

CHAPTER 1: INTRODUCTION

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1. INTRODUCTION

1.1 Introduction

- 1.1.1 The Scottish Ministers granted SSE Generation Limited (referred to hereinafter as “the Applicant”) Section 36 (s.36) consent under the Electricity Act 1989 (as amended) (hereinafter referred to as the “relevant section 36 consent”) and deemed planning permission under the Town and Country Planning (Scotland) Act 1997 (as amended) for the construction and operation of Gordonbush Extension Wind Farm on 29th September 2017.
- 1.1.2 The consented wind farm, referred to hereinafter as “the Consented Development”, is located adjacent to the Applicant’s operational Gordonbush Wind Farm, on Gordonbush Estate, approximately 9.5 km to the north-west of Brora, Sutherland, as illustrated in Figure 1.1: Site Location. Gordonbush Wind Farm has an installed capacity of 70 megawatts (MW).
- 1.1.3 The Consented Development comprises a total of fifteen turbines with an installed capacity of approximately 52.5 MW. Twelve of the consented turbines have a maximum tip height of 130 metres (m), whilst the remaining three turbines have a maximum tip height of 115m¹. The consented layout is shown on Figure 1.2: Consented Layout. The Consented Development is an extension to Gordonbush Wind Farm and would utilise existing infrastructure where possible, including the existing on-site substation to export the generation of electricity to the transmission network.
- 1.1.4 The Consented Development was subject to an iterative design and assessment process, considering both technical and environmental constraints. This process is documented within the Gordonbush Extension Wind Farm Environmental Statement (ES) (June, 2015)², referred to hereinafter as the ‘2015 ES’, and the Gordonbush Extension Further Environmental Information (FEI) Report (2016)³, referred to hereinafter as the ‘2016 FEI Report’. The Consented Development was designed to avoid or minimise adverse environmental effects where practicable. Where further mitigation measures were required to minimise potential environmental effects, these were set out in the 2015 ES and secured through appropriate Conditions of Consent (see Appendix 1.1). No additional mitigation measures were identified within the 2016 FEI Report.
- 1.1.5 Table 1.1 summarises the number and tip height of turbines assessed within the 2015 ES and the 2016 FEI Report (i.e. the Consented Development).

Table 1.1: Turbines assessed within the 2015 ES and 2016 FEI Report

Description	2015 ES	2016 FEI Report (the Consented Development)
Number of turbines (WTG)	16	15
WTG’s at 130m Tip Height	13 – WTG’s 1 – 13	12 – WTG’s 1 – 10, 12 and 13
WTG’s at 115m Tip Height	3 – WTG’s 14, 15 and 16	3 – WTG’s 11, 14 and 16.
WTG’s removed	N/A	WTG 15
WTG’s reduced in height	N/A	WTG 11 from 130m to 115m

¹ Annex 1 of the relevant s.36 consent states that there would be eleven turbines with a maximum tip height of 130m and four turbines with a maximum tip height of 115m. This is inconsistent with the submitted application, as summarised in page 1 of the letter of consent.

² The 2015 ES assessed a total of 16 turbines.

³ The 2016 FEI Report assessed a total of 15 turbines (i.e. the Consented Development).

- 1.1.6 It is anticipated that the capacity of the Proposed Varied Development would exceed 30MW, which combined with the existing Generating Station capacity exceeds 50MW. Given this, the Applicant is now applying under s.36C of the Electricity Act 1989 (as amended) to modify the relevant s.36 consent due to a proposed reduction in the number of turbines from fifteen to eleven, and an increase in the tip height of all remaining turbines from 130m up to a maximum tip height of 149.9m (and a maximum rotor diameter of up to 136m). A direction under section 57(2ZA) of the Town and Country Planning (Scotland) Act 1997 varying the deemed permission is also sought.
- 1.1.7 No change in turbine position is proposed for the remaining eleven turbines. The proposed changes are hereinafter referred to as “the Proposed Varied Development”, and are shown in relation to the Consented Development on Figure 1.3: Proposed Variation.
- 1.1.8 As a result of these changes, the Applicant is requesting that the following Conditions attached to the deemed planning permission for Gordonbush Extension Wind Farm (hereinafter referred to as “Conditions of Consent”) are varied:
- Condition 5 – Implementation in accordance with approved plans and requirements of this permission;
 - Condition 7 – Design and operation of wind turbines;
 - Condition 8 – Decommissioning and Restoration Plan;
 - Condition 10 – Electricity Supply;
 - Condition 11 – Micro-siting;
 - Condition 21 – Outdoor Access;
 - Condition 23 – Construction Environment Management Plan;
 - Condition 24 – Ecological Clerk of Works;
 - Condition 25 – Habitat Management Plan; and
 - Condition 25 – Noise.
- 1.1.9 It is further sought to renumber existing Condition 25 (Noise) as Condition 26.
- 1.1.10 Requested variations to the wording of these Conditions of Consent are shown in Appendix 1.2: Requested Changes to Conditions of Consent. Furthermore, variations to Annex 1 and Annex 2 of the relevant s.36 consent are sought in order to facilitate the changes proposed and/or resolve anomalies and/ or discrepancies. It is assumed that all of the other Conditions of Consent will remain unchanged.

1.2 Environmental Impact Assessment

- 1.2.1 The s.36C application is considered to fall under Schedule 2, para.2 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the “EIA Regulations”):
- 2. Any change to or extension (including a change in the manner or period of operation) of development of a description listed in schedule 1 or in paragraphs 1 of this schedule where that development is already authorised, executed, or in the process of being executed, and the change or extension may have significant adverse effects on the environment.*
- 1.2.2 This Environmental Impact Assessment Report (“EIA Report”) is therefore submitted in support of the application to modify the consent. This EIA Report will assess the Proposed Varied Development, and reflect the changes in assessment findings compared with the Consented Development. This is explained further in Chapter 2: EIA Process.
- 1.2.3 To discuss and agree the proposed scope of the EIA Report, a pre-application meeting was held with statutory consultees, including The Highland Council (THC), Scottish Natural Heritage (SNH), Scottish Environment Protection Agency (SEPA) and the Energy Consents Unit, on 29th

August 2018. Further details are provided in Chapter 6: Scope and Consultation and accompanying appendices.

1.3 Needs Case

1.3.1 Since the granting of consent, the turbine and electricity market has changed significantly. Subsidies for onshore wind ended in 2015, and wind turbine technology is continually evolving with more productive and efficient designs coming on to the market place each year. This wind farm would be solely reliant on revenue from electricity generated and sold to the wholesale energy market and optimisation of the site from a generation perspective is essential for the project's economic viability.

1.3.2 Increasing the tip height and rotor diameter of the turbines has the benefit of increasing the turbine energy generation potential and efficiency of the site, as shown in Table 1.2, which in turn enables a reduction in turbine numbers from fifteen to eleven. Increasing the tip height allows the Applicant to take advantage of the most efficient turbines available on the market, with larger blade turbines able to capture more wind energy which increases the output of each turbine.

Table 1.2: Energy Generation Comparison

Description	No. of Turbines	Turbine Model	Turbine Capacity (MW)	Nominal Rotor Diameter (M)	Nominal Hub Height (M)	Maximum Tip Height (M)
Operational Gordonbush Wind Farm	35	Senvion MM82	2.05	82	69	110
Consented Development	11	TBC	3.5	105	77.5	130
	4	TBC	3.5	93	68.5	115
Proposed Varied Development	11	TBC	>3.0	136	81.9	149.9

1.3.3 The final turbine model for the proposed wind farm has not yet been chosen, however suitable candidate machines which could be accommodated within the upper tip height of 149.9m are currently being considered. For the purposes of assessment within this EIA Report, where it has been necessary to identify a candidate turbine for assessment of a particular environmental topic (e.g. noise), this is specified within the relevant chapter. Turbine parameters assumed for each environmental topic are summarised in Table 1.3 below.

Table 1.3: Turbine Parameters Assumed for the Purposes of Assessment within this EIA Report

Topic	Nominal Rotor Diameter (M)	Nominal Hub Height (M)	Maximum Tip Height (M)	Turbine Model	Comment
General	136	81.9	149.9	Not specified	
Landscape and Visual	136	81.9	149.9	Not specified	
Ecology and Nature Conservation	136	81.9	149.9	Not specified	
Hydrology, Hydrogeology and Geology	136	81.9	149.9	Not specified	

Topic	Nominal Rotor Diameter (M)	Nominal Hub Height (M)	Maximum Tip Height (M)	Turbine Model	Comment
Ornithology	136	81.9 – 86.9	149.9	Not specified	66.7m blades assumed as worst case for collision risk (i.e. longest blades for a 149.9m turbine).
Cultural Heritage	136	81.9	149.9	Not specified	
Traffic and Transport	-	-	-	Not specified	66.7m blades assumed as worst case for turbine delivery (i.e. longest blades for a 149.9m turbine).
Noise	126	86.9	149.9	Vestas V126 3.45MW turbine	Representative of worst case (in noise terms) of turbines that could be installed within general turbine parameters.
Other Issues	136	81.9	149.9	Not specified	

1.4 Proposed Variations to the Consented Development

1.4.1 The proposed variations to the Consented Development are summarised below, and shown on Figure 1.3: Proposed Variations (see also Chapter 4: Description of Development):

- Removal of four turbines from the consented layout;
- Increase in the height of the remaining eleven turbines from 130m up to a maximum blade tip height of 149.9 m (with a maximum rotor diameter of up to 136m);
- Reduction in length of access track given removal of four turbines;
- Removal of the consented additional operations building;
- Repositioning of temporary batching plant;
- Amendment to indicative Borrow Pit (BP) extraction volumes;
- Removal of Permanent Operational Met Mast;
- Repositioning and substitution of the Permanent Meteorological Mast to a LiDAR and associated 4x4 track; and
- Retention of existing operational Gordonbush Wind Farm meteorological mast (southern).

1.4.2 Table 1.4 provides a comparison between the Consented Development and the Proposed Varied Development.

Table 1.4: Comparison between the Consented Development and the Proposed Varied Development

Description	s.36 Consented Development	s.36C Proposed Varied Development
Number of turbines (WTG)	15	11
Maximum Tip Height (TH)	115m x 3 (WTG)	N/A – These turbines are removed
	130m x 12(WTG)	Up to 19.9m increase @149.9m x 11 (WTG)
Maximum Rotor Diameter (RD)	Max RD 93m (3 WTG @ 115m TH)	N/A – These turbines are removed
	Max RD 105m (12 WTG @ 130m TH)	Up to Max 136m x 11 (WTG)
Turbine Positions	As per Consented layout	No change to remaining eleven turbines
Borrow Pits	BP1 indicative extraction volume= 48,000m ³ BP2 indicative extraction volume= 96,000m ³ Net indicative extraction volume= 144,000m ³	No change to BP search area. Amend the indicative volume of extraction BP1: increase from 48,000m ³ to 105,600m ³ BP2: decrease from 96,000m ³ to 39,600m ³ . Net indicative extraction volume increased to 145,200m ³
Temporary Batching Plant	North of BP2	New location
New Access Tracks	7.96km	5.33km
Operations Building	As per Consented Development layout	No longer required.
Meteorological Mast	Permanent and temporary met mast as per Consented Development layout. Removal of existing operational Gordonbush Wind Farm meteorological mast (southern).	LiDAR proposed, removing requirement for permanent and temporary met masts. Retention of existing operational Gordonbush Wind Farm meteorological mast (southern).

- 1.4.3 The application boundary would remain unchanged, as would the location of the remaining eleven turbines.
- 1.4.4 It is anticipated that access to the site would utilise the same delivery route as proposed for the Consented Development (and as used and upgraded for Gordonbush Wind Farm), subject to modifications to accommodate the longer turbine blades. Further details are provided in Chapter 12: Traffic and Transport, and accompanying appendices.
- 1.4.5 Further details of the Proposed Varied Development are included in Chapter 4: Description of Development.