

Design and Access Statement

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1 Introduction and Background

1.1 Background

1.1.1 This Design and Access Statement (DAS) describes the design process and the resultant development proposals for the Orkney Community Wind Farm – Quanterness (the Proposed Development), located 2.7 km north-west from the boundary of Kirkwall Town Centre. The DAS accompanies the planning application submitted to Orkney Islands Council (OIC) seeking permission to construct and operate the Proposed Development.

1.1.2 The purpose of this DAS is to provide information on the principles and approach that have guided the design process. This DAS demonstrates how the site and its surroundings have been fully assessed to ensure that the final design solution is the most suitable for the site. It describes the starting point for the Proposed Development design, and subsequent alterations to the layout that were made in response to the issues that were identified through the consultation and appraisal process. Details are also provided on the access arrangements to the site, including disabled access.

1.1.3 This DAS should be read in conjunction with the *Environmental Impact Assessment Report* (EIAR), which also contains information on the design strategy (Chapter 2), predicted landscape and visual effects (Chapter 6), traffic and access related effects (Chapter 12), and includes a Transport Assessment (Appendix 12.1).

1.1.4 *The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013* requires a DAS to be prepared in support of all ‘national’ and ‘major’ developments. As the Proposed Development is expected to have a total installed capacity of approximately 28.8 megawatts (MW), it will be considered a ‘major’ development by OIC. Planning guidance notes on Design and Access Statements have been taken into consideration when preparing this DAS, notably Planning Advice Note (PAN) 68. PAN 68 states that a DAS should include:

- background information;
- site details;
- site and area appraisals;
- design principles;
- public involvement;
- programme; and
- design solution.

2 Background Information

2.1 Name of the Scheme

2.1.1 The Proposed Development is called Orkney’s Community Wind Farm – Quanterness.

2.2 The Applicant

2.2.1 The Applicant is Orkney Islands Council who are looking to develop three wind farms within the Orkney Islands, of which the Proposed Development is one. ‘Orkney’s Community Wind Farm Project’ could generate significant income and community benefit for Orkney. All profit would stay in the islands, enabling the Applicant to preserve and enhance key services that local people value and depend upon and providing a foundation for communities to drive transformational projects of their own.

2.2.2 A Local Authority taking the decision to become a developer of wind energy projects is an unusual decision, but it is felt vital that the Applicant now takes an active ‘developer approach’ to energy projects in Orkney. Not only does this allow the Applicant to maximise the resources available to

them in the islands to support services and projects for local people at a time of significant central funding reductions, but it also allows them to contribute significantly and in a meaningful way to allow Orkney's world-renowned local energy industry to survive and thrive through a new grid connection.

2.2.3 Orkney Islands Council (OIC) has therefore taken a number of decisions leading to the decision to become a developer of onshore wind farms in Orkney:

- As early as September 2013 OIC endorsed the principle of OIC establishing, developing or investing in an onshore wind farm project.
- At OIC Policy and Resources committee meeting of 21 June 2016 OIC approved the principle of OIC assuming the role of a project developer of onshore wind farm projects in Orkney.
- At general meeting of the OIC 4th July 2017 OIC resolved that a process should be undertaken to identify property owners in Orkney with large sites able to accommodate scale wind generation who would wish to sell or lease land for the purpose of a wind development.
- At OIC Policy and Resources committee meeting of 28th November 2017 it was recommended that OIC proceed to planning consent stage with development of a project on Hoy, at a maximum scale of approximately 108MW.
- At general meeting of the OIC of 5th March 2019 it was agreed that OIC should focus on developing all projects which have a realistic chance of achieving planning permission by the end of 2020 and therefore contributing to the Needs Case for a new grid connection to Orkney, namely Hoy, Faray, and Quanterness.

2.3 Advisors

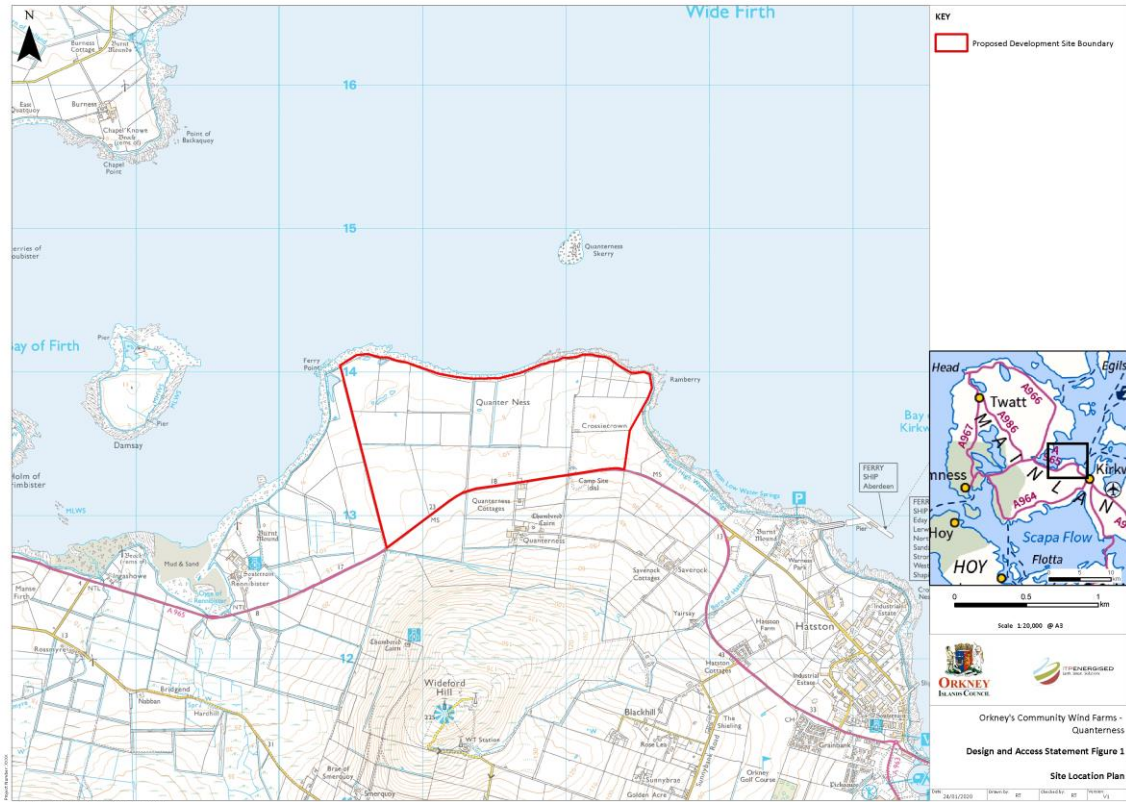
2.3.1 The Applicant appointed ITP Energised to undertake the environmental impact assessment and advice on the design of the Proposed Development. ITP Energised have been supported by the following technical teams:

- OPEN (landscape and visual);
- AOC Archaeology (cultural heritage and archaeology);
- BiGGAR Economics (socio-economics and tourism);
- Pell Frishmann (transport, traffic and engineering);
- Wind Business Support (aviation and radar);
- Anatec (marine radar);
- Oldbaum (wind);
- Jones Lang Lassalle (planning policy);
- TNEI (independent technical advice).

3 Site Details

3.1 Location and Site Plan

3.1.1 The Proposed Development site is located on the Mainland of Orkney, approximately 2.7 km north-west from the boundary of Kirkwall Town Centre. The site is located on the peninsula of Quanterness, north of the A965 which abuts the southern boundary of the site (refer to Figure 1).



3.2 Description

- 3.2.1 The elevation of the site ranges from 0 m AOD in the north to 20 m AOD in the south. The site covers 172.27 ha and the central grid reference of 341560, 1013640.
- 3.2.2 The site comprises of agricultural fields, mainly used for cattle grazing, with some crops. There are no natural watercourses within the site boundary, but a number of drainage ditches follow the field boundaries. Although a number of waterbodies are shown within the site on Ordnance Survey mapping, these have been confirmed to be ephemeral, rain-water fed hollows. The Wide Firth is located to the north of the site.
- 3.2.3 The wider area around the site is also agricultural land, with scattered residential properties and settlements.

3.3 History

- 3.3.1 The site is a green-field site which has historically been used for farming. There is evidence for pre-historic use of the site with artefacts suggesting Late Neolithic to Early Bronze Age occupation. There is no evidence of Early Historic, Medieval, or post-Medieval or modern use of the site.

3.4 Ownership

- 3.4.1 The site is in the ownership of a private landowner with whom the Applicant has a lease agreement.

4 Site and Area Appraisals

4.1 Site Search

Broad Site Identification and Selection

- 4.1.1 In response to the OIC decision to seek landowners with an interest in selling or renting land for wind farm development an Expressions of Interest (Eoi) process was undertaken in August and

September 2017 requesting landowners to get in touch with OIC. A number of responses were received, and each was assessed against defined criteria and compared against other sites received, and sites within OIC ownership.

- 4.1.2 The outcome of this process was the decision to focus on development of a project of up to 108 MW on Hoy.
- 4.1.3 Initial bird survey work in 2018 identified that a project of this scale was unachievable and that a project of around 30 MW was more realistic. The reduction in scale would limit the ability of OIC to contribute towards the Needs Case for a new cable and limit the potential level of income from the project.
- 4.1.4 A process was therefore undertaken in late 2018 to assess the whole of Orkney for potential for onshore wind farm development. This was done by buffering address point data and plotting international designated sites on a map and identifying those areas which were of sufficient size to host a wind farm and were not constrained by either of those limitations. Each site was then investigated in further detail to identify any additional potential constraints. A short list of sites was drawn up and used to inform a report to OIC.
- 4.1.5 Based on this work and followed up by a more targeted desk top study, the Island of Faray was purchased by the Council in January 2019 with a view to developing a wind farm on that site.

Quanterness Specific Site Identification

- 4.1.6 In 2017 as part of feasibility work for a private wire network project looking to link together OIC owned buildings in Kirkwall with a direct supply renewable electricity, thereby reducing costs and carbon production, work was undertaken to identify potential locations for the required generation. OIC therefore sought to identify potentially suitable sites for wind energy generation within viable distance from Kirkwall. The search began with OIC owned sites but did not identify any which were considered suitable based on an initial review of technical and environmental constraints.
- 4.1.7 A search was undertaken of land within 10 km of Kirkwall and sites were tested against an initial range of technical and environmental parameters. This review included consideration of:
- Scottish Planning Policy (SPP) (Scottish Government, 2014);
 - Orkney Islands Council's adopted planning policies and relevant supplementary guidance;
 - international, national and local designated sites;
 - transport facilities;
 - operating airports;
 - residential receptors; and
 - other operational and consented but not built, wind farm developments or proposed wind farm developments where a planning application has been submitted but not determined.
- 4.1.8 The land at Quanterness (refer to Figure 1) was identified as a potentially suitable development site, and further work was undertaken to establish feasibility of development and the potential scale and capacity of potential wind energy generation at the site.
- 4.1.9 The Quanterness site was therefore considered alongside responses from the 2017 Eol process and subsequent wider work in 2018 to identify suitable sites for development.
- 4.1.10 In conjunction with the OIC decision on 5th March 2019 where it was agreed that OIC should focus on developing all projects which have a realistic chance of achieving planning permission by the end of 2020 and therefore contributing to the Needs Case for a new grid connection to Orkney, Quanterness was selected for progression towards an application for planning permission, alongside sites at Hoy and Faray.
- 4.1.11 Full details of the process taken to identify the site are provided in Chapter 2 of the EIA Report.

4.2 Area Appraisal

Residential Receptors

- 4.2.1 No buildings are located within the site boundary, the closest residential properties are 1 and 2 Quanterness Farm Cottages, located 132 m south of the site boundary.

Landscape Context

- 4.2.2 The site is located on the Mainland of Orkney, to the west of Kirkwall. It occupies an area of the coastal plain, known as Quanterness. This is a relatively level piece of land, albeit with a gradual fall from the moorland hill fringes in the south towards the coastal edge to the north. The shoreline of Quanterness is relatively low and smooth with a rocky shore to the east and sandy shore to the west. The landcover comprises farm fields of pasture and arable crops, with enclosure from fences, concrete block walls and occasional drystone dykes. There are no trees on the site and those that grow in the surrounding area are small and swept by onshore winds. The character of this coastal landscape is open and exposed.
- 4.2.3 The site is situated on the southern shore of the Wide Firth, which is enclosed by the Mainland of Orkney to the south, west and north, and with the Island of Shapinsay to the north-east and Gairsay to the north. Relative to the shoreline to the west and the east, Quanterness projects out into the Wide Firth, increasing the prominence of the site in views along this southern coast, as well as from the other mainland and island coasts which wrap around this body of water. While the coastal edges are low, their outline fluctuates between indented sandy bays and projected rocky headlands. Holms, which are small rounded islands, and skerries, which are small outcrops of rock, occur intermittently across the water.
- 4.2.4 On the landward side, the site is enclosed by landform which rises gradually from the coastal edge to the moorland hills. The predominant land use is farming and a subtle transition is evident across this cross section, from larger fields of improved pasture and some arable crops occurring close to the coast, transitioning into smaller fields of semi-improved pasture occurring across the hill fringes and then back to larger fields of rough grazing towards the hill tops. Wideford Hill (225 m AOD) occupies the land to the south of the site, while Keelylang Hill (221 m AOD) sits further to the south-west; these hills forming an important backdrop to the site and the coastal plains.
- 4.2.5 The settlement pattern in this area typically comprises towns and villages set along the coastal edge, with dispersed settlement across the rural area. Kirkwall is the largest town in Orkney. Its low-lying location, set around the Bay of Kirkwall, combined with the rising landform of Wideford Hill to the west, creates a sense of enclosure around the town. The small residential cluster at Hatston and Hatston Industrial Estate, occupy a more elevated position on the western edge of Kirkwall, from which the site is more readily visible. Finstown is the small village which lies approximately 4.1 km to the west of the site boundary, following a predominantly linear pattern along the main roads with the principal outlook north-east towards the Wide Firth.
- 4.2.6 The A965 is the main road between Kirkwall in the east and Stromness in the west, with the section to the west of Kirkwall following the coastal edge and passing in close proximity to the site. The minor road that connects Kirkwall with Finstown wraps around the southern side of Wideford Hill. The other road of relevance is the A966, which extends north from Finstown to the north of West Mainland.
- 4.2.7 There is an existing influence on landscape character from operational wind farms located on the Mainland of Orkney. Operational Hammars Hill and Bugar Hill Wind Farms are the two main commercial wind farms visible from this local area, albeit located to the north-west, in the moorland hills of West Mainland at a minimum distance of 8.91 km and 12.79 km from the closest proposed turbine, respectively. The single turbines at Rennibister and Crowness Business Park are located within the closer range at 1.33 km and 1.59 km respectively.

Transport and Access

- 4.2.8 Access to the site would be taken directly from the A965 via a new priority junction. The junction would be surfaced and constructed so that the junction bellmouth would be to adoptable standards (within the current limits of adoption). The tracks within the site would be private.

Public Access and Pathways

- 4.2.9 There are no Core Paths near the proposed site access. The A965 does not have any pedestrian or cyclist infrastructure near the site access junction and as such, active travel activity is considered to be low at this location.

5 Design Principles

5.1 Introduction

- 5.1.1 As part of the EIA process design iterations were prepared and considered for the turbine locations and on-site infrastructure, including access tracks and the construction compound and substation locations. In order to propose a development layout which is considered to represent the most appropriate design; potential environmental impacts and their effects, physical constraints, health and safety considerations, and project economics were taken into account. Information was collated from desktop information, field surveys, scoping opinions, local planning policy, planning conditions and recent case law. This information provided the baseline from which site issues and sensitivities could be identified and highlighted for further detailed assessment and given priority in influencing the layout iterations of the Proposed Development. The design evolution process is described in detail below.

5.2 Environmental Constraints and Opportunities

- 5.2.1 The design of the Proposed Development took into consideration the following environmental constraints:

Landscape

- 5.2.2 There are no landscape designations within the site boundary.
- 5.2.3 The following landscape designations are within 5km to the site:
- Kirkwall Conservation Area, 3.2 km to the south-east of the site; and
 - Balfour Castle Garden and Designated Landscape (GDL), 4.5km to the north-east of the site.
- 5.2.4 Guidance from the Scottish Government and Scottish Natural Heritage (SNH) has been used in the siting and design iteration of the Proposed Development site. This includes:
- Guidelines for Landscape Character Assessment, (2002) Countryside Agency and Scottish Natural Heritage (SNH);
 - Landscape Character Assessment Guidance for England and Scotland: Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity, (2002) The Countryside Agency and Scottish Natural Heritage (SNH);
 - Assessing the Cumulative Impact of Onshore Wind Energy Developments (March 2012) SNH;
 - Siting and Design of Wind farms in the Landscape, Version 3 (2017) SNH; and
 - Visual Representation of Wind farms – Version 2.2 (February 2017), SNH.
- 5.2.5 In addition, OIC has produced a number of supporting documents relating to landscape character, renewable energy and wind farm developments which have been referenced.
- The Orkney Local Development Plan (OIC, 2017a); and

- The Orkney Local Development Plan. Supplementary Guidance: Energy (OIC, 2017b).

Ecological Designations

5.2.6 There are no ecological designations within the site. Within 5 km of the site boundary the relevant designations are as follows:

- The North Orkney Proposed SPA lies directly adjacent north of the site;
- Orkney Mainland Moors Special Protection Area (SPA) and Keelylang Hill and Swaraback Burn SSSI 1.8km to the south-west of the site;
- Scapa Flow Proposed SPA and Orkney inshore Waters Proposed SPA, approximately 5 km south-east of the site;
- Wideford Hill Local Nature Conservation Site (LNCS), to the south of the site;
- Rennibister and North Mainland Coast LNCS;
- North Mainland Coast LNCS;
- Hobbister RSPB Reserve, 2.9 km to the south-east of the site;
- Cottascarth & Rendall Moss RSPB Reserve, 3.3 km to the north of the site; and
- West Mainland moorlands Site of Special Scientific Interest (SSSI), 4.6km to the south-west of the site.

5.2.7 The habitats which would be affected by the Proposed Development within the site include improved grassland and arable land. There are no protected resting places for protected mammals on site.

Historic Environment

5.2.8 There are no designated assets within the site boundary. Within 5 km of the site there are the following designated assets:

- Heart of Neolithic Orkney World Heritage Site Sensitive Area, to the south-west corner of the site;
- 18 Scheduled Monuments, the closest being Quanterness Chambered Cairn and Prehistoric House 305 m to the south of the site; and
- 257 Listed Buildings (the majority located within Kirkwall), the closest being B Listed Grainbank House, 2.4 km to the south-east of the site.

5.2.9 Three non-designated assets have been identified within the site boundary and the design of the Proposed Development and its mitigation has avoided impacts to these.

Hydrology

5.2.10 There are no natural watercourses or private water supplies within the site boundary. A number of waterbodies are shown on the OS mapping, however these are determined to be ephemeral rain water fed hollows. Drainage ditches follow the fence-lines of some of these fields and SEPA has requested that a 6 m buffer be placed around the drainage ditches.

5.2.11 SEPA have requested that all turbines be placed above 3.5 m AOD to ensure that they are not impacted by coastal flooding. The Applicant has therefore ensured that all turbines are a minimum of 5 m AOD.

Telecommunication Links

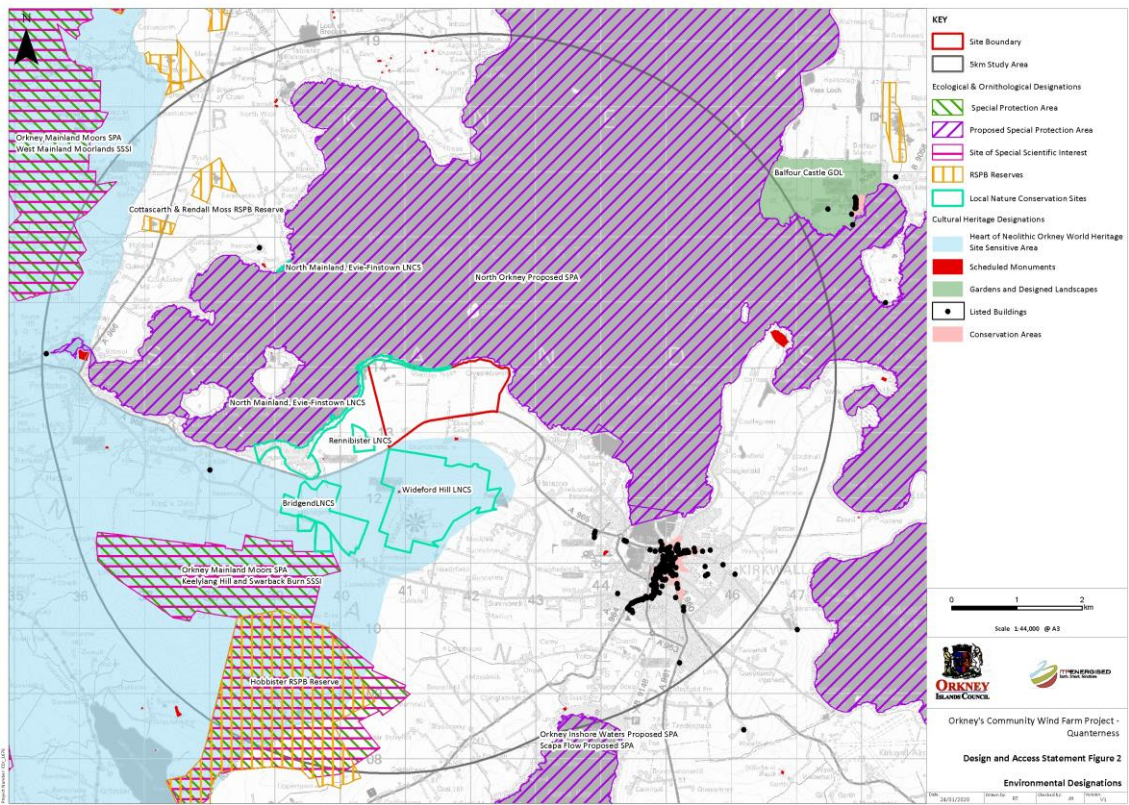
5.2.12 The Joint Radio Company (JRC) identified that two telecommunication links cross the site and turbines must be sufficiently offset from these.

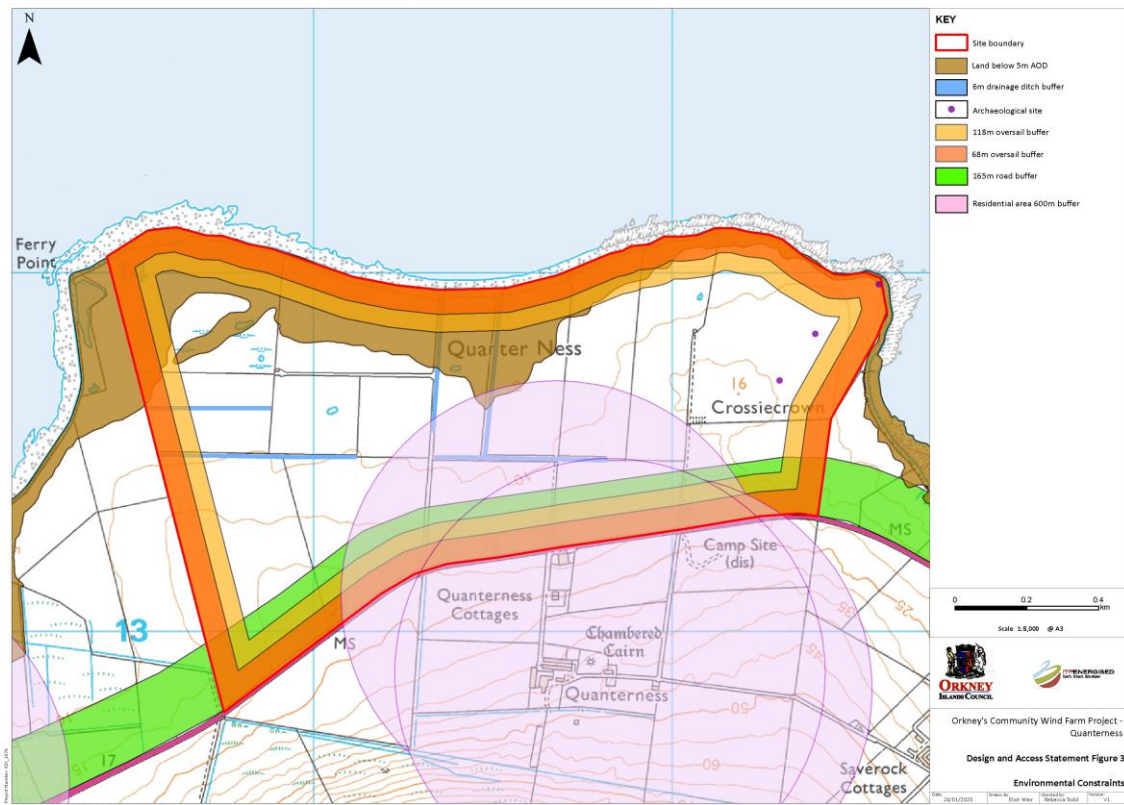
Noise, Residential Visual Amenity and Shadow Flicker

- 5.2.13 Maintenance of appropriate separation distance between residential properties and turbines in order to reduce noise, shadow flicker and residential visual amenity effects.

Summary

- 5.2.14 Figure 2 shows the environmental designations within 5 km of the site boundary while Figure 3 shows the onsite environmental constraints that have influenced the design process of the Proposed Development.





5.3 Design Principles

5.3.1 Taking into consideration the above constraints and opportunities, the following principles were adopted during the design iterations undertaken by the Applicant to ensure that the final design of the Proposed Development was the most suitable for the site:

- maximising wind yield and maintaining adequate spacing between turbines;
- avoid placing turbines below 5 m AOD;
- ensuring a minimum distance of 165 m between the turbines and A965;
- ensuring an appropriate distance between the turbines and the closest residential properties;
- ensuring an appropriate separation distances between non-designated assets of regional importance and the Proposed Development infrastructure;
- consideration of key views, in particular from Cuween and Wideford Hill cairns;
- ensuring that the Proposed Development is compatible with other planned and consented wind farms on Orkney; and
- avoiding inconsistent turbine spacing, such as relatively large gaps, outliers or excessive overlapping turbines to minimise visual confusion and ensure a balance / compact array from key views.

5.4 Proposed Development Layout Iterations

5.4.1 Following the design principles above the Applicant has undertaken multiple design iterations of all aspects of the Proposed Development including the turbine layout and the infrastructure layout.

Turbine Layout Iterations

- 5.4.2 There have been six main design iterations to the layout of the Proposed Development. Changes made to the Proposed Development layout have been undertaken in the context of maintaining a financially viable development proposal when considered against the financial backdrop that exists for onshore wind developments in the Scotland.
- 5.4.3 In the same way, and alongside considering all relevant environmental constraints shown in Section 5.2 above, technical advice from wind analysts have been a key consideration in arriving at the Proposed Development layout, with regards to turbine spacing and placement, ensuring optimum wind energy production at the site and financial viability at today's wholesale price of electricity.
- 5.4.4 The principal changes to the Proposed Development have been to change the proposed turbine layout in order to account for different environmental constraints within the site area.
- 5.4.5 As a part of the design process, landscape and archaeological advice has been sought to mitigate the landscape and visual effects of the Proposed Development as far as is possible, by avoiding inconsistent turbine spacing, large gaps, outliers or excessive overlapping turbines to minimise visual confusion and ensure a balanced / compact array from key views and designated cultural heritage assets.
- 5.4.6 The different design iterations are presented in Table 1.

Table 1 – Turbine Design Iterations

Design Iteration	Description	Design Principles / Reasons for Change from Previous Iteration
A	6 Turbines	The initial site layout submitted with the EIA Scoping Report aimed to maximise the number of turbines while ensuring the maximum distance between the turbines on the A965 and the residential properties at Quanterness. This layout placed the majority of the turbines along the northern boundary of the site, with the exception of T6 which was placed on the western boundary. A spacing of 1.5 times the indicative rotor diameter was used to separate the turbines (204 m).
B	6 Turbines	Following receipt of the EIA Scoping Opinion, the Applicant undertook environmental surveys and started to consider turbine options for the Proposed Development. The blade of T6 in Layout A could oversail the site boundary into the neighbouring land. T6 was therefore moved to the east in Layout B to avoid oversailing.
C	6 Turbines	As part of the EIA Scoping Opinion JRC raised a concern about potential impacts of T5 on their communication links. The Applicant undertook detailed consultation with JRC who recommended that T5 was moved 60 m to the north-east to avoid the telecommunication link (Layout C).
D	6 Turbines	The spacing between the turbines was increased from 1.5 times the indicative rotor diameter to two times the rotor diameter to improve wind efficiency between turbines (272 m).

Design Iteration	Description	Design Principles / Reasons for Change from Previous Iteration
		<p>As part of their EIA Scoping Response SEPA requested that all turbines are placed above 3.5 mAOD. In order to identify this the 5 mAOD contour mapping was highlighted and as a consequence T1 and T3 were moved south-east and south-west respectively (refer to Figure 2.3).</p> <p>In order to ensure that the movement south of turbines did not encroach on residential properties at Quanterness Farm Cottages, Quanterness Farm and Harwood, a minimum separation distance of 600 m between the turbines and the properties was implemented to ensure that noise, shadow flicker and residential visual amenity would be acceptable (refer to Figure 2.3).</p> <p>In addition the Applicant decided to increase the separation distance between the turbines and the site boundary to 118 m to allow for micro-siting, which moved T1 south-east-west.</p> <p>To reduce the number of turbines visible from Wideford Hill Cairn and to accommodate the movement south of T1 and T3 and maintain appropriate spacing between turbines, T2 of Layout D was moved south of T6 of Layout C, while T6 of Layout C was moved to the south-east corner of the site (refer to Figure 2.3). This permitted T4 to move south-west slightly and increased the separation between the turbines on western half of the site and improved views from the west and south.</p>
E	6 Turbines	<p>Following consultation with the Applicant’s archaeologists it was determined that T2 of Layout D was too close to impacted on views from Wideford Hill Cairn and moving the turbine east would decrease the visual extend of the Proposed Development visible from the cairn. T2 was therefore moved 270 m north-east, towards the centre of the site (refer to Figure 2.4 and Figure 2.X8). This had the additional benefit of increasing the separation distance between the turbines and Rennibister and the other residential properties to the west of the Proposed Development site.</p> <p>The movement of T2 north-east had the knock-on effect of moving T3 and T4 to ensure the separation between turbines is maintained and avoid visual “bunching”. It was determined that T6 could be moved to the west to maximise separation distance between the turbines and Kirkwall. This would also increase the spacing between T5 and T6 and ensure no overlap of the spacing circles between the turbines.</p> <p>The movement of the turbines was also considered relative to noise, residential visual amenity and shadow flicker effects at nearby residential properties.</p>
F	6 Turbines	<p>Layout E was re-submitted to JRC to determine whether the revised layout is acceptable. JRC raised concerns about the proximity of T5 to the telecommunication link and recommended moving T5 north-east</p>

Design Iteration	Description	Design Principles / Reasons for Change from Previous Iteration
		by approximately 8 m. Following this movement Layout F became the layout which the application is based.

On-site Infrastructure Layout Iterations

5.4.12 Following the evolution of the turbine layout design, the design of the access tracks, construction compounds and substation was undertaken. The infrastructure required on the site was designed and arranged in such a way as to avoid the main on-site environmental constraints identified.

5.4.13 It was recognised that there was good road access to the site which would negate the need for lengthy and visually intrusive new access tracks through the landscape. Additional stretches of access track to reach outlying turbines were designed to:

- minimise the number of drainage ditch crossings;
- avoid more sensitive habitats;
- avoid archaeologically sites; and
- minimise the length of new access track by using existing on-site infrastructure.

5.4.14 The substation, construction compound and laydown area locations have been designed to avoid drainage ditches and sensitive habitats.

Vehicular Access

5.4.15 The proposed access route for the turbines commence at the Hatston Pier. The route will then follow Grainshore Road, which is a loop to the A965, providing access to industrial units and linking the Hatston Pier to the north of the A965. Access to the site will then be taken directly from the A965 via a new priority junction.

5.4.16 The access tracks within the site boundary will be approximately 4.5 m. It is anticipated that approximately 851 m of existing farm access tracks would be upgraded and approximately 3,793 m of new access tracks constructed (refer to Figure 1.2).

5.4.17 Construction of the access tracks will require stripping existing unsuitable material to a suitable bearing or the designed formation, and placing a filter membrane and or geotextile reinforcement membrane (depending on site conditions) on the ground. Aggregate will then be layered, with the access track capped with a layers of Type 1 or similar material.

6 Public/Community Involvement

6.1.1 The Applicant has engaged with local communities throughout the development of the Proposed Development. This engagement has been undertaken through a variety of approaches:

- several early stage community consultation events;
- question and answer sessions with community councils;
- press releases;
- statutory consultation activities;
- website with information on the Proposed Development.

6.1.2 The Applicant submitted a Proposal of Application Notice (PAN) in September 2019. In line with good practice for the consenting stage of major development projects as set out within the Planning

Circular 3/2013 'Development Management Procedures', a programme of pre-application community engagement has been undertaken by the Applicant.

6.1.3 This consultation allowed local residents to provide their opinions on the principle and design of the Proposed Development, while also raising concerns. Full details are provided in the Pre-Application Consultation Report.

7 Programme

7.1 Construction

7.1.1 The estimated onsite construction period for the Proposed Development is expected to take approximately 12 months and includes a programme to reinstate all temporary working areas.

7.1.2 Normal construction hours will be between 07:30 to 18:00 weekdays and 08:00 to 13:00 Saturdays. These times have been chosen to minimise disturbance to local residents and if required to be restricted this will be agreed with OIC by an appropriately worded condition. Details of the construction programme will be provided to OIC in a Construction Environmental Management Plan (CEMP) prior to the commencement of construction.

7.1.3 Table 2 below shows the indicative construction programme.

Table 2 – Indicative Construction Programme

Activity	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
Site Establishment	■	■										
Access Tracks & Hardstand Stone		■	■	■	■	■						
Access Track Geotextiles		■		■								
Turbine Foundations				■	■	■	■					
Turbine Reinforcement				■	■	■	■					
Cabling Sand						■	■	■	■			
Cabling Materials						■	■		■			
Turbine Delivery								■	■			
Turbine Escorts								■	■			
Control Building & Ancillary Works								■	■	■		
Site Reinstatement & Commissioning										■	■	■

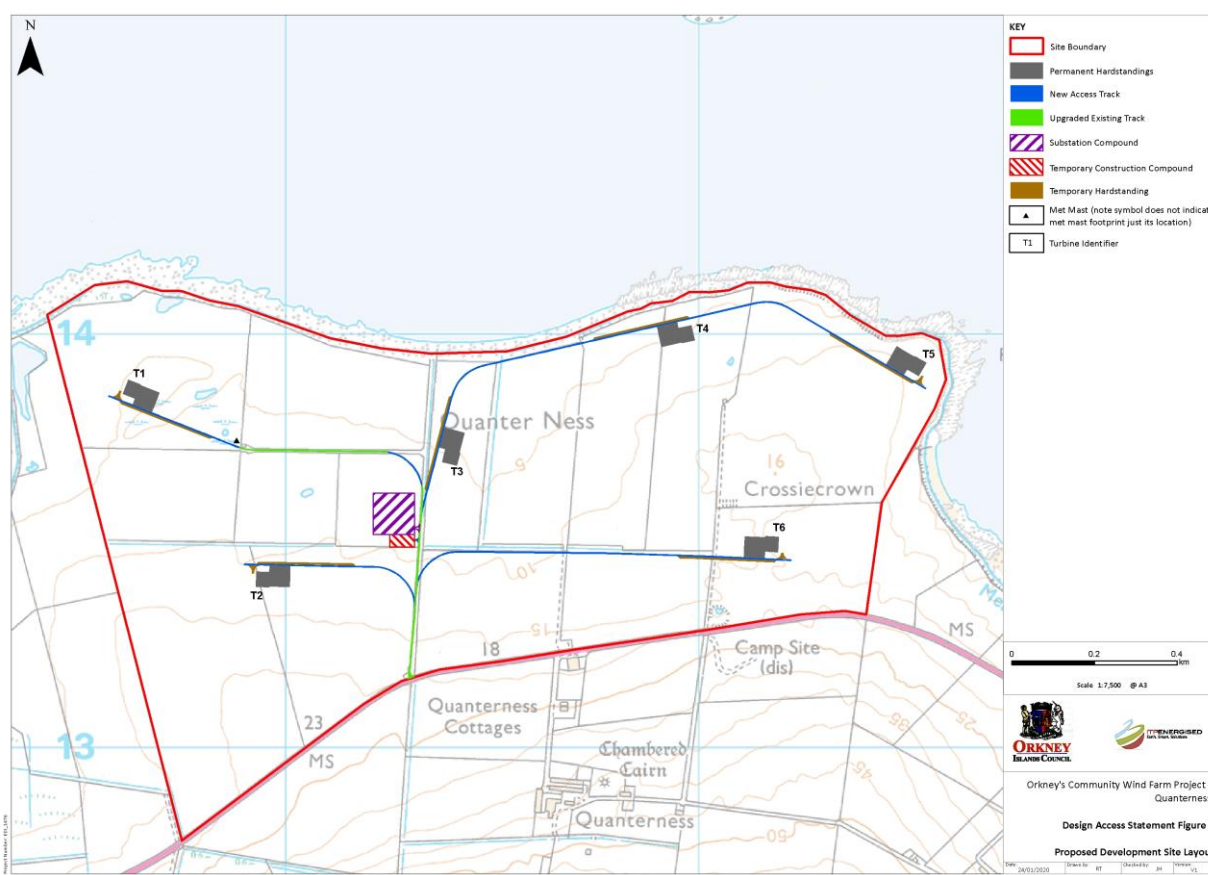
7.2

7.3 Operation

7.3.1 The Applicant is applying for consent in perpetuity.

8 Design Solution

8.1.1 The Proposed Development comprises of six wind turbines of up to a maximum 149.9 m height from ground to blade tip when vertical. The target capacity of the Proposed Development will be approximately 28.8 MW. The actual installed capacity may be greater or less dependent on turbine model selection but will not be greater than 50 MW. A number of ancillary elements are also proposed, including a temporary construction compound, permanent hardstandings adjacent to the wind turbines for maintenance cranes, temporary laydown areas adjacent to the wind turbines, external transformers, internal access tracks (both new and upgrading of existing farm access tracks), underground cables between turbines, an on-site substation compound and a permanent meteorological monitoring mast (refer to Figure 4 below). Further details of the site infrastructure are provided within Chapter 3 of the EIA Report.



9 Conclusion

9.1.1 The final layout has been informed by a robust EIA and lengthy design iteration process, taking into account potential environmental impacts and their effects, physical constraints, and health and safety considerations. The information used to inform the design iteration process included consultation responses received, baseline data and the impact assessment undertaken.

9.1.2 The final turbine layout has been designed to effectively capture the energy from the wind in order to maximise the energy yield from the site, whilst minimising potential impacts on the environment wherever possible.

- 9.1.3 Consideration has been given to a range of design issues such as relevant planning policy, turbine locations as well as various environmental, ecological and technical requirements. Predicted environmental effects arising from the Proposed Development have been mitigated as far as possible, if not eliminated during the iterative design process.
- 9.1.4 Overall the Proposed Development is an appropriately designed, sensibly located, and completely sustainable development which is in line with policies in the local and strategic development plans and conforms to national policy. It will provide valuable contribution towards economic growth on Orkney and in Scotland as a whole.