

ENVIRONMENTAL STATEMENT

Contents

Volume 1 – Non-Technical Summary

Volume 2 – Main Text

Volume 3 – Appendices

Volume 4 – Figures

Volume 5 – LVIA Visualisation Figures

Supporting Reports:

Planning Statement

Pre-Application Consultation Report

Copies of the Environmental Statement (ES) may be obtained from Talladh-a-Bheithe Wind Farm Limited care of JLL (Tel: 0131 225 8344). Volumes 2 and 3 of the ES (the written text) are available at a charge of £200 per hard copy, Volumes 4 and 5 of the ES (the Figures) are available at a cost of £300 per hard copy and the short non-technical summary (volume 1) is available free of charge. CD copies of the whole ES are available at a cost of £10.

To make representations on the proposals please direct these to:

Energy Consents and Deployment Unit

Scottish Government

4th Floor

5 Atlantic Quay

150 Broomielaw

Glasgow

G2 8LU

Email: representations@scotland.gsi.gov.uk

For further information please visit the project website at www.tab-windfarm.org or email talladhabheithe@communityline.org



Volume 2 - Main Text: Contents

1	Introduction	1.1
1.1	Background and Site Description	1.1
1.2	Purpose of Environmental Statement	1.2
1.3	Structure of Environmental Statement	1.2
1.4	Assessment Team	1.4
1.5	Availability of the Environmental Statement	1.5
1.6	Representations to the Application	
2	Design and Evolution and Alternatives	2.1
2.1	Introduction	2.1
2.2	Site Selection	2.1
2.3	Site Description	2.2
2.4	Design process	2.2
2.5	Design Principles	2.2
2.6	Turbine Layout Iterations – Phase One – Pre EIA Scoping	2.3
2.7	Phase Two – Post EIA Scoping	2.6
2.8	Phase Three – Ongoing Design Iteration on Layout Option Two	2.13
2.9	Summary	2.15
3	The Proposed Development	3.1
3.1	Introduction	3.2
3.2	Site Status and Context	3.2
3.3	Description of the Proposed Development	3.3
3.4	Operation and Maintenance	3.6
3.5	Summary	3.7
3.6	References	3.7
4	Construction and Decommissioning	4.1
4.1	Introduction	4.1
4.2	Construction Programme	4.2
4.3	Construction Strategy and Contracting Strategy	4.3
4.4	Construction Employment	4.4
4.5	Hours of Work	4.5
4.6	Construction Traffic and Plant	4.7
4.7	Description of Construction Works	4.13
4.8	Construction and Decommissioning Management	4.16
4.9	Potential Construction and Decommissioning Phase Environmental Impacts	4.17
10.10	Glossary	
5	EIA Process and Methodology	5.1
5.1	Introduction	5.1
5.2	Legislation, Policy and Guidance	5.3
5.3	Legal Framework for the ES	5.5
5.4	The EIA Process	5.6
5.5	Scope of the EIA	5.7
5.6	Regulatory Consultation	5.8
5.7	Assessment of Effects	5.9
5.8	Mitigation Measures	5.10
5.9	Enhancement	5.10
5.10	Assumptions, Limitations and Uncertainty	5.11
5.11	Public Consultation	5.11
5.12	Summary	5.12
6	Planning and Policy Context	6.1
6.1	Introduction	6.1
6.2	Renewable Energy Policy	6.1
6.3	The Development Plan	6.13

6.4	Perth & Kinross Local Development Plan	6.17
6.5	Material Considerations	6.24
6.6	Summary	6.33
7	Landscape and Visual Impact Assessment	7.1
7.1	Assessment Methodology	7.2
7.2	Landscape Planning Policies and Designations	7.10
7.3	Planning Designations	7.12
7.4	Wild Land ('Search Areas for Wild Land' and 'Core Areas of Wild Land')	7.16
7.5	Baseline Conditions	7.19
7.6	Baseline Landscape Character	7.20
7.7	Local Level Landscape Appraisal	7.28
7.8	Baseline Visual Receptors	7.31
7.9	Assessment Viewpoints	7.35
7.10	Project Description	7.36
7.11	Assessment of Effects on Existing Landscape Features	7.36
7.12	Assessment of Effects on Landscape Character	7.37
7.13	Assessment of Effects on Visual Receptors	7.55
7.14	Effects on Landscape Designations	7.64
7.1.5	Effects on Wild Land ('Search Areas for Wild Land' and 'Core Areas of Wild Land')	7.66
7.16	Cumulative Landscape and Visual Effects	7.74
7.17	Mitigation Measures	7.79
7.18	Residual Effects	7.80
8	Ecology	8.1
8.1	Introduction	8.1
8.2	Methods	8.2
8.3	Baseline Conditions	8.10
8.4	Assessment of Effects	8.18
8.5	Mitigation	8.25
8.6	Cumulative Impacts	8.27
8.7	Summary of Conclusions	8.27
9	Ornithology	9.1
9.1	Introduction	9.1
9.2	Methods	9.2
9.3	Baseline Conditions	9.13
9.4	Assessment of Effects	9.25
9.5	Mitigation	9.45
9.6	Cumulative Impacts	9.48
9.7	Summary of Conclusions	9.50
9.8	Statement of Significance	9.56
9.9	Impacts on designated sites	9.56
10	Historic Environment	10.1
10.1	Introduction	10.1
10.2	Planning and Legislation Background	10.2
10.3	Issues Identified During Consultation	10.2
10.4	Assessment Methodology	10.4
10.5	Baseline Conditions	10.9
10.6	Impact Assessment	10.13
10.7	Proposed Mitigation	10.18
10.8	Residual Impacts	10.20
10.9	Summary	10.20
10.10	Glossary/Abbreviations	10.21
11	Geology, Hydrogeology & Hydrology	11.1
11.1	Introduction	11.1
11.2	Scope of Assessment	11.1
11.3	Policy Context	11.5

11.4	Methodology	11.8
11.5	Baseline Conditions	11.11
11.6	Project Design	11.24
11.7	Effects Evaluation	11.26
11.8	Monitoring and Enhancement Measures	11.46
11.9	Summary	11.47
12	Noise	12.1
12.1	Scope of Assessment	12.1
12.2	Noise Terminology	12.1
12.3	Policy Context	12.2
12.4	Evaluation Criteria	12.5
12.5	Method of Prediction of Change of Results	12.6
12.6	Study Area and Sensitive Receptors	12.10
12.7	Evaluation of Effects	12.12
12.8	Mitigation Measures	12.14
12.9	Findings	12.15
12.10	Future Monitoring Requirements	12.15
12.11	Noise Condition	12.16
12.13	Future Scenario without the Development	12.16
13	Electromagnetic Interference, Aviation and Shadow Flicker	13.1
13.1	Introduction	13.1
13.2	Aviation & Mod Assessment	13.2
13.3	Telecommunications Infrastructure	13.4
13.4	Other Infrastructure within the Site Boundary	13.6
13.5	Shadow Flicker	13.7
14	Access Traffic & Transport	14.1
14.1	Introduction	14.1
14.2	Scope of Assessment	14.1
14.3	Guidance, Methodology & Policy	14.2
14.4	Methodology	14.2
14.5	Transport & Environmental Policy	14.3
14.6	Significance Criteria	14.3
14.7	Construction Standards	14.4
14.8	Baseline Conditions / Vehicle Routes	14.4
14.9	Proposals for Mitigation & Monitoring	14.5
14.10	Predicted Impacts & Effects	14.7
14.11	Construction Effects	14.7
14.12	Percentage Effects	14.12
14.13	Summary	14.13
14.14	Evaluation of the Significance Effect	14.13
14.15	Summary of Assessment	14.14
15	Socio-Economic Assessment	15.1
15.1	Introduction	15.1
15.2	Methodology	15.2
15.3	Baseline Conditions	15.22
15.4	Potential Economic Effect	15.29
15.5	Potential Tourism Effects	15.32
15.6	Mitigation	15.33
15.7	Residual Effects	15.34
15.8	Summary and Conclusions	15.35
15.9	References	15.35
16	Carbon Balance Assessment	16.1
16.1	Introduction	16.1
16.2	Wind Farm CO2 Emission Savings	16.6
16.3	Emissions due to Turbine Life	16.6

16.4	Capacity Required due to Back Up	16.7
16.5	Loss of Carbon Fixing Potential	16.8
16.6	Loss of Carbon Dioxide from Removed Peat (Direct Loss)	16.9
16.7	Loss of Carbon Dioxide from Drained Areas left in Situ (Indirect Loss)	16.11
16.8	Loss of Carbon Dioxide from DOC and POC loss	16.12
16.9	Total Loss of Carbon Dioxide from Impact on Peat	16.12
16.10	Loss of Carbon Fixing Potential due to Forest Felling	16.13
16.11	Carbon Gain Due to Site Improvement and Restoration	16.13
16.12	Carbon Balance Summary and Conclusions	16.15
17	Summary of Residual Effects	17.1
17.1	Introduction	17.1

ENVIRONMENTAL STATEMENT

Volume 3 – Appendices

Contents

Chapter 4 Construction and Decommissioning.

Appendix 4.1 Borrow Pit Search Report

Chapter 7 Landscape and Visual

Appendix 7.1 LVIA Methodology

Appendix 7.2 Preliminary Review of Landscape Character Types

Appendix 7.3 Viewpoint Assessment

Appendix 7.4 Assessment of SNH Wild Land Designation

Chapter 8 Ecology

Appendix 8.1 Vegetation Assessment

Appendix 8.2 Mammal Assessment

Chapter 9 Ornithology

Appendix 9.1 Ornithological Assessment

Appendix 9.2 Outline Habitat Management Plan

Chapter 10 Historic Environment

Appendix 10.1: Historic Environment Assets identified within the Site

Appendix 10.2: External Receptors within 10km of the Proposed Wind Farm Plates

Chapter 11 Geology, Hydrogeology and Hydrology

Appendix 11.1 Peat Stability Risk Assessment

Appendix 11.2 Peat Management Plan

Appendix 11.3 Watercourse Crossing Assessment

Chapter 13 Electromagnetic Interference, Aviation and Shadow

Appendix 13.1 Aviation & Communication Responses

Chapter 14 Access, Traffic and Transport

Appendix 14.1 Transport Statement

Chapter 16 Carbon Balance Assessment

Appendix 16.1 Table of Calculation Assumptions

Appendix 16.2 Laboratory Test Certificates

Appendix 16.3 Carbon Calculator Work Sheets

www.tab-windfarm.org



ENVIRONMENTAL STATEMENT

Volume 4 – Figures

Chapter 1 Introduction

Figure 1.1 Estate boundary
Figure 1.2 Site location and site boundary

Chapter 2 Design Evolution and Alternatives

Figure 2.1 Talladh-a-Bheithe Estate Boundary
Figure 2.2 Estate Boundary and Approximate Turbine Location Plan
Figure 2.3 Detailed map of National Park Extension north of the Estate
Figure 2.4 Special Protection Areas (SPA)
Figure 2.5 Historical Gardens and Designed Landscapes
Figure 2.6 Special Areas of Conservation (SAC)
Figure 2.7 Site of Special Scientific Interest (SSSI)
Figure 2.8 National Nature Reserves (NNR)
Figure 2.9 National Scenic Areas (NSA)
Figure 2.10 Ramsar Sites
Figure 2.11 National Parks
Figure 2.12 Groundwater Vulnerability
Figure 2.13 Site Constraints
Figure 2.14 Layout Plan - Option 1
Figure 2.15 Photomontage Locations and ZTV map for Layout Plan Option 2
Figure 2.16 Layout Plan – Option 2

Chapter 4 Construction and Decommissioning.

Figure 4.1 Site Layout
Figure 4.2 Upgraded Estate Roads
Figure 4.3 Site Access Tracks
Figure 4.4 Typical Wind Turbine
Figure 4.5 Typical Wind Turbine Foundation
Figure 4.6 Typical Crane Hardstanding
Figure 4.7 Typical Substation Plan
Figure 4.8 Typical Substation Elevations
Figure 4.9 Typical Construction Compound
Figure 4.10 Typical Track Cross Drainage

Chapter 7 Landscape and Visual

7.1 Site Location and LVIA Study Area (35km)
7.2 Other Existing and Proposed Windfarms within 70km
7.3 Landscape Designations and Policy
7.4 Landscape Character Types within 35km
7.5 Landscape Character Types within 10km
7.6 Local Landscape Context
7.7 Topography Plan
7.8 Principal Visual Receptors within 35km
7.9 Blade Tip Height ZTV to 35km
7.10 Hub Height ZTV to 35km
7.11 Blade Tip Height ZTV to 35km (NE Quadrant)
7.12 Blade Tip Height ZTV to 35km (SE Quadrant)
7.13 Blade Tip Height ZTV to 35km (SW Quadrant)
7.14 Blade Tip Height ZTV to 35km (NW Quadrant)
7.15 Blade Tip Height ZTV to 10km (Site Centred)
7.16 Hub Height ZTV to 35km (NE Quadrant)
7.17 Hub Height ZTV to 35km (SE Quadrant)
7.18 Hub Height ZTV to 35km (SW Quadrant)
7.19 Hub Height ZTV to 35km (NW Quadrant)
7.20 Hub Height ZTV to 10km (Site Centred)
7.21 Viewpoint Location Plan
7.22 LCTs within 35km Overlaid on Blade Tip Height ZTV
7.23 Principal Visual Receptors within 35km Overlaid on Blade Tip Height ZTV
7.24 Landscape Policy and Designations overlaid on Blade Tip Height ZTV

7.25 – 7.49 Visualisations 1 – 25 (Contained in Volume 5)

7.50 Other Existing and Proposed Wind Farms in Cumulative Assessment
7.51 Cumulative ZTV - Griffin
7.52 Cumulative ZTV - Stronelairg
7.53 Cumulative ZTV - Calliacher
7.54 Cumulative ZTV – Braes of Doune
7.55 - 58 Cumulative Wireframes

Chapter 8 Ecology

Figure 8.1 North, Southeast and Southwest Study Areas
Figure 8.2 Location of proposed development
Figure 8.3 Protected Sites
Figure 8.4 Phase 1 Habitat Survey
Figure 8.5 NVC Survey
Figure 8.6 Otter Survey
Figure 8.7 Mammal Species Evidence

Chapter 9 Ornithology

Figure 9.1 Location of proposed development
Figure 9.2 North, Southeast and Southwest Study Areas
Figure 9.3 Protected Sites

Chapter 10 Historic Environment

Figure 10.1: Heritage Constraints
Figure 10.2: Blade Tip ZTV and Key Heritage Assets

Chapter 11 Geology, Hydrogeology and Hydrology

Figure 11.1 Hydrology Overview
Figure 11.2 Hydrological Characteristics
Figure 11.3 Flow Accumulation and Direction
Figure 11.4 Topographic Wetness Index
Figure 11.5 Permeability of Bedrock and Superficial Geology
Figure 11.6 Groundwater Flooding Potential

Chapter 12 Noise

12.1 Noise Receptors

Chapter 13 Electromagnetic Interference, Aviation and Shadow

Figure 13.1 Aviation Constraints
Figure 13.2 Existing Infrastructure

www.tab-windfarm.org



CONTENTS

Figure 7.25	Viewpoint 1 - Kinloch Rannoch (Car park adjacent to Loch Rannoch)
Figure 7.26	Viewpoint 2 - Bridge of Gaur
Figure 7.27	Viewpoint 3 - Rannoch Railway Station
Figure 7.28	Viewpoint 4 - Leagag
Figure 7.29	Viewpoint 5 - Meall Buidhe (Peak at the southern extent of Meall Buidhe ridge)
Figure 7.30	Viewpoint 6 - Meall a Mhuic
Figure 7.31	Viewpoint 7 - Meall Garbh
Figure 7.32	Viewpoint 8 - Schiehallion
Figure 7.33	Viewpoint 9 - Beinn Mholach
Figure 7.34	Viewpoint 10 - Loch Ericht, shoreline
Figure 7.35	Viewpoint 11 - Ben Alder summit
Figure 7.36	Viewpoint 12 - A82 Rannoch Moor
Figure 7.37	Viewpoint 13 - West Highland Way
Figure 7.38	Viewpoint 14 - Ben Lawers
Figure 7.39	Viewpoint 15 - Meall Reamhar
Figure 7.40	Viewpoint 16 - Southern shore of Loch Rannoch nr Croiscrag
Figure 7.41	Viewpoint 17 - Southern shore of Loch Rannoch at Tay Forest Park Car Park
Figure 7.42	Viewpoint 18 - Stob Dearg
Figure 7.43	Viewpoint 19 - Rannoch Moor – within the moor
Figure 7.44	Viewpoint 20 - Glencoe Ski Centre – top of first lift
Figure 7.45	Viewpoint 21 - Meall Gorm
Figure 7.46	Viewpoint 22 - Sgor Gaibhre
Figure 7.47	Viewpoint 23 - Sron Bealach (Ben Alder massif)
Figure 7.48	Viewpoint 24 - Beinn Udlamain
Figure 7.49	Viewpoint 25 - Carn Dearg