loch Basins	Mainland
Smoogro House (Land Near), Orphir, Orkney	1	19	<20m	Inclined Coastal Pastures	Mainland
7 Links (Land Near), Rackwick Road, Westray, Orkney, KW17 2DN	1	18	<20m	Low Island Pastures	Westray
Barebrecks (Land Near), Germiston Road, Orphir, Orkney, KW16 3HD	2	18	<20m	Loch Basins	Mainland
Binscarth House (Land Near), Firth, Orkney, KW17 2JZ	1	18	<20m	Rolling Hill Fringe	Mainland
Bockan (Land Near), Sandwick, Orkney, KW16 3HY	1	18	<20m	Loch Basins	Mainland
Burgar House, Evie, Orkney, KW17 2NJ	1	18	<20m	Inclined Coastal Pastures	Mainland
Cauldhame, South Ronaldsay, Orkney	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Cools (Land Near), South Ronaldsay, Orkney, KW17 2RJ	1	18	<20m	Coastal Basins	South Ronaldsay
Crook, South Ronaldsay, Orkney, KW17 2RN	1	18	<20m	Coastal Hills and Heath	South Ronaldsay
Curcum (Land Near), Swannay, Orkney, KW17 2NS	2	18	<20m	Coastal Hills and Heath	Mainland
Eastersands (Land Near), Deerness, Orkney	1	18	<20m	Undulating Island Pasture	Mainland
Eastside (Land Near), Twatt, Orkney, KW17 2JD	1	18	<20m	Rolling Hill Fringe	Mainland
Farewell (Land Near), St Margaret's Hope, Orkney, KW17 2TW	1	18	<20m	Coastal Basins	Mainland
Flaws (Land Near), Evie, Orkney, KW17 2PH	2	18	<20m	Inclined Coastal Pastures	Mainland
Flotterston Cottage(Land Near), Sandwick, Orkney, KW16 3LP	1	18	<20m	Loch Basins	Mainland
Grindigar (Land Near), Deerness, Orkney, KW17 2QJ	1	18	<20m	Undulating Island Pasture	Mainland
Halcro, South Ronaldsay, Orkney, KW17 2RW	2	18	<20m	Plateau Heaths and Pasture	South Ronaldsay
Hangaback (Land Near), The Bu, Orphir, Orkney, KW17 2RD	1	18	<20m	Inclined Coastal Pastures	Mainland
Hools, South Ronaldsay, Orkney, KW17 2RH	1	18	<20m	Coastal Basins	South Ronaldsay
Horsick (Land Near), Toab, Orkney, KW17 1QU	1	18	<20m	Coastal Basins	Mainland
Howes (Land Near), Deerness, Orkney, KW17 2QJ	1	18	<20m	Undulating Island Pasture	Mainland
Inganess Road (Land Near), St Ola, Orkney	1	18	<20m	Coastal Basins	Mainland
Ingsay (Land Near), Swannay, Birsay, Orkney, KW17 2NS	2	18	<20m	Coastal Hills and Heath	Mainland
Innister (Land Near), Wasbister Road, Rousay, Orkney, KW17 2PS	1	18	<20m	Coastal Hills and Heath	Rousay
Address no provided	1	18	<20m	Loch Basins	Rousay
Lynnside (Land Near), Lyde Road, Harray, Orkney, KW17 2LA	2	18	<20m	Rolling Hill Fringe	Mainland
Newhall, Deerness, Orkney	1	18	<20m	Undulating Island Pasture	Mainland
North Unigarth (Land Near), Quoyloo, Sandwich, Orkney, KW16 3LT	1	18	<20m	Coastal Hills and Heath	Mainland
Quoydandy, Inganess Road, St. Ola, Orkney, KW15 1SR	1	18	<20m	Plateau Heaths and Pasture	Mainland
Roadside (Land Near), Rapness, Westray, Orkney, KW17 2DE	2	18	<20m	Ridgeline Island Landscapes	Westray
Roy (Land Near), Cornquoy Road, Holm, Orkney, KW17 2SD	1	18	<20m	Low Moorland	Mainland
Schoolha' (Land Near), Costa, Evie, Orkney, KW17 2NJ	3	18	<20m	Inclined Coastal Pastures	Mainland
Shannon, St. Margaret's Hope, Orkney, KW17 2TH	1	18	<20m	Inclined Coastal Pastures	Mainland
Tigh-Na-Ha, Holm, Orkney, KW17 2RX	1	18	<20m	Coastal Basins	Mainland

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Too (Land Near), Rousay, Orkney, KW17 2PS	1	18	<20m	Moorland Hills	Rousay
Twingness (Land Near), North Ronaldsay, Orkney, KW17 2BE	3	18	<20m	Low Island Pastures	North Ronaldsay
Westquoy (Land Near), Germiston Road, Orphir, Orkney	1	18	<20m	Loch Basins	Mainland
Windbreck (Land Near), Evie	2	18	<20m	Isolated Coastal Knolls	Mainland
Breckquoy (Land Near), Deerness, Orkney	1	18	<20m	Undulating Island Pasture	Mainland
Gairy, Westray, KW17 2DR	1	18	<20m	Undulating Island Pasture	Westray
Wheems, Eastside, South Ronaldsay	2	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Anvil Cottage (Land Near), Stromness, Orkney, KW16 3JF	1	18	<20m	Coastal Hills and Heath	Mainland
Ashleigh (Land Near), Dounby, Orkney, KW17 2JA	2	18	<20m	Loch Basins	Mainland
Avelshay Farm (Land Near), Rousay, Orkney, KW17 2PR	2	18	<20m	Inclined Coastal Pastures	Rousay
Aviedale (Land Near), Rendall, Orkney, KW17 2PB	1	18	<20m	Inclined Coastal Pastures	Mainland
Ayre (Land Near), Coo Road, Sanday, Orkney, KW17 2AY	1	18	<20m	Low Island Pastures	Sanday
Banks Cottage, Rousay, Orkney, KW17 2PT	1	18	<20m	Inclined Coastal Pastures	Rousay
Barebrecks (Land Near), Firth, Orkney, KW17 2ET	1	18	<20m	Coastal Basins	Mainland
Bayview, Birsay, KW17 2LR	1	18	<20m	Coastal Hills and Heath	Mainland
Bigland (Land Near), Rousay, Orkney, KW17 2PR	1	18	<20m	Coastal Basins	Rousay
Birsay Outdoor Centre (Land Near), Birsay, Orkney	1	18	<20m	Loch Basins	Mainland
Braes, Rousay, Orkney, KW17 2PR	1	18	<20m	Moorland Hills	Rousay
Breek (Land Near), Frotoft, Rousay, Orkney, KW17 2PT	1	18	<20m	Inclined Coastal Pastures	Rousay
Brettovale, Knarston, Dounby, KW17 2HZ	1	18	<20m	Rolling Hill Fringe	Mainland
Buan House (Land Near), Firth, Orkney, KW17 2ET	1	18	<20m	Inclined Coastal Pastures	Mainland
Burns O'Myre (Land Near), Scorradale Road , Ophir, Orkney, KW17 2RF	1	18	<20m	Moorland Hills	Mainland
Chalmersquoy (Land Near), Westray	1	18	<20m	Ridgeline Island Landscapes	Westray
Chapelbrae (Land Near), Shapinsay, Orkney	1	18	<20m	Ridgeline Island Landscapes	Shapinsay
Churchill (Land Near), Holm, Orkney, KW17 2SD	1	18	<20m	Inclined Coastal Pastures	Mainland
Clouster (Land Near), Bu Road, Cairston, Stromness, Orkney, KW16 3JH	1	18	<20m	Inclined Coastal Pastures	Mainland
Clouster, Stromness, Orkney	1	18	<20m	Inclined Coastal Pastures	Mainland
Craebreck (Land Near), Holm, Orkney, KW17 2RX	1	18	<20m	Coastal Basins	Mainland
Crismo Farm (Land Near), Costa, Evie, Orkney, KW17 2NW	1	18	<20m	Loch Basins	Mainland
Cruannie (Land Near), Sourin, Rousay, Orkney, KW17 2PR	1	18	<20m	Coastal Basins	Rousay
Curlews, Deerness, Orkney, KW17 2QJ	1	18	<20m	Undulating Island Pasture	Mainland
Curquoy Farm, Rousay, Orkney, KW17 2PR	2	18	<20m	Peatland Basins	Rousay
Cuttpool, Deerness, KW17 2QJ	1	18	<20m	Undulating Island Pasture	Mainland
Daisybank (Land Near), Deerness, Orkney, KW17 2QL	1	18	<20m	Undulating Island Pasture	Mainland
East Mire (Land Near), Sanday, Orkney, KW17 2BA	1	18	<20m	Undulating Island Pasture	Sanday
Eastaquoy (Land Near), Harray, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Eastaquoy (Land Near), Harray, Orkney, KW17 2LA	1	18	<20m	Rolling Hill Fringe	Mainland
Easthouse (Land Near), Holm, Orkney, KW17 2SD	2	18	<20m	Inclined Coastal Pastures	Mainland
Easthouse, Toab, Orkney, KW17 2QG	1	18	<20m	Coastal Basins	Mainland
Eday Hostel, Eday	1	18	<20m	Peatland Basins	Eday
Egilsay Community Hall, Egilsay, KW17 2QD	1	18	<20m	Whaleback Island Landscapes	Egilsay
Ervadale Cottage (Land Near), Rousay, Orkney, KW17 2PR	1	18	<20m	Coastal Basins	Rousay
Gaira, South Ronaldsay, KW17 2RL	1	18	<20m	Coastal Basins	South Ronaldsay
Galilee, Sanday, KW17 2BP	1	18	<20m	Coastal Sand Landscapes	Sanday

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Gerraquoy, Grimness, South Ronaldsay, KW17 2TH	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Gossigair (Land Near), South Ronaldsay, Orkney, KW17 2RN	2	18	<20m	Coastal Hills and Heath	South Ronaldsay
Grandon (Land Near), Finstown, Orkney, KW17 2EP	1	18	<20m	Inclined Coastal Pastures	Mainland
Greenfield, Carness Road, Kirkwall, KW15 1UE	1	18	<20m	Low Island Pastures	Mainland
Greenwell (Land Near), Burray, Orkney, KW17 2SX	1	18	<20m	Inclined Coastal Pastures	Burray
Hall Of Tankerness, Tankerness, KW17 2QS	3	18	<20m	Low Island Pastures	Mainland
Hatston Slip (Land Near), Grainshore Road, Hatston Industrial Estate, Kirkwall, Orkney	1	18	<20m	Urban and Rural Development	Mainland
Haughead, St. Ola, Orkney, KW15 1TR	1	18	<20m	Moorland Hills	Mainland
Hestwall House, Holm, KW17 2RY	1	18	<20m	Coastal Basins	Mainland
Housegarth (Land Near), Quoyloo, Sandwick, Orkney, KW16 3LY	1	18	<20m	Coastal Hills and Heath	Mainland
Howan, Egilsay, KW17 2QD	1	18	<20m	Whaleback Island Landscapes	Egilsay
Howdis Meadow (Land Near), Rousay, Orkney, KW17 2PR	2	18	<20m	Coastal Basins	Rousay
Howequoy, Holm, KW17 2RY	1	18	<20m	Coastal Basins	Mainland
Hundasaeter, Twatt, KW17 2JD	1	18	<20m	Loch Basins	Mainland
Hundland, Papa Westray, KW17 2BU	1	18	<20m	Ridgeline Island Landscapes	Papa Westray
Hurtiso, Rousay, KW17 2PR	1	18	<20m	Coastal Basins	Rousay
Insa-Bi-Seatter (Land Near), Hundland Road, Birsay, Orkney, KW17 2LP	1	18	<20m	Loch Basins	Mainland
Kenwood (Land Near), Harray, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Kirkhouse (Land Near), South Ronaldsay, Orkney, KW17 2RH	1	18	<20m	Coastal Basins	South Ronaldsay
Land Between Little Hackland & Newark, Rendall, Orkney	4	18	<20m	Isolated Coastal Knolls	Mainland
Linneth, Harray, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Lower Cottiscarth (Land Near), Rendall, Orkney, KW17 2PA	1	18	<20m	Rolling Hill Fringe	Mainland
Lower Linklater, Twatt, Sandwick, Orkney	1	18	<20m	Loch Basins	Mainland
Lynnfield, Hunclett Road, Holm, Orkney, KW17 2RZ	1	18	<20m	Coastal Basins	Mainland
Maltbarn (Land Near), Eday, Orkney, KW17 2AA	1	18	<20m	Low Island Pastures	Eday
Midhouse, Evie, Orkney, KW17 2NW	1	18	<20m	Inclined Coastal Pastures	Mainland
Millhouse (Land Near), Eday, Orkney, KW17 2AB	1	18	<20m	Enclosed Bay Landscapes	Eday
Mossbank (Land Near), St Ola, Kirkwall, Orkney, KW15 1SE	2	18	<20m	Rolling Hill Fringe	Mainland
Mosside, Westray, Orkney	1	18	<20m	Ridgeline Island Landscapes	Westray
Muckle Crofty (Land Near), Tankerness, Orkney	1	18	<20m	Coastal Basins	Mainland
Mucklehouse (Land Near), Stews Road, South Ronaldsay, Orkney, KW17 2RJ	1	18	<20m	Plateau Heaths and Pasture	South Ronaldsay
Mucklehouse (Land Near), Swannay, Orkney	1	18	<20m	Loch Basins	Mainland
Mussaquoy (Land Near), Deerness, Orkney, KW17 2QQ	2	18	<20m	Undulating Island Pasture	Mainland
Naversdale, Orphir	1	18	<20m	Moorland Hills	Mainland
Nesshudden (Land Near), Papa Westray	1	18	<20m	Ridgeline Island Landscapes	Papa Westray
Newbigging (Land Near), Rapness, Westray, Orkney, KW17 2DE	1	18	<20m	Ridgeline Island Landscapes	Westray
Newbigging (Land Near), Westside Road, Eday, Orkney, KW17 2AA	1	18	<20m	Inclined Coastal Pastures	Eday
Newfield, Orphir, KW17 2RE	1	18	<20m	Inclined Coastal Pastures	Mainland
Newton, Evie, Orkney, KW17 2NL	1	18	<20m	Coastal Hills and Heath	Mainland
Nisthouse (Land Near), Evie, Orkney, KW17 2PF	2	18	<20m	Inclined Coastal Pastures	Mainland
Nistigar (Land Near), Westray, Orkney, KW17 2DP	2	18	<20m	Undulating Island Pasture	Westray
North Panhouse, Eday, Orkney, KW17 2AB	1	18	<20m	Inclined Coastal Pastures	Eday
Northfield (Land Near), Holm, Orkney, KW17 2RZ	1	18	<20m	Coastal Basins	Mainland
Northfield Farm (Land Near), Burray, Orkney, KW 17 2SD	1	18	<20m	Coastal Sand Landscapes	Burray

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Northfield, Holm, KW17 2RZ	1	18	<20m	Coastal Basins	Mainland
Ocean View (Land Near), Birsay, Orkney, KW17 2LT	1	18	<20m	Coastal Hills and Heath	Mainland
Orkney Golf Club, Grainbank, Kirkwall, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Orquil Manse (Land Near), Rendall, Orkney	1	18	<20m	Isolated Coastal Knolls	Mainland
Queenamuckle, Rendall, KW17 2EZ	1	18	<20m	Inclined Coastal Pastures	Mainland
Quivals Farm (Land Near), Sanday, Orkney, KW17 2BN	1	18	<20m	Coastal Sand Landscapes	Sanday
Ramray, Graemsay, Orkney, KW16 3NG	1	18	<20m	Whaleback Island Landscapes	Mainland
Rossmyre (Land Near), Grimbister, Firth, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Rowamo (Land Near), Finstown, Orkney, KW17 2EL	1	18	<20m	Moorland Hills	Mainland
Roy, Holm, KW17 2SD	1	18	<20m	Low Moorland	Mainland
Russness (Land Near), Wyre, Orkney, KW17 2QA	1	18	<20m	Whaleback Island Landscapes	Wyre
Sandygill, Orphir, KW17 2RA	1	18	<20m	Enclosed Bay Landscapes	Mainland
Settisgarth, Rendall, Orkney, KW17 2PA	2	18	<20m	Rolling Hill Fringe	Mainland
Skaill (Land Near), Kirk Road, Eday, Orkney, KW17 2AA	1	18	<20m	Inclined Coastal Pastures	Eday
Skaill, Sandwick	1	18	<20m	Enclosed Bay Landscapes	Mainland
Skelday, By Dounby, KW17 2JD	1	18	<20m	Rolling Hill Fringe	Mainland
Skerloom (Land Near), South Ronaldsay, Orkney, KW17 2TJ	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Skirlo (Land Near), Berstane Road, Kirkwall, Orkney	2	18	<20m	Low Island Pastures	Mainland
Sorquoy, South Ronaldsay	1	18	<20m	Plateau Heaths and Pasture	South Ronaldsay
South Breck (Land Near), Firth, KW17 2ET	2	18	<20m	Coastal Basins	Mainland
South Breck (Land Near), Firth, Orkney, KW17 2ET	1	18	<20m	Coastal Basins	Mainland
South Greenigoe, Orphir,	2	18	<20m	Moorland Hills	Mainland
Springwell, Braeswick, Sanday, KW17 2BA	1	18	<20m	Undulating Island Pasture	Sanday
Stonehall, Deerness, Orkney	1	18	<20m	Undulating Island Pasture	Mainland
Stratheast, Holm, Orkney	1	18	<20m	Coastal Basins	Mainland
The Old School, Rendall, Orkney, KW17 2EY	1	18	<20m	Isolated Coastal Knolls	Mainland
The Whins (Land Near), Firth, Orkney, KW17 2HQ	1	18	<20m	Rolling Hill Fringe	Mainland
Twatt Farm, Birsay, KW17 2LN	1	18	<20m	Loch Basins	Mainland
Upper Lidda, Tankerness, Orkney	3	18	<20m	Low Island Pastures	Mainland
Vardabreck (Land Near), St. Ola, Orkney, KW15 1TR	4	18	<20m	Rolling Hill Fringe	Mainland
Varisay (Land Near), St Ola, Orkney, KW15 1SB	1	18	<20m	Rolling Hill Fringe	Mainland
Veltan (Land Near), Swannay, Birsay, Orkney, KW17 2NR	2	18	<20m	Coastal Hills and Heath	Mainland
Walliwall (Land Near), Old Finstown Road, St Ola, Orkney, KW15 1TW	2	18	<20m	Rolling Hill Fringe	Mainland
Warness Park (Land Near), Hatston Pier Road, Hatston Industrial Estate, Kirkwall, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Wart Farm, Warthill Road, Holm, KW17 2SD	1	18	<20m	Plateau Heaths and Pasture	Mainland
West Newbigging, Eday	1	18	<20m	Inclined Coastal Pastures	Eday
Westhouse, The Park, Holm, Orkney, KW17 2SD	1	18	<20m	Inclined Coastal Pastures	Mainland
Wyre Community Hall, Wyre, KW17 2QA	1	18	<20m	Whaleback Island Landscapes	Wyre
Yorvil (Land Near), Frotoft, Rousay, Orkney, KW17 2PT	1	18	<20m	Inclined Coastal Pastures	Rousay
Fetercairn (Land Near), Stenness, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Aikerness (Land Near), Evie, Orkney, KW17 2NH	2	18	<20m	Inclined Coastal Pastures	Mainland
Bow Of Linklater (Land Near), South Ronaldsay, Orkney, KW17 2RN	1	18	<20m	Plateau Heaths and Pasture	South Ronaldsay
Brance (Land Near), Grimness, South Ronaldsay, Orkney, KW17 2TH	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Brims (Land Near), Swannay, Birsay, Orkney	1	18	<20m	Coastal Hills and Heath	Mainland

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Bursie Cottage (Land Near), Ortie Road, Sanday, Orkney	1	18	<20m	Low Island Pastures	Sanday
Carisbrooke (Land Near), St Ola, Orkney, KW15 1TR	1	18	<20m	Rolling Hill Fringe	Mainland
Chanctonbury (Land Near), Gorseness Road, Rendall, Orkney, KW17 2EZ	1	18	<20m	Isolated Coastal Knolls	Mainland
Commons Of Quindry (Land Near), Hoxa Road, St Margaret's Hope, Orkney	1	18	<20m	Coastal Basins	Mainland
Craigielea (Land Near), Harray, Orkney, KW17 2JU	1	18	<20m	Rolling Hill Fringe	Mainland
Croval (Land Near), Sandwick, Orkney, KW16 3LP	1	18	<20m	Loch Basins	Mainland
Dalvenna (Land Near), St Ola, Orkney, KW15 1SF	1	18	<20m	Rolling Hill Fringe	Mainland
Dunroamin (Land Near), Airafea Road, Stronsay, Orkney, KW17 2AF	1	18	<20m	Plateau Heaths and Pasture	Stronsay
Eastlands (Land Near), Greenigoe, St Ola, Orkney, KW15 1SG	1	18	<20m	Moorland Hills	Mainland
Foveran Hotel (Land Near), St Ola, Orkney, KW15 1SF	1	18	<20m	Rolling Hill Fringe	Mainland
Gairsty (Land Near), Quoyloo, Sandwick, Orkney, KW16 3LT	2	18	<20m	Loch Basins	Mainland
Greystone (Land Near), South Ronaldsay, Orkney, KW17 2RW	1	18	<20m	Coastal Basins	South Ronaldsay
Hall Of Heddle (Land Near), Finstown, Orkney	1	18	<20m	Rolling Hill Fringe	Mainland
Hall Of Herston (Land Near), South Ronaldsay, Orkney, KW17 2RH	1	18	<20m	Coastal Basins	South Ronaldsay
Hammerbreck (Land Near), Sanday, Orkney, KW17 2BL	1	18	<20m	Low Island Pastures	Sanday
Hammerfield (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	1	18	<20m	Moorland Hills	Rousay
Holland Farm (Land Near), Firth, Orkney, KW17 2EU	1	18	<20m	Inclined Coastal Pastures	Mainland
Hottit (Land Near), Grimness, South Ronaldsay, Orkney, KW17 2TH	2	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Hunchaquoy (Land Near), Swannay, Orkney, KW17 2NR	2	18	<20m	Coastal Hills and Heath	Mainland
Hunday (Land Near), Stronsay, Orkney	1	18	<20m	Plateau Heaths and Pasture	Stronsay
Kingsdale (Land Near), Firth, Orkney, KW15 1TT	3	18	<20m	Rolling Hill Fringe	Mainland
Krogjar (Land Near), Deerness, Orkney, KW17 2QH	1	18	<20m	Undulating Island Pasture	Mainland
Ladybank (Land Near), Sanday, Orkney	1	18	<20m	Low Island Pastures	Sanday
Lairdshill (Land Near), Moss Road, Holm, Orkney, KW17 2SA	1	18	<20m	Coastal Basins	Mainland
Lyrowall (Land Near), St. Margaret's Hope, South Ronaldsay, Orkney, KW17 2TW	1	18	<20m	Coastal Basins	South Ronaldsay
Manse Bay (Land Near), Aikers Road, South Ronaldsay, Orkney	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Mayfield House (Land Near), St Ola, Orkney, KW15 1SU	1	18	<20m	Plateau Heaths and Pasture	Mainland
Midhouse (Land Near), Fidgarth Road, Birsay, Orkney, KW17 2LR	1	18	<20m	Coastal Hills and Heath	Mainland
Mainland	1	18	<20m	Loch Basins	Mainland
Mill Hope Caravan (Land Near), Eday, Orkney, KW17 2AB	1	18	<20m	Enclosed Bay Landscapes	Eday
Millhouse (Land Near), Deerness, Orkney, KW17 2QH	1	18	<20m	Undulating Island Pasture	Mainland
Miry Park (Land Near), Sanday, Orkney	1	18	<20m	Undulating Island Pasture	Sanday
Mucklehouse (Land Near), Swannay, Orkney, KW17 2NR	1	18	<20m	Coastal Hills and Heath	Mainland
Noltland (Land Near), Noup Road, Westray, Orkney	1	18	<20m	Loch Basins	Westray
North Serrigar (Land Near), South Ronaldsay, Orkney, KW17 2RL	1	18	<20m	Plateau Heaths and Pasture	South Ronaldsay
Old School (Land Near), Shapinsay, Orkney	1	18	<20m	Ridgeline Island Landscapes	Shapinsay
Queena (Land Near), Gorseness, Rendall, Orkney	1	18	<20m	Inclined Coastal Pastures	Mainland
Quoyloo Quarry (Land Near), Quoyloo, Sandwick, Orkney, Kw16 3LT	2	18	<20m	Coastal Hills and Heath	Mainland
Ronaldsvoe (Land Near), South Rondaldsay, Orkney	2	18	<20m	Coastal Basins	Mainland
Sanback, Easting Road, North Ronaldsay, Orkney, KW17 2BG	1	18	<20m	Low Island Pastures	North Ronaldsay
Sandsend (Land Near), Shapinsay, Orkney, KW17 2EB	2	18	<20m	Ridgeline Island Landscapes	Shapinsay
Saville (Land Near), Oyce Road, Sanday, Orkney	1	18	<20m	Coastal Sand Landscapes	Sanday
School House (Land Near), Frotoft, Rousay, Orkney, KW17 2PT	1	18	<20m	Inclined Coastal Pastures	Rousay
Seaquoys (Land Near), Westray, Orkney, KW17 2DN	1	18	<20m	Low Island Pastures	Westray

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Seaquoys, Westray, Orkney	1	18	<20m	Low Island Pastures	Westray
Skelbister (Land Near), Sanday, Orkney, KW17 2BJ	1	18	<20m	Low Island Pastures	Sanday
Skelbrae (Land Near), Sanday, Orkney, KW17 2AZ	1	18	<20m	Coastal Sand Landscapes	Sanday
South Tuan (Land Near), Westray, Orkney, KW17 2DD	1	18	<20m	Ridgeline Island Landscapes	Westray
Stiglister On The Hill (Land Near), Coo Road, Sanday, Orkney	1	18	<20m	Undulating Island Pasture	Sanday
Taftshurie (Land Near), Grimness, South Ronaldsay, Orkney, KW17 2TH	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Teebro (Land Near), Holm, Orkney, KW17 2SA	1	18	<20m	Coastal Basins	Mainland
The Knowe (Land Near), Deerness, Orkney, KW17 2QL	2	18	<20m	Undulating Island Pasture	Mainland
Upper Bigging (Land Near), Greeny Road, Dounby, Orkney, KW17 2HR	2	18	<20m	Loch Basins	Mainland
Upper Breckan (Land Near), Sanday, Orkney	1	18	<20m	Low Island Pastures	Sanday
Upper Stove (Land Near), Deerness, Orkney, KW17 2QJ	1	18	<20m	Undulating Island Pasture	Mainland
Upperhouse (Land Near), Lyde Road, Harray, Orkney, KW17 2LA	1	18	<20m	Rolling Hill Fringe	Mainland
Upperhouse (Land Near), Ortie Road, Sanday, Orkney	1	18	<20m	Coastal Sand Landscapes	Sanday
Vinnabrek (Land Near), Dykeside, Westray, Orkney, KW17 2DW	1	18	<20m	Coastal Hills and Heath	Westray
Westray Care Home, Westray	1	18	<20m	Urban and Rural Development	Westray
Windbreck (Land Near), St Margaret's Hope, Orkney, KW17 2TG	2	18	<20m	Coastal Basins	Mainland
Suiliven (Land Near,) Birsay, Orkney, KW17 2ND	1	18	<20m	Coastal Hills and Heath	Mainland
Inganess Bay (Land Near), St Ola	1	15	<20m	Coastal Basins	Mainland
Hillhead (Land Near), St Ola, Kirkwall, Orkney, KW15 1SX	2	15	<20m	Plateau Heaths and Pasture	Mainland
Salt Water Slap (Land Near), Rackwick, Hoy, Orkney, KW16 3NJ	1	15	<20m	Enclosed Bay Landscapes	Hoy
The Banx (Land Near), St Ola, Kirkwall, Orkney, KW15 1SS	1	15	<20m	Coastal Basins	Mainland
The Hatchery (Land Near), Rackwick, Hoy, Orkney	1	15	<20m	Glaciated Valley	Hoy
Wart Farm (Land Near), Warthill Road, Holm, Orkney, KW17 2SD	1	15	<20m	Plateau Heaths and Pasture	Mainland
Casa Nuestra, Blackhill Road, St. Ola, Orkney, KW15 1FP	1	15	<20m	Rolling Hill Fringe	Mainland
3 Lettan (Land Near), North Loch Road, Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Annabreck (Land Near), Sanday, Orkney	1	15	<20m	Low Island Pastures	Sanday
Appietown, Rendall, KW17 2PB	1	15	<20m	Inclined Coastal Pastures	Mainland
Banks, Frotoft, Rousay	1	15	<20m	Inclined Coastal Pastures	Rousay
Banks, Northside, Birsay	1	15	<20m	Coastal Hills and Heath	Mainland
Barns Of Ayre, Deerness	1	15	<20m	Undulating Island Pasture	Mainland
Beafield (Land Near), Sanday	1	15	<20m	Low Island Pastures	Sanday
Biggings Farm (Land Near), Holm, KW17 2RX	1	15	<20m	Coastal Basins	Mainland
Binscarth Farm, Finstown	1	15	<20m	Rolling Hill Fringe	Mainland
Blackhammer (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Blackhill Cottage, Blackhill Road, St Ola	1	15	<20m	Rolling Hill Fringe	Mainland
Braehead (Land Near), Rousay, Orkney, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Braes, Rousay, KW17 2PR	1	15	<20m	Peatland Basins	Rousay
Braeside (Land Near), Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Brandyquoy (Land Near), St Margaret's Hope, Orkney, KW17 2TJ	1	15	<20m	Plateau Heaths and Pasture	Mainland
Breck (Land Near), Eday, Orkney, KW17 2AA	1	15	<20m	Low Island Pastures	Eday
Breck (Land Near),Stronsay, Orkney	1	15	<20m	Low Island Pastures	Stronsay
Breckowall, Westray	3	15	<20m	Loch Basins	Westray
Bressigarth (Land Near), Bressigarth Road, Sanday, Orkney, KW17 2BW	1	15	<20m	Low Island Pastures	Sanday
Brough (Land Near), Toab, Orkney, KW17 2QG	1	15	<20m	Coastal Basins	Mainland

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Brunthouse, Flotta	1	15	<20m	Low Island Pastures	Flotta
Bu' (Land Near), Wyre, Orkney, KW17 2QA	1	15	<20m	Whaleback Island Landscapes	Wyre
Burrian (Land Near), Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Carness Farm, St Ola	2	15	<20m	Low Island Pastures	Mainland
Carrick Farm (Land Near), Eday, Orkney, KW17 2AB	1	15	<20m	Coastal Basins	Eday
Carrick House (Land Near), Eday, Orkney, KW17 2AB	1	15	<20m	Coastal Basins	Eday
Cavit (Land Near), Wyre, Orkney, KW17 2QA	1	15	<20m	Whaleback Island Landscapes	Wyre
Clickimin (Land Near), Sanday, Orkney, KW17 2AZ	1	15	<20m	Low Island Pastures	Sanday
Crook (Land Near), South Ronaldsay, Orkney	1	15	<20m	Inclined Coastal Pastures	South Ronaldsay
Crudy Farm, Sanday, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Cruesbreck (Land Near), North Ronaldsay, Orkney, KW17 2BE	1	15	<20m	Low Island Pastures	North Ronaldsay
Cruesday (Land Near), Rousay, Orkney, KW17 2PT	1	15	<20m	Inclined Coastal Pastures	Rousay
Deerness Community Centre, Deerness	1	15	<20m	Undulating Island Pasture	Mainland
Deithe (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Dennishill, Easting Road, North Ronaldsay, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Downies (Land Near), Deerness, Orkney	1	15	<20m	Cliff Landscapes	Mainland
Downies, Deerness, KW17 2QJ	2	15	<20m	Cliff Landscapes	Mainland
East Langamay (Land Near), Sanday, Orkney, KW17 2BP	1	15	<20m	Coastal Sand Landscapes	Sanday
Eastaquoy Cottage (Land Near), Harray, Orkney, KW17 2LA	1	15	<20m	Rolling Hill Fringe	Mainland
Eastside, Birsay, KW17 2JD	1	15	<20m	Rolling Hill Fringe	Mainland
Eday Shop, Millbounds, Eday	1	15	<20m	Moorland Hills	Eday
Essaquoy (Land Near), Bigland Road, Rousay, Orkney, KW17 2PR	1	15	<20m	Coastal Basins	Rousay
Everybist (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	2	15	<20m	Moorland Hills	Rousay
Fairview (Land Near), Lowertown Road, South Ronaldsay, Orkney, KW17 2TL	1	15	<20m	Inclined Coastal Pastures	South Ronaldsay
Faroe (Land Near), Sourin Road, Rousay, Orkney, KW17 2PR	1	15	<20m	Peatland Basins	Rousay
Fealquoy, Wasbister, Rousay, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Fersness Farm (Land Near), West Side Road, Eday, Orkney, KW17 2AA	1	15	<20m	Inclined Coastal Pastures	Eday
Findlays Cottage, Breck, Orphir	1	15	<20m	Inclined Coastal Pastures	Mainland
Four Acres, Tankerness	1	15	<20m	Plateau Heaths and Pasture	Mainland
Furrowend, Shapinsay, Orkney	3	15	<20m	Ridgeline Island Landscapes	Shapinsay
Fursan (Land Near), Evie, Orkney	1	15	<20m	Isolated Coastal Knolls	Mainland
Gable End Theatre, Old School, North Walls, KW16 3NX	1	15	<20m	Inclined Coastal Pastures	Mainland
Gallow Hill (Land Near), Sanday, Orkney, KW17 2BN	1	15	<20m	Low Island Pastures	Sanday
Gateside (Land Near), North Ronaldsay, Orkney, KW17 2BE	1	15	<20m	Low Island Pastures	North Ronaldsay
Gerbo (Land Near), North Ronaldsay, Orkney, KW17 2BE	1	15	<20m	Coastal Sand Landscapes	North Ronaldsay
	1	15	<20m	Low Island Pastures	North Ronaldsay
Gleat (Land Near), North Loch Road, Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Greentoft (Land Near), Eday, Orkney, KW17 2AA	1	15	<20m	Inclined Coastal Pastures	Eday
Grieveshouse, Stenness	1	15	<20m	Loch Basins	Mainland
Groatha' (Land Near), Eday, Orkney, KW17 2AA	1	15	<20m	Inclined Coastal Pastures	Eday
Hammer (Land Near), Westray, Orkney, KW17 2DE	1	15	<20m	Ridgeline Island Landscapes	Westray
Helziegitha (Land Near), Wyre, Orkney, KW17 2QA	1	15	<20m	Whaleback Island Landscapes	Wyre
Hestilly, Linklater, South Ronaldsay, KW17 2RN	1	15	<20m	Plateau Heaths and Pasture	South Ronaldsay
Hilldavale, Dykeside, Westray	1	15	<20m	Coastal Hills and Heath	Westray

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Hillhead (Land Near), Sellibister Road, Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Hillside (Land Near), South Ronaldsay, Orkney	2	15	<20m	Coastal Basins	South Ronaldsay
Hooking (Land Near), North Ronaldsay, Orkney, KW17 2BE	2	15	<20m	Coastal Sand Landscapes	North Ronaldsay
Horrie, Toab, KW17 2QU	1	15	<20m	Coastal Basins	Mainland
Horroquoy, Harray	1	15	<20m	Rolling Hill Fringe	Mainland
Howe Farm, Harray	1	15	<20m	Rolling Hill Fringe	Mainland
Hoy Kirk (Land Near), Hoy	1	15	<20m	Inclined Coastal Pastures	Hoy
Hyndgreenie (Land Near), Rue Road, Sanday, Orkney, KW17 2AZ	1	15	<20m	Low Island Pastures	Sanday
Hyval (Land Near), Howaback Road, Dounby, Orkney, KW17 2JA	1	15	<20m	Loch Basins	Mainland
Inner Holm, Stromness	1	15	<20m	Coastal Island	Mainland
Ivybank (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	1	15	<20m	Loch Basins	Rousay
Jericho, Westray	3	15	<20m	Loch Basins	Westray
Kirkgate (Land Near), Westside Road, Rousay, Orkney, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Knowtoo Cottage, Brodgar Road, Sandwick, KW16 3HY	1	15	<20m	Loch Basins	Mainland
Land South East Of Harbour Authority Building, Scapa, KW15 1SD	1	15	<20m	Plateau Heaths and Pasture	Mainland
Langskaill, Rousay, KW17 2PS	1	15	<20m	Moorland Hills	Rousay
Lapwing, Egilsay	1	15	<20m	Whaleback Island Landscapes	Egilsay
Lighthouse (Land Near), North Ronaldsay, Orkney, KW17 2BG	3	15	<20m	Low Island Pastures	North Ronaldsay
Lightkeepers House, Copinsay, Orkney	1	15	<20m	Holms	Mainland
Lochside (Land Near), Sanday, Orkney, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Meadow (Land Near), Sanday, Orkney, KW17 2BA	1	15	<20m	Undulating Island Pasture	Sanday
Midmyre (Land Near), Sanday, Orkney	1	15	<20m	Undulating Island Pasture	Sanday
Millcroft (Land Near), Mill Bay Road, Eday, Orkney, KW17 2AB	1	15	<20m	Enclosed Bay Landscapes	Eday
Nearhouse (Land Near), Rendall, KW17 2NZ	2	15	<20m	Coastal Basins	Mainland
Nessbreck, Harray, Orkney	1	15	<20m	Rolling Hill Fringe	Mainland
Neven (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
New Church (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Newark Farm (Land Near), Guith Road, Eday, Orkney, KW17 2AB	1	15	<20m	Inclined Coastal Pastures	Eday
North House (Land Near), Eday, Orkney, KW17 2AB	1	15	<20m	Inclined Coastal Pastures	Eday
Odinstone, Shapinsay,	1	15	<20m	Ridgeline Island Landscapes	Shapinsay
Old Church (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Old Manse, Brinnigar, Innertown, Stromness	1	15	<20m	Inclined Coastal Pastures	Mainland
Old Post Office (Land Near), Sanday, KW17 2BP	1	15	<20m	Low Island Pastures	Sanday
Old Quoyscottie (Land Near),Cloke Road, Birsay, Orkney	1	15	<20m	Rolling Hill Fringe	Mainland
Onziebust (Land Near), Russness Road, Wyre, Orkney, KW17 2QA	1	15	<20m	Whaleback Island Landscapes	Wyre
Otterswick (Land Near), Sanday, Orkney	1	15	<20m	Low Island Pastures	Sanday
Parkhouse, Deerness	1	15	<20m	Undulating Island Pasture	Mainland
Pictail, Deerness, KW17 2QL	1	15	<20m	Undulating Island Pasture	Mainland
Quality Street, Westray	2	15	<20m	Loch Basins	Westray
Quarry House (Land Near), Stymilders Road, Firth, Orkney, KW17 2JY	1	15	<20m	Rolling Hill Fringe	Mainland
Queena (Land Near), Birsay, Orkney, KW17 2NS	1	15	<20m	Coastal Hills and Heath	Mainland
Quoyhallon, Quoyloo, Stromness	2	15	<20m	Coastal Basins	Mainland
Rannabrae, Rapness, Westray	1	15	<20m	Ridgeline Island Landscapes	Westray
Redbanks (Land Near), Veness Road, Eday, Orkney, KW17 2AA	1	15	<20m	Low Island Pastures	Eday

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Roeberry (Land Near), South Ronaldsay, Orkney	1	15	<20m	Cliff Landscapes	South Ronaldsay
Rousay Community Hall, Rousay, KW17 2PR	1	15	<20m	Peatland Basins	Rousay
Rousay Manse, Rousay	1	15	<20m	Inclined Coastal Pastures	Rousay
Rysa Lodge, Lyness, Hoy	1	15	<20m	Inclined Coastal Pastures	Hoy
Sandback (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Schoolhouse (Land Near), Sanday, Orkney	1	15	<20m	Low Island Pastures	Sanday
Scomuir, Holm, KW17 2SA	1	15	<20m	Coastal Basins	Mainland
Sholtisquoy (Land Near), North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Shortie (Land Near), Evie, Orkney, KW17 2PJ	1	15	<20m	Inclined Coastal Pastures	Mainland
Snippigar, Deerness	1	15	<20m	Undulating Island Pasture	Mainland
South Cott (Land Near), Eday, Orkney, KW17 2AB	1	15	<20m	Inclined Coastal Pastures	Eday
South House (Land Near), Guith Road, Eday, Orkney, KW17 2AB	2	15	<20m	Inclined Coastal Pastures	Eday
South Lodge (Land Near), Sanday, Orkney, KW17 2BL	1	15	<20m	Coastal Sand Landscapes	Sanday
Southfield (Land Near), Sanday, Orkney, KW17 2BL	1	15	<20m	Coastal Sand Landscapes	Sanday
Spengar, Sandwick, KW16 3JD	1	15	<20m	Loch Basins	Mainland
Springbank (Land Near), South Ronaldsay, Orkney, KW17 2TJ	1	15	<20m	Inclined Coastal Pastures	South Ronaldsay
Stackald (Land Near), Eday, Orkney, KW17 2AA	1	15	<20m	Low Island Pastures	Eday
Swinsty (Land Near), Westside Road, Eday, Orkney KW17 2AA	1	15	<20m	Inclined Coastal Pastures	Eday
Telegraph Cottage (Land Near), Sanday, Orkney, KW17 2AY	1	15	<20m	Low Island Pastures	Sanday
Templehall (Land Near), Sanday, Orkney, KW17 2BN	1	15	<20m	Low Island Pastures	Sanday
Terramagus (Land Near), Rousay, Orkney, KW17 2PT	1	15	<20m	Inclined Coastal Pastures	Rousay
The Mill (Land Near), Wyre, Orkney, KW17 2QA	1	15	<20m	Whaleback Island Landscapes	Wyre
The Old Tractor Shed (Land Near), Sanday, Orkney, KW17 2BP	1	15	<20m	Coastal Sand Landscapes	Sanday
Upper Cornquoy (Land Near), Holm	1	15	<20m	Inclined Coastal Pastures	Mainland
Upper House, Lyde Road, Harray, KW17 2LA	1	15	<20m	Rolling Hill Fringe	Mainland
Uppertown (Land Near), Orphir, orkney	1	15	<20m	Moorland Hills	Mainland
Vincoin (Land Near), Vincoin Road, North Ronaldsay, Orkney, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Vincoin, Vincoin Road, North Ronaldsay, KW17 2BG	1	15	<20m	Low Island Pastures	North Ronaldsay
Vindon (Land Near), Firth, Orkney, KW17 2EU	1	15	<20m	Moorland Hills	Mainland
Warsett (Land Near), Warsett Road, Egilsay, Orkney, KW17 2QD	1	15	<20m	Whaleback Island Landscapes	Egilsay
West Manse, Westray, KW17 2DR	1	15	<20m	Undulating Island Pasture	Westray
West Thrave (Land Near), Rue Road, Sanday, Orkney	1	15	<20m	Low Island Pastures	Sanday
White Pow, Westray, Orkney	1	15	<20m	Undulating Island Pasture	Westray
Whitehowe Water Pumping House, Papa Westray, KW17 2BU	1	15	<20m	Ridgeline Island Landscapes	Papa Westray
Windbreck, South Ronaldsay, Orkney	1	15	<20m	Coastal Basins	South Ronaldsay
Heathfield, Old Finstown Road, St. Ola, Orkney	8	14	<20m	Rolling Hill Fringe	Mainland
Westray Parish Church (Land Near), Kirkbrae, Westray, Orkney, KW17 2DB	1	14	<20m	Ridgeline Island Landscapes	Westray
Cott of Ness, Tankerness, KW17 2QS	1	13	<20m	Low Island Pastures	Mainland
Ervadale Cottage (Land Near), Rousay, Orkney, KW17 2PL	1	13	<20m	Peatland Basins	Rousay
Iona, Shapinsay	1	13	<20m	Ridgeline Island Landscapes	Shapinsay
Kewing, Rendall	1	13	<20m	Inclined Coastal Pastures	Mainland
Near Elwickbank (Land Near), Shapinsay	1	13	<20m	Ridgeline Island Landscapes	Shapinsay
Norston Cottage, Quoyloo	1	13	<20m	Coastal Basins	Mainland
The Rocket Hoose (Land Near), Deerness, Orkney, KW17 2QG	1	13	<20m	Coastal Sand Landscapes	Mainland

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Craebreck Farm (Land Near), Skaill, Nether Breck, Holm	1	12	<20m	Coastal Basins	Mainland
Teeoquoy, Stenness, Orkney	2	12	<20m	Inclined Coastal Pastures	Mainland
Rapness Terminal, Westray	1	11	<20m	Ridgeline Island Landscapes	Westray
Trumland Farm, (Site 1), Rousay	1	9	<20m	Inclined Coastal Pastures	Rousay
Trumland Farm, (Site 2), Rousay	1	9	<20m	Inclined Coastal Pastures	Rousay
Flaughton Hill, Eday, Orkney	1	9	<20m	Moorland Hills	Eday
Greenfield, Eday, KW17 2AB	1	8	<20m	Inclined Coastal Pastures	Eday
Corse (Land Near), Rousay	1	8	<20m	Inclined Coastal Pastures	Rousay
Kisumu, Bu Road, Stromness	1	7	<20m	Inclined Coastal Pastures	Mainland
Brinian Kirk, Rousay, KW17 2PU	1	6	<20m	Inclined Coastal Pastures	Rousay
Mayback, Papa Westray, Orkney, KW17 2BU	1	3	<20m	Ridgeline Island Landscapes	Papa Westray
4 Grimmond Place, Finstown	1		<20m	Urban and Rural Development	Mainland
Clickhimin, South Ronaldsay	1		<20m	Cliff Landscapes	South Ronaldsay
Ervadale / Brendale (Land Near), Rousay	1		<20m	Coastal Basins	Rousay
Gerraquoy, Grimness, South Ronaldsay	1		<20m	Inclined Coastal Pastures	South Ronaldsay
Lochside, Westray	1		<20m	Ridgeline Island Landscapes	Westray
Longhouse, Dam Of Hoxa, St Margaret's Hope	1		<20m	Coastal Sand Landscapes	Mainland
Police Compound, Bruna Fea, Stromness	1		<20m	Inclined Coastal Pastures	Mainland
Sanday School, Sanday	1		<20m	Low Island Pastures	Sanday
Skinnest (Land Near), Papa Westray	1		<20m	Ridgeline Island Landscapes	Papa Westray
Squash Courts (Land Near), Hatston Industrial Estate, Kirkwall	1		<20m	Urban and Rural Development	Mainland
St Mary's Village (Land Near), Holm	1		<20m	Coastal Basins	Mainland
Wideford Hill Comms Tower, St Ola	1		<20m	Moorland Hills	Mainland

Application Wind Turbines as at July 2013 Showing Turbine Height Bands (grey = very large; red = large; orange = medium/large; yellow = medium).

Development Address	No of Turbines	Average Height to Tip (m)	Height Category	Landscape Type	Island
Holodyke	3	67	50 to <80m	Rolling Hill Fringe	West Mainland
Ore Brae	2	67	50 to <80m	Moorland Hills	Hoy
Rysa Lodge	3	67	50 to <80m	Moorland Hills	Hoy
Rysa	1	47	30 to <50m	Moorland Hills	Hoy
The Hatcheries	1	40	30 to <50m	Loch Basins	West Mainland
Crantit Dairy	1	40	30 to <50m	Plateau Heaths and Pasture	East Mainland
Scapa	1	35	30 to <50m	Plateau Heaths and Pasture	East Mainland
Skerryvoe	1	27	20 to <30m	Inclined Coastal Pastures	West Mainland
Quoys	1	20	20 to <30m	Undulating Island Pasture	East Mainland
Skea	1	19	<20m	Undulating Island Pasture	East Mainland
Lurand	1	18	<20m	Low Island Pastures	North Ronaldsay
New Brimbanks	1	18	<20m	Peatland Basins	Eday
Lodge	1	18	<20m	Ridgeline Island Landscapes	Stronsay
Russland	1	18	<20m	Coastal Basins	Stronsay
East Thorn	1	18	<20m	Ridgeline Island Landscapes	Westray
Westend	1	18	<20m	Enclosed Bay Landscapes	Hoy
Bruntland	1	18	<20m	Inclined Coastal Pastures	Burray
Limbo	1	18	<20m	Inclined Coastal Pastures	South Ronaldsay
Stenaquoy	1	15	<20m	Inclined Coastal Pastures	Eday
Upper Stenaquoy	1	15	<20m	Inclined Coastal Pastures	Eday