

CHAPTER 3: CONSIDERATION OF ALTERNATIVES

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3. CONSIDERATION OF ALTERNATIVES

3.1 Introduction

3.1.1 This Chapter focusses on the environmental and technical factors considered as part of the decision by the Applicant to apply for variation of the Consented Development by reducing the number of turbines from fifteen to eleven, and increasing the tip height of the remaining turbines from 130m up to a maximum tip height of 149.9m (and a maximum rotor diameter of up to 136m), to form the Proposed Varied Development.

3.2 Site Selection and Design Evolution

3.2.1 Gordonbush Wind Farm became operational in June 2012 and generates enough renewable electricity to power around 60,000 homes each year¹. It is considered to be one of SSE's best performing sites. Developing an extension to Gordonbush Wind Farm is seen as an opportunity to expand an operational wind farm site, increasing operating efficiency whilst minimising additional environmental effects when compared to a new site for a project of a similar size.

3.2.2 Environmental assessment work on Gordonbush Estate has been on-going for over a decade as part of the design, assessment, development, construction and on-going monitoring of the operational Gordonbush Wind Farm and the Consented Development.

3.2.3 The layout of the Consented Development evolved through consideration of a number of technical and environmental factors, such as spacing between turbines, ground conditions, steepness of slope, peat depth, and avoidance where practicable of sensitive habitats, ornithological and cultural heritage constraints. Within these parameters, landscape and visual considerations aimed to achieve a turbine layout that relates to the landform of the site and adjacent areas, whilst achieving a balanced composition with the surrounding landform and skyline in consideration with the operational Gordonbush Wind Farm, as seen from key receptors. Further information on alternatives studied may be found in the 2015 ES.

3.2.4 The Proposed Varied Development would remove four turbines and associated access tracks from the Consented Development but there would be no change to the positioning of the remaining turbines and associated access tracks. The four turbines identified for removal were those closest to Strath Brora (WTG's 11, 13, 14 and 16). Design considerations for the Proposed Varied Development focussed on increasing the turbine tip height and rotor diameter, with respect to a number of environmental considerations, principally:

- Landscape and Visual;
- Traffic and Transport;
- Ornithology;
- Noise; and
- The requirement for an aviation lighting scheme.

3.2.5 A range of turbines between 130m and 149.9m tip height were considered for the variation application as these represented the most technically and commercially viable turbines for this site at this time. Following review of potential environmental effects and technical considerations, and following positive feedback from statutory consultees, a decision was made by the Applicant to progress with the 149.9m tip height.

¹ based on OFGEM's typical annual domestic household consumption of 3,100 kWh a year.