Technical Appendix 9.1: Transport Assessment

Pell Frischmann

Ravengill Energy Park

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1 Introduction

1.1 Purpose of the Report

Pell Frischmann Consultants Limited (PF) has been commissioned by Ramboll UK Limited (Ramboll), on behalf Ravengill Energy Park Limited (hereafter referred to as 'the Applicant') to undertake a Transport Assessment (TA) for the proposed Ravengill Energy Park (hereafter referred to as 'the Proposed Development'), which is located within the South Lanarkshire Council (SLC) administrative area.

The TA identifies the key transport and access issues associated with the Proposed Development, including the route for Abnormal Indivisible Loads (AILs). The TA identifies where the Proposed Development may require mitigation works to accommodate the predicted traffic; however, the detailed design of these remedial works is beyond the agreed scope of this report. The findings of this report have informed the assessment of traffic and transport related effects in the Environmental Impact Assessment (EIA) Report (EIAR) in **Chapter 9 Traffic and Transport (EIAR Volume 2)**.

1.2 Report Structure

Following this introduction, the TA report is structures as follows:

- Section Two describes the Proposed Development;
- Section Three reviews the relevant transport and planning policies;
- Section Four sets out the methodology used in this assessment;
- Section Five describes the baseline transport conditions;
- Section Six describes the trip generation and distribution of traffic in the Study Area;
- Section Seven summarises the traffic impact assessment;
- Section Eight considers mitigation proposals for development related traffic within the study network; and
- Section Nine summarises the findings of the TA and outlines the key conclusions.

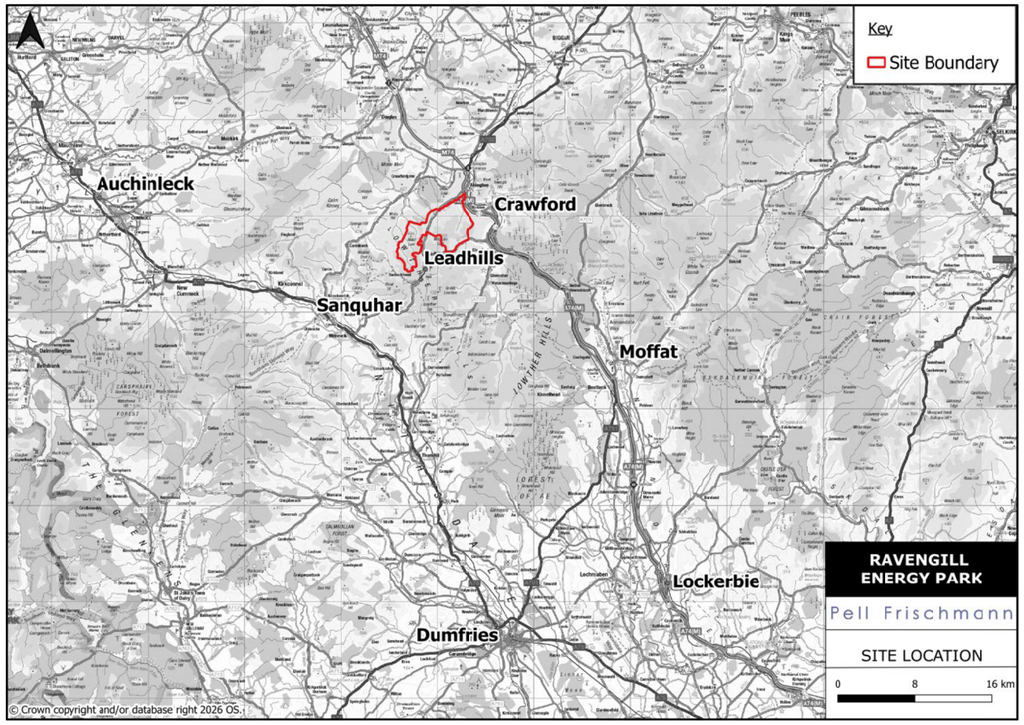
2 Site Background

2.1 Site Location

The Site covers an area of approximately 2,555 hectares (ha). The Site is located north of Leadhills village, south of Abington village and west of the A74(M) motorway. The Site is within the administrative boundary of SLC.

The Site predominantly comprises open moorland, improved grassland and semi-improved grassland, with areas of forestry located in the valleys, predominantly to the east of the B797. The application boundary is shown in **Figure 1**.

Figure 1 Site Location



2.2 Proposed Development

The Proposed Development would comprise the following:

- 21 wind turbines with a maximum tip height of 220 metres (m);
- permanent foundations supporting each wind turbine, and associated crane hardstanding at each wind turbine base;
- a temporary construction site entrance from the A74(M) motorway, to allow delivery of AILs only, required for turbine component delivery. Empty AIL vehicles would return to the road network via the B797 road, rejoining the M74 at Junction 14;
- two new junctions on the B797 road for site traffic and two new junctions on the C16 Crawfordjohn Road between the B797 and B740 at Crawfordjohn, one to the west and one to the east;
- a series of new on-site access tracks with associated watercourse crossings (where the final layout dictates), which may include upgrade and/or relocation of existing access tracks across the Site;
- underground power cables, generally laid in trenches alongside access tracks;

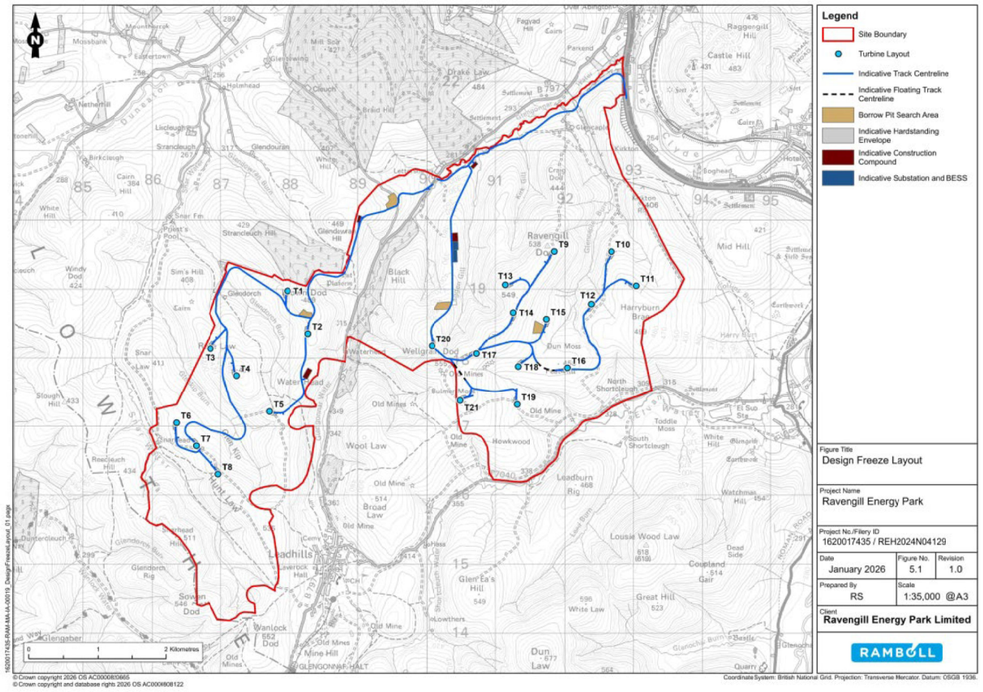
- on-site substation and control building;
- temporary construction compounds and laydown areas; and
- a BESS, with approximately 50 MW capacity, co-located with the on-site substation; and
- four temporary construction compounds and laydown areas, the main one located adjacent to the substation and BESS sites and three satellite compounds: two located in the western area of the Site and the other located in the northern area.

In addition, the following ancillary works would be necessary:

- extraction of rock from borrow pits. Four borrow pit search areas have been located within the Site;
- temporary on-site concrete batching plant. This would be located within the temporary compound areas and/or one of the borrow pit search areas; and
- where necessary, works on land outside the main development area and immediately adjacent to the A74(M) to facilitate the delivery of AIL (e.g. construction of over-run areas and temporary modifications to street furniture etc).

The Proposed Development is shown in **Figure 2**.

Figure 2 Proposed Development Layout



2.3 Access Arrangements

Construction vehicles would enter the Site from the B797 via newly provided access junctions, which would facilitate access to the eastern section and the western section of the Site. A crossing point would be provided on the C16 Crawfordjohn Road between the B797 and B740 at Crawfordjohn.

AIL delivery vehides would access the Site via a newly provided temporary construction site entrance from the A74(M). Empty AIL delivery vehicles would return to the road network via the B797 and A702,, rejoining the M74 at Junction 14.

Indicative layouts of the proposed access junctions are provided in **Annex A.**

Access for construction materials would be from the M74 / A74(M), joining the A702 at junction 14 and subsequently via the B797. No HGV construction vehicles are anticipated to travel through Leadhills or Abington villages. Where feasible, local materials would be sourced locally which would avoid traffic impacting on local communities as far as practicable.

2.4 Candidate Turbines

The Applicant has indicated that they wish to consider the Siemens Gamesa SG170 blade and a worst-case tower section, which is 30 m long and 4.8 m in width for the route assessment (refer to **Table 1)**. Note these are indicative component dimensions at this time and are subject to change.

Table 1 Turbine Component Summary

Component	Length (m)	Width (m)	Height/Min Diameter (m)	Weight (t)
SG170 Blade	83.74	4.186	3.5	29.0
Worst Case Tower Section	30.00	4.800	4.8	-

There is potential that the lower sections of the tower would be made from concrete and in this situation transport of these would not represent an AIL; however, the worst-case loads for kinematic envelope are therefore the blade and a combined tower load using the maximum width and length of the two sections.

A detailed Route Survey Report (RSR) has been prepared and appends this TA as **Annex B**.

The selection of the final turbine model and specification would be subject to a commercial procurement process following consent of the application. The assumed dimensions may therefore vary slightly from those assumed as part of this assessment, however the turbine tip height would be no greater than 220 m.

With regards to the equipment used to transport the turbine components, to provide a robust assessment scenario based upon the known issues along the access route, it has been assumed that all blades would be loaded onto a dolly clamp trailer to reduce the need for mitigation in constrained sections of the route.

Towers would be carried in a 4+7 clamp adaptor style trailer, whereas loads such as the hub, nacelle housing and top towers would be carried on a six-axle step frame trailer.

Examples of the vehicles and trailers that are likely to transport loads are shown in F**igures 9.1.3** and **9.1.4**.