

# 3 Design Iterations and the Proposed Development

## Contents

3.1	Introduction	3-1
3.2	Design Iterations Post-April 2019	3-1
3.3	Description of the Proposed Development	3-2
3.4	Construction	3-4
3.5	Operation and Decommissioning	3-4

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## 3 Design Iterations and the Proposed Development

### 3.1 Introduction

- 3.1.1 Chapter 2 of the 2019 EIA Report provides a description of all the design iterations that were undertaken before arriving at the 2019 Layout. This included a reduction in turbines, from an original 63 to 29, and multiple amendments to the turbine and infrastructure locations to minimise the environmental effects of the Proposed Development.
- 3.1.2 Chapter 3 of the 2019 EIA Report presents a description of the Proposed Development, including a description of the site and its geographical and environmental context, together with a description of the proposed infrastructure required on site (refer to Section 3.3 of the 2019 EIA Report) and the proposed construction methodology (refer to Section 3.4 of the 2019 EIA Report).
- 3.1.3 This chapter presents a description of the changes to the design of the Proposed Development, from the 2019 Layout to the 2020 Layout, which are proposed in response to comments received from consultees and subsequent requirements (refer to Chapter 2 of the 2020 SEI). It also provides a summary of the final Proposed Development for which the Applicant is applying for consent.

### 3.2 Design Iterations Post-April 2019

- 3.2.1 As described above numerous design iterations were undertaken to arrive at the 2019 Layout which are fully described in Chapter 2 of the 2019 EIA Report. The 2019 Layout (Layout J) is summarised in **Figure 3.1**. Following submission of the 2019 EIA Report, and the consultation responses provided, the Applicant undertook further revisions to the design of the Proposed Development, as described below.

#### ***Layout K<sup>1</sup>***

- 3.2.2 Following the consultation responses from Historic Environment Scotland (HES) and Scottish Natural Heritage (SNH) who raised concerns regarding the visual impact of the 2019 Layout upon Burgi Geos Scheduled Monument and the Shetland National Scenic Area (NSA) respectively, the Applicant proposed to remove turbines 1, 2, 3 and 7. The access tracks and hardstanding infrastructure associated with these turbines are also removed from the infrastructure design (i.e. borrow pit search area I and construction compound 3) (refer to **Figure 3.2**).
- 3.2.3 The Applicant met with HES, SNH and Shetland Island Council (SIC) to discuss this proposed revision to the design and to share visualisations of how these changes would look from key viewpoints.
- 3.2.4 Following this meeting HES confirmed that they accepted the proposed alterations to the design and would remove their objection to the Proposed Development (refer to Appendix 3.1).
- 3.2.5 However, SNH stated that they did not consider that Layout K sufficiently reduced the adverse effects on the NSA for SNH to remove their objection (refer to Appendix 3.2).

#### ***Layout L***

- 3.2.6 Following the response from SNH on Layout K, the Applicant in discussion with their landscape architects, proposed a further reduction in turbines, removing T4 and T29 (the most northerly turbines) and their associated infrastructure from the Proposed Development. This meant the additional removal of borrow pit search area G (refer to **Figure 3.3**).

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<sup>1</sup> It should be noted that the 2019 EIA Report Chapter 2 reports 10 layout changes, culminating in Layout J which is the 2019 Layout upon which the 2019 EIA was undertaken. In order to reduce confusion with that design iteration process, and the design revisions undertaken following the submission of the 2019 EIA Report, the design iterations described in this chapter carry on directly from the 2019 EIA Report and hence begin at “K” with “J” being the 2019 Layout.

3.2.7 The Applicant also proposed the reduction in maximum height of turbines 5, 24, 25, 26, 27 and 28, from 200 m to 180 m.

**Layout M**

3.2.8 In February 2020 the Applicant held a public information day in Cullivoe to update the public on the proposed changes to the Proposed Development Layout. The feedback from the public information day led to the reduction in the maximum height of turbines 16, 19 and 20, from 200 m to 180 m, to reduce the potential impact on the visual amenity from Sellafirth.

**Summary**

3.2.9 Layout M is the layout taken forwards and referred as the 2020 Layout of the Proposed Development, and which is assessed within the 2020 SEI and summarised in Section 3.3 below. A summary of the changes is provided in Table 3.1 below.

**Table 3.1 – Summary of Differences between 2019 Layout and 2020 Layout**

Infrastructure	2019 Layout	2020 Layout
Maximum Number of turbines	29	23
Maximum height of turbines	29 turbines 200 m to tip	Nine turbines 180 m to tip and 14 turbines 200 m to tip
Number of borrow pit search areas	Nine	Seven
Number of meteorological masts	One	One
Number of construction compounds	Four (including substation construction compound)	Three (including substation construction compound)
Length of new permanent floated access track	18.35 km	12.5km
Length of new permanent dug access track	1.75 km	990 m
Length of new temporary floated access track	980 m	720 m
Length of upgraded existing track	1.05 km	1.05 km

### 3.3 Description of the Proposed Development

3.3.1 The Proposed Development will comprise of 23 turbines, 9 of which (T5, T16, T19, T20, T24, T25, T26, T27 and T28) will be up to a maximum 180 m height from the ground to blade tip when vertical, and the remaining 14 turbines of up to a maximum of 200 m height from the ground to blade tip when vertical. The total estimated installed capacity of the Proposed Development (subject to

turbine procurement) will be approximately 160 MW, but no greater than 200 MW. The ancillary elements of the Proposed Development will comprise of two temporary construction compounds, permanent hardstandings adjacent to the wind turbines for maintenance and decommissioning cranes, temporary laydown areas adjacent to the wind turbines, external transformers, internal access tracks, an abnormal loads access junction off the A968, underground cables between turbines, an on-site substation and maintenance building, a permanent meteorological monitoring mast and seven potential temporary borrow pit search areas.

3.3.2 The proposed final locations of the turbines have been defined in order to enable the 2020 SEI to describe fully the Proposed Development for which consent is being sought. The British National Grid coordinates denoting where each of the turbines are proposed to be located are listed in **Table 3.2** below. This table is an update of **Table 3.1** within the 2019 EIA Report. It should be noted that the turbines have not been re-numbered for ease of cross-referencing.

3.3.3 The proposed layout of the associated infrastructure, including access tracks, site compounds and substation are illustrated in **Figure 3.4** of the 2020 SEI.

**Table 3.2 Maximum Turbine Height and Coordinates**

Turbine	Height (m)	Easting	Northing
T5	180	449676	1202945
T6	200	449640	1202314
T8	200	449002	1201654
T9	200	449577	1201755
T10	200	448922	1201085
T11	200	449777	1201270
T12	200	449088	1200632
T13	200	449752	1200772
T14	200	449368	1200263
T15	200	449961	1200325
T16	180	450428	1200150
T17	200	450396	1201116
T18	200	450606	1200678
T19	180	451071	1200336
T20	180	451554	1200185
T21	200	450563	1201645
T22	200	451005	1201521
T23	200	451298	1200900

Turbine	Height (m)	Easting	Northing
T24	180	451800	1200817
T25 <sup>2</sup>	180	451594	1201485
T26 <sup>2</sup>	180	451762	1202249
T27	180	451323	1202379
T28	180	451037	1202718

## 3.4 Construction

- 3.4.1 Following feedback from SIC Environmental Health Officer (EHO), normal construction hours will be between 07:00 and 19:00 Monday to Friday and 08:00 to 18:00 on Saturdays. Normal construction work will not be undertaken on Sundays or on local and national public holidays. Advance warning of any construction outwith these hours will be provided to SIC and local residents.

## 3.5 Operation and Decommissioning

- 3.5.1 Operation and decommissioning of the Proposed Development will be as detailed in Chapter 3 of the 2019 EIA Report.

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<sup>2</sup> It should be noted that there was a typo in Table 3.1 of the 2019 EIA Report and the wrong co-ordinates were shown for T25 and T26. However, the assessments undertaken in the EIA were done on the correct co-ordinates and the correct locations shown in Figure 1.2 of the 2019 EIA Report.